9 ATTACHMENT 3 – WORK PLAN

All Proposals must include a detailed description of the proposed implementation project(s) for which funding will be requested. The goals and objectives of the Proposal must be identified. Where requested funding is for a component of a larger project, this section must describe all of the components of the larger project and identify which elements of the project the IRWM Grant is proposed to fund. Linkages to any other projects that must be completed first or that are essential to obtain the full benefits of the Proposal must be discussed.

Based on the goals and objectives of the Proposal, a description of all work that will be necessary to complete the project or suite of projects must be included in this section. The Work Plan should include a description of work to be performed under each task and deliverables for assessing progress and accomplishments. The description should include as much detail as possible, and explain all tasks necessary to complete the Proposal and how the applicant will coordinate with DWR.

Scoring will be based on whether the applicant has presented a detailed and specific work plan that adequately documents the Proposal (i.e. suite of projects).

Does the Work Plan contain an introduction that includes:

a) Goals and objectives of the Proposal and how the Proposal helps achieve the goals and objectives of the adopted IRWM Plan?
b) A tabulated overview of each project, including an abstract and project status;
c) A map showing relative project locations; and
d) A discussion of the synergies of linkages among projects?

- *Are the tasks for each project of adequate detail and completeness so that it is clear that the project can be implemented?*
- *Do the tasks include appropriate deliverables and reporting submittals (i.e. quarterly and final reports)?*
- *Is the proposal consistent with the applicable Basin Plan?*
- *Do the tasks collectively implement each project in the Proposal?*
- *Is this a study or part of a larger – multi-phased project effort? If so, will the proposed project(s) be operational as a standalone project(s) without the completion of the end of project(s)?*
- *Does the Work Plan include a listing of required permits and their status including CEQA compliance?*
- *Are the submitted plans and specifications consistent with the design tasks included in the Work Plan?*

- *Does the Work include Data Management and Monitoring Deliverables consistent with the IRWM Plan Standards and Guidance-Data management Standard?*

9.1 Work Plan Introduction

9.1.1 Goals and Objectives for Proposal

The general goals and objectives for this proposal are to:

1. Develop and further programs for water supply reliability, water conservation and water use efficiency;
2. Diversify water supplies and further regional partnerships;
3. Enhance storm water capture, storage, treatment and management;
4. Increase groundwater recharge, management and water quality projects;
5. Reduce flood damage, and
6. Provide equitable benefits to disadvantaged communities.

More specifically, the primary goals of the City of Visalia for the Packwood Creek Recharge Project are to develop a greater groundwater recharge capacity in Packwood Creek and maximize the existing surplus water delivery agreements with Tulare ID. The City of Lindsay's Well 15 Water Quality Project's primary goal is to develop a system to successfully treat a bacteriological issue and provide more reliable service to City residents.

9.1.2 Overview of Each Project

9.1.2.1Packwood Creek Recharge Project

Abstract: The proposed Project is located on Packwood Creek, a distributary of the Lower Kaweah River. The Project is an effort to increase the recharge potential in Packwood Creek by developing 5 structures along the 4.5 mile section of the creek that runs through the City of Visalia. The effort is a cooperative project between the City of Visalia, Tulare ID and Kaweah Delta WCD that attempts to maximize the effectiveness of existing arrangements where Tulare ID will deliver surplus water for groundwater recharge. The 5 developed structures are anticipated to increase the City's annual groundwater recharge by 400 AF/year or more and will help to offset groundwater overdraft. Four new structures will be constructed and one existing structure will be modified. Each of these structures will be outfitted with an automated gate to regulate upstream water surfaces while maintaining downstream flows. SCADA at each location will relay project operational information to Kaweah Delta WCD, Tulare ID and the City

of Visalia to better inform decision makers. The automated gate will increase water surfaces in Packwood Creek when controlled flows are available and there is no likelihood of rainfall events. The total project budget is approximately $1.88 Million.

Tabulated Summary Info

Project Goals & Objectives:

Develop Additional Rechage Capacity	
Increase GW Supply Reliability	
Beneficially use available surplus water	
Further Regional Partnerships	

Existing Partners:

Kaweah Delta WCD	
Tulare ID	

Project Features:

Exist. Water Agreements with Tulare ID	
Packwood Creek Channel through Visalia	4.5 miles
New Water Control Structures	4
Modified Water Control Sturctures	1
New Automated Gates	5
SCADA Monitoring Locations	5
New Turnouts from TID Canal	3
Increased GW Recharge Capacity	400 AF/Year

Finances:

Total Project Costs	$1,882,560
Federal Funding	$800,000
Local Funding	$50,000
Grant Request	$1,032,560

Schedule:

Project Start	Oct. 2012
Project Completion	July 2014

Status: In 2012 Kaweah Delta WCD successfully applied for $800,000 of Federal grant funds to aid in the development of the Project. Project design is almost complete and environmental documentation and permitting is also well underway. Project construction is hoped to begin in the summer of 2013. Construction will have to happen when there is no threat of rain and runoff in the channel, which likely means construction likely between May and September.

9.1.2.2Well 15 Water Quality Project

Abstract: The principal goal of the Well 15 Water Quality Project (Project) is to give to the City of Lindsay (Lindsay) a dependable and compliant source of groundwater to feed into their delivery system. As water produced by Well No. 15 is compliant with all applicable Federal and State drinking water standards, with the exception of the bacteriological parameter, implementation of the Project would make available the supply on a continuous, year-round basis. As fully compliant wells are rare in the area and as the principal source of supply for Lindsay is to treat raw surface water from the Friant-Kern Canal, the Well No. 15 supply would be available when the surface supply is either insufficient to meet demands due to constraints in available surface water supply, available to meet peak demands due to constraints related to treatment facilities and available as a source when the Friant-Kern Canal is unavailable due to periods of outage for operation and/or maintenance purposes. In the satisfaction of this goal, the Project also achieves the object of providing a source of supply from a facility in which Lindsay has invested a significant amount of public funds and eliminates the need to construct and equip another groundwater extraction facility with its additive capital investment requirement. As part of the Project, construction will include approximately 1,000 feet of 8” diameter PVC pipe to be installed, abandonment of a section of existing pipe, and the construction of three chlorine sampling sites. The total project budget is approximately $400,000.

Tabulated Summary Info

Project Goals & Objectives:

Increase GW Supply Quality	
Equal Distribution of Benefits	
Further Regional Partnerships	

Existing Partners:

City of Lindsay (DAC)	

Project Features:

8” PVC Pipeline	1,000 feet
New Sampling Sites	3
Abandonment of Existing Pipe	
Eliminate CDPH Boil Water Advisory	
Increase Water Supply Reliability	

Finances:

Total Project Costs	$401,400
Federal Funding	$0

Local Funding	$0
Grant Request	$401,400

Schedule:

Project Start	Oct. 2012
Project Completion	Dec. 2014

Status: The conceptual design was completed in 2010 and CDPH accepted the design. Project design can be completed once the location of three sampling sites is determined. Plans and Specifications can be worked on in parallel to finalizing sampling locations, but cannot reach 100% completion until the sites are finalized.

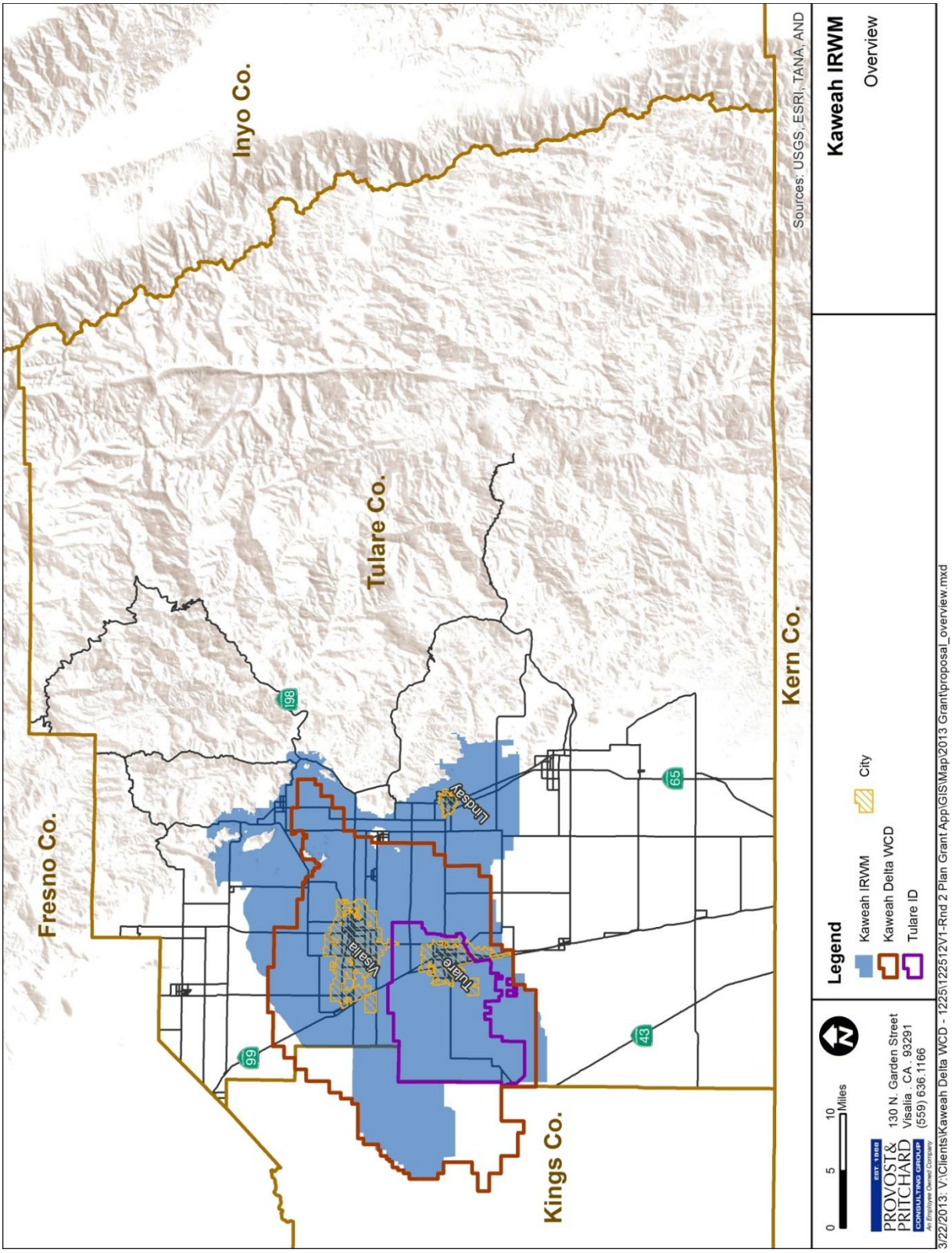


Figure 9.1: IRWM Group Overview

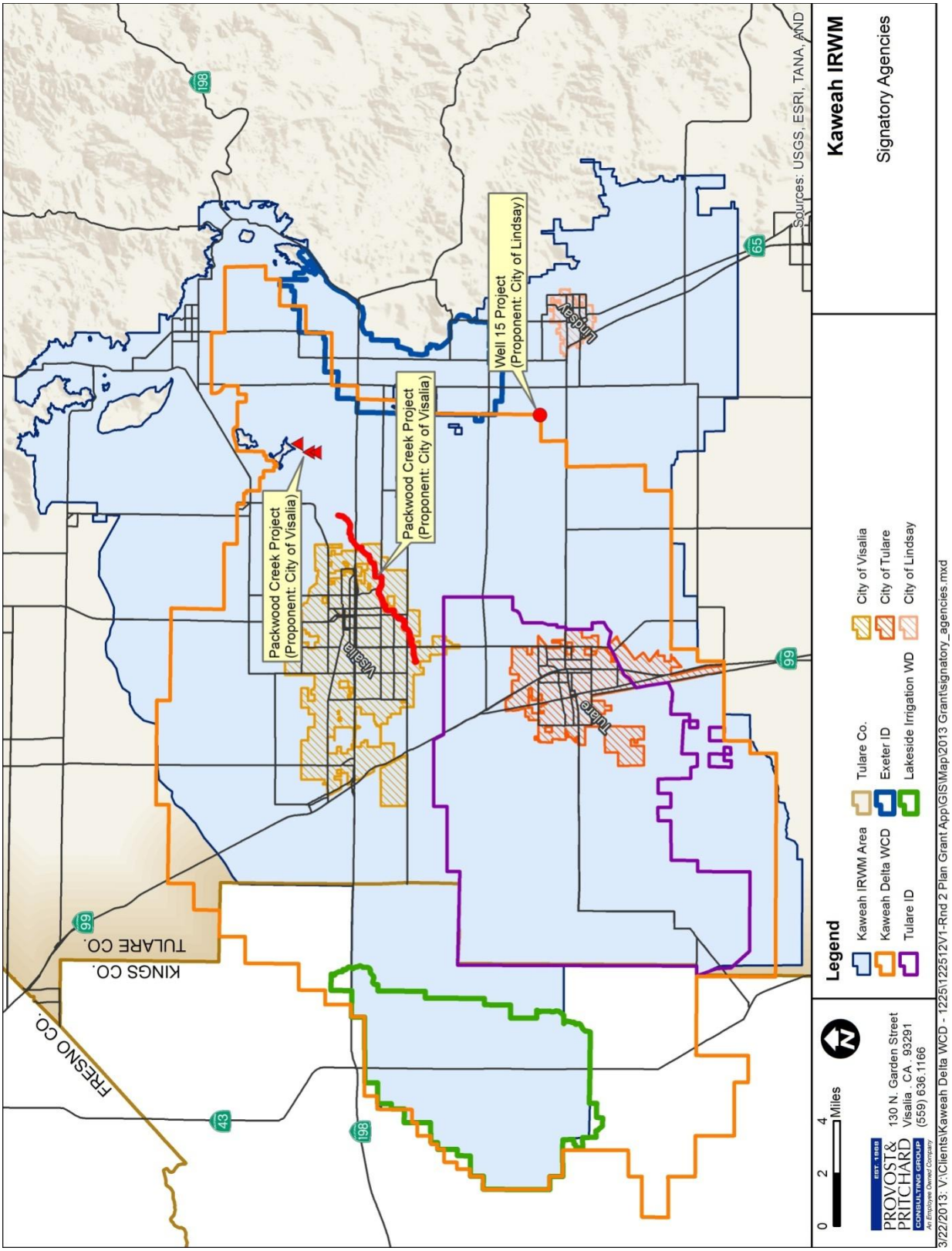


Figure 9.2: IRWM Signatory Agencies and Project Location

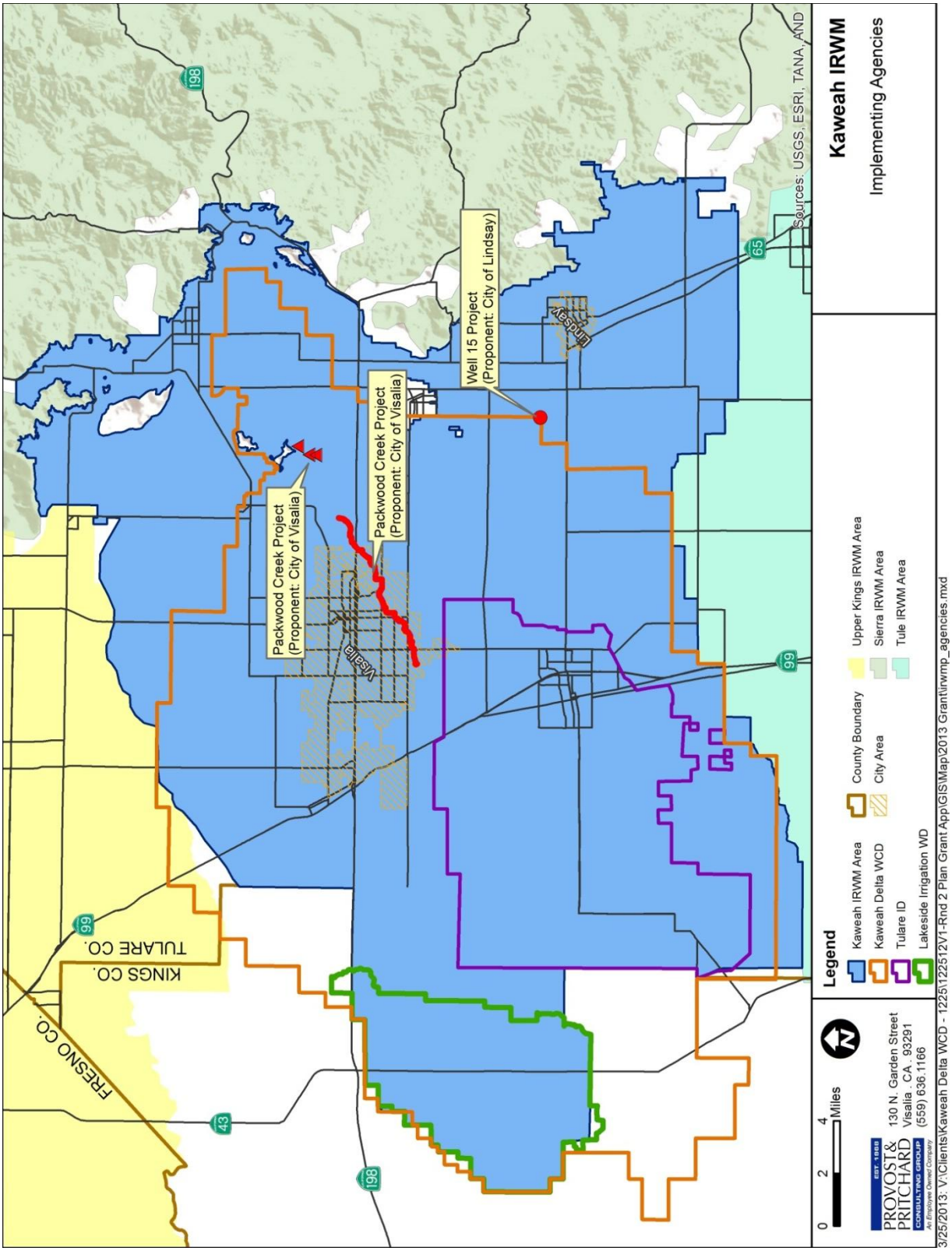


Figure 9.3: Project Locations and the Implementing Agencies

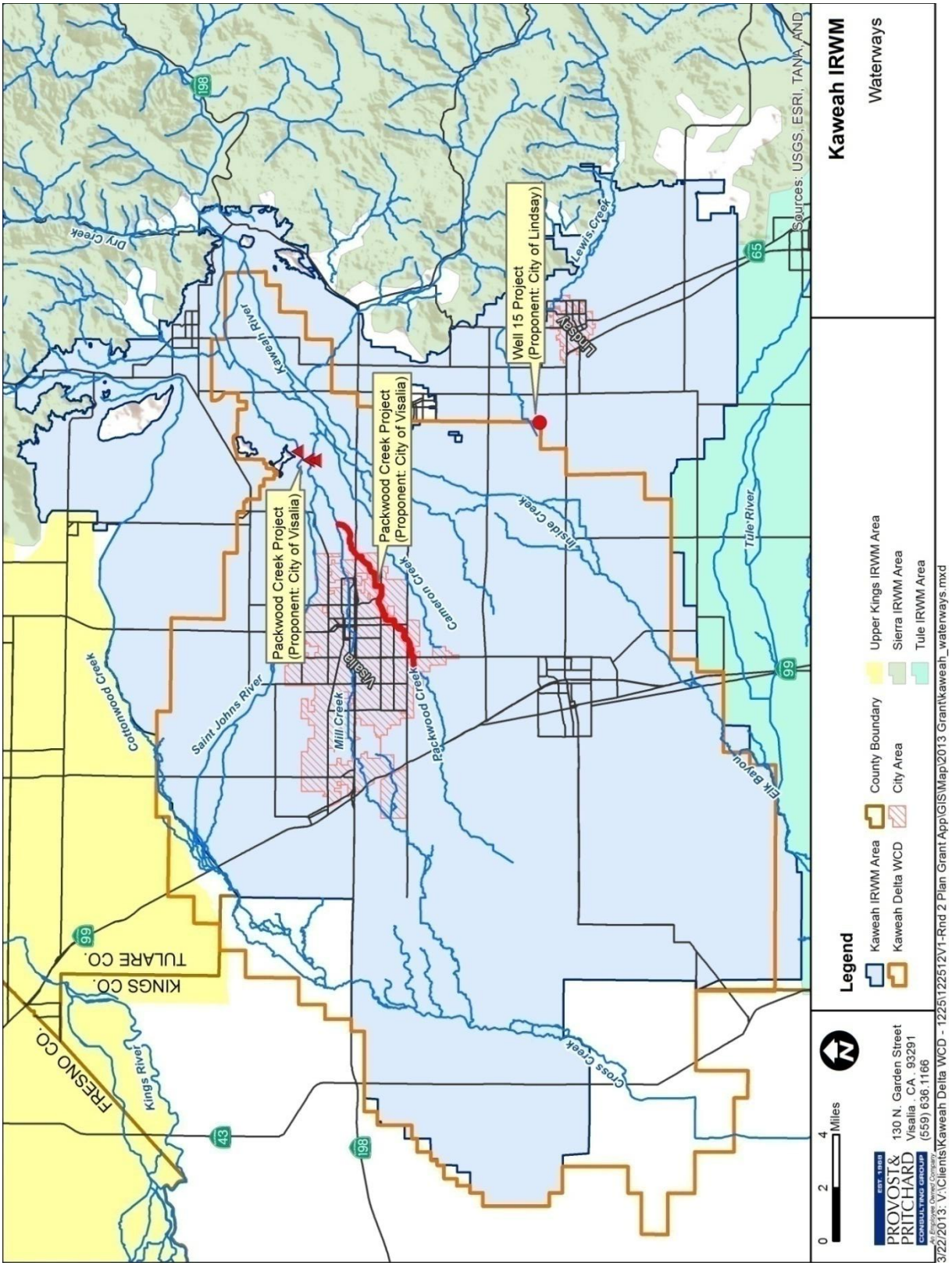


Figure 9.4: Relative Project Locations

9.1.3 Synergies and Linkages

The Packwood Creek Recharge Project and the Well 15 Water Quality Project do not have any direct synergy or linkages between project components that tie or enhance each other. However, Regionally these projects show the synergy and linkages between diverse water management entities working together within the Kaweah Region.

The primary issues facing the Kaweah Region right now are reduced surface water supplies (San Joaquin River Restoration Settlement and South of Delta exports), the large demands that these reductions have generated on groundwater resources and the challenge to develop new water supplies or make existing ones more reliable. Both of these projects address these issues as would be expected given the planning efforts and project selection criteria for an IRWM Region.

The Packwood Creek Recharge Project will make groundwater resources in the City of Visalia more reliable by putting available surplus water from a Project partner to use through the development of additional recharge capacity. The City of Visalia has seen groundwater depths in their area decline on average approximately 0.25 feet per year and understands that in the long-term this trend is not sustainable. This project will aid the City of Visalia by increasing recharge and increase sustainability in the area around the City.

The Well 15 Water Quality Project will improve the water quality at of one of the City of Lindsay's groundwater wells so that it can provide domestic drinking water supplies to a group of homes that are very close to the well, but previously were too close to benefit from chlorine treatment of the water at the well head. The City of Lindsay diverts surface water from the Friant Kern Canal for municipal and industrial uses within the City and holds a water service contract with the Bureau or Reclamation that normally is able to supply the needs of most residents in the City. However, the Friant-Kern Canal regularly must shut down for periods of maintenance and to address emergencies and these occasions create the need for other reliable sources of water for the City. The Well 15 Water Quality Project would replum an existing pipeline to create a longer contact time for chlorine treatment and would thereby enable it to be used in a group of residences as safe domestic drinking water.

The issues that the Kaweah Region faces are very difficult and there are no easy answers to them. However, the projects in this proposal focus on the most critical

issues that are facing the Kaweah Region and together will result in measurable benefits. For that reason these projects have synergy and are linked by the Kaweah Region's priorities and the common challenges to develop water supply.

9.2 Packwood Creek Recharge Project - Completed Work

A description of the work that has been completed or is expected to be completed prior to the grant award date. For example, if CEQA/NEPA and other environmental compliance efforts have been completed discuss the environmental determination made by the lead agency and the documents that were filed.

The Packwood Creek Recharge Project (Project) is a joint Project by the City of Visalia with Kaweah Delta WCD and Tulare ID. The Project is located within and adjacent to the City of Visalia along Packwood Creek and also in Tulare ID's Main Intake Canal where it crosses the Kaweah and St. Johns River.

9.2.1.1Existing Data and Studies

A brief discussion of the data that have been collected and studies that have been performed that support the project(s)' site location, feasibility, and technical methods. If necessary, include references to the page locations of the studies or reports that support the claims made in this discussion.

<u>2001 Cooperative Agreement</u>

The City of Visalia and Tulare ID have an agreement to cooperate on recharge project and that the City will compensate Tulare ID for seepage losses in Packwood Creek if Tulare ID delivers water through the Creek but did not need the additional capacity to make deliveries into their District. This arrangement has been in place for several years and has been refined over time through communications and operational cooperation. The City has usually compensated Tulare ID for surplus Friant Division CVP supplies that are delivered through Packwood Creek in times when there is not imminent rainfall events in the Visalia area.

<u>Exchange Agreement</u>

The City of Visalia undertook a water marketing opportunity with Tulare ID a few years ago in an effort to develop a surface water supply that could be recharged on the east side of the City where it would benefit the groundwater wells that support the City's residents. This opportunity involved the City delivering a very consistent and continuous tertiary treated wastewater supply to Tulare ID and receiving a wet year

surface water supply that comes from either the Kaweah River or the Friant Division CVP. After the beginnings of the water exchange were conceptually negotiated the City began to focus attention on where this water would be recharged. It became apparent that the City needed to develop additional recharge facilities in order to take advantage of the exchanged supplies and investigations were undertaken to determine the most feasible paths to pursue. Through those investigations it was determined that the Project was the most technically feasible and the most cost effective groundwater recharge project concept that was developed. Through the exchange program the City can receive surface water supplies that will be used for groundwater recharge in areas that will benefit the groundwater wells that deliver water to the residents of Visalia and Tulare ID receives a reliable source of irrigation water (**Appendix A of Attachment 3**).

It should be mentioned that the City of Visalia and Tulare ID have just formalized an exchange agreement that will deliver surface water to the Project facilities for much longer periods during times when flows would not be continuing on to Tulare ID. The water is developed by an exchange for tertiary treated wastewater from the City's upgraded WWTP that will be constructed over the next two to three years. The exchanged amount that will be available to the City will be on the order of 5,000 AF/month and during these times the Project facilities should be able to recharge approximately 1/5 of the total amount (or 1,000 AF/month). However because the WWTP has not yet been constructed the potential benefits from the exchange have not been included in the Project benefit tables.

HEC-RAS Modeling of Packwood Creek

The City of Visalia studied the elevations and hydraulics of Packwood Creek channel in 2009. The study included a survey of regular cross-sections to supplement available lidar information. The topographic information was compiled into a HEC-RAS model to estimate the anticipated water surface developed when the channel ran at varying flows. The study determined that the current capacity through the City was approximately 200 CFS, but that with some channel improvements (raising the banks in a few specific areas) the creek capacity could be improved to 300 CFS (**Appendix B of Attachment 3**).

This study also investigated the concept of segmenting portions of the creek so that water surfaces could be maximized and the creek's groundwater recharge potential could be increased. Plan and profiles were developed along the creek and pool

volumes were estimated for selected impoundment structure locations. Also adjacent potential recharge basins were investigated and mapped along the creek.

2012 WEEG Grant Application

This last spring Kaweah Delta WCD applied for a federal grant from the Bureau of Reclamation WaterSMART program called a Water, Energy and Efficiency Grant (WEEG). Kaweah Detla WCD applied for the WEEG grant on behalf of the City of Visalia and Tulare ID who are also Project partners (**Appendix C of Attachment 3**). The Project is receiving approximately $800,000 through this federal grant. The grant application described the project, estimated the Project's water conservation benefits and estimated Project development costs. Kaweah Delta WCD signed a contract for funding with the Bureau of Reclamation in October 2012.

Seepage Tests along Packwood Creek

The Project partners conducted a seepage test in both the summer and spring of 2011. A pre-project test conducted in February showed that without impoundment structures the Packwood Creek channel lost an average of 14 AF/day to seepage at flows around 15-20 CFS through the channel. A pilot test conducted in September showed that with temporary earthen impoundment structures the Packwood Creek channel lost an average of 34 AF/day to seepage at flows around 20-30 CFS through the channel. The Project partners concluded from the test that the increase in recharge potential from the project was at least 20 AF/day.

Basis of Design and Operations

A document was developed outlining the basic design and operational understanding for the Project called the basis of design (**Appendix D of Attachment 3**). This document was developed through several meetings by the Project partners and was reviewed and approved by each Project partner. The locations for all project structures was considered in this document, the maximum design flow for each structure, the conditions when these structures would be operated, the measure taken to address trash / public access / power / SCADA / etc. were evaluated and decided through this document.

Operational evaluation of increased wetted perimeter and recharge capacity

The digital terrain model from previous HEC-RAS modeling was used to determine the wetted perimeter in sections of the channel upstream of new and modified structures at

varying water depths. This information was used in conjunction with calculated normal flow depth at various flows to determine how impounded water behind structures would pond and increase recharge capacities. Some of this analysis will be discussed further in the technical justification of benefits.

2012 IRWM Project Submittal to KRB IRWM Group

A project submittal was prepared for evaluation in December 2012 for the Kaweah River Basin IRWM Group to review and score. This application was determined to be one of the highest ranking projects submitted for consideration.

9.2.2 Geotechnical

A geotechnical investigation was made into the soil characteristics for structure foundations as well as seepage rates to aid with the needed length of seepage paths.

9.2.3 CEQA\NEPA

CEQA and NEPA documentation for the Project are currently under development. Kaweah Delta WCD is taking the lead in developing information for both of these efforts, but the Bureau of Reclamation will be the lead agency for NEPA.

9.2.4 Permitting

The development of required permits for the Project is currently underway. Kaweah Delta WCD is taking the lead with their consultants in developing these permits. A CA Department of Fish and Wildlife Streambed Alteration (1602) permit and an Army Corps of Engineers Clean Water Act (404- Nationwide) permit are being developed for the Project.

9.2.5 Survey

Topographic surveying is currently underway for the Project. Kaweah Delta WCD and its consultants are taking the lead on this effort. The Project survey has been completed prior to the submittal of this funding proposal.

9.2.6 Design / Plans / Specs / Estimates

After the Project was awarded partial federal funding, the Project participants continued to develop the Project design and considered multiple structure locations. The outcome of the effort was a more refined understanding of the issues with some of the sites and

a consensus on where project facilities will be located, where measurement will occur and how the facilities will be operated. This consensus of Project partners lead to the development of a Basis of Design for the Project (**Appendix D of Attachment 3**).

Project design is at approximately 75% and construction plans, project specifications, bid documents, and an engineer's estimate for the Project are under development. It is anticipated that these documents will be finalized in the next few months and public solicitation of a contractor will begin in summer 2013.

9.2.7 Project Maps

Provide a site map showing the project(s) geographical location and the surrounding work boundaries.3

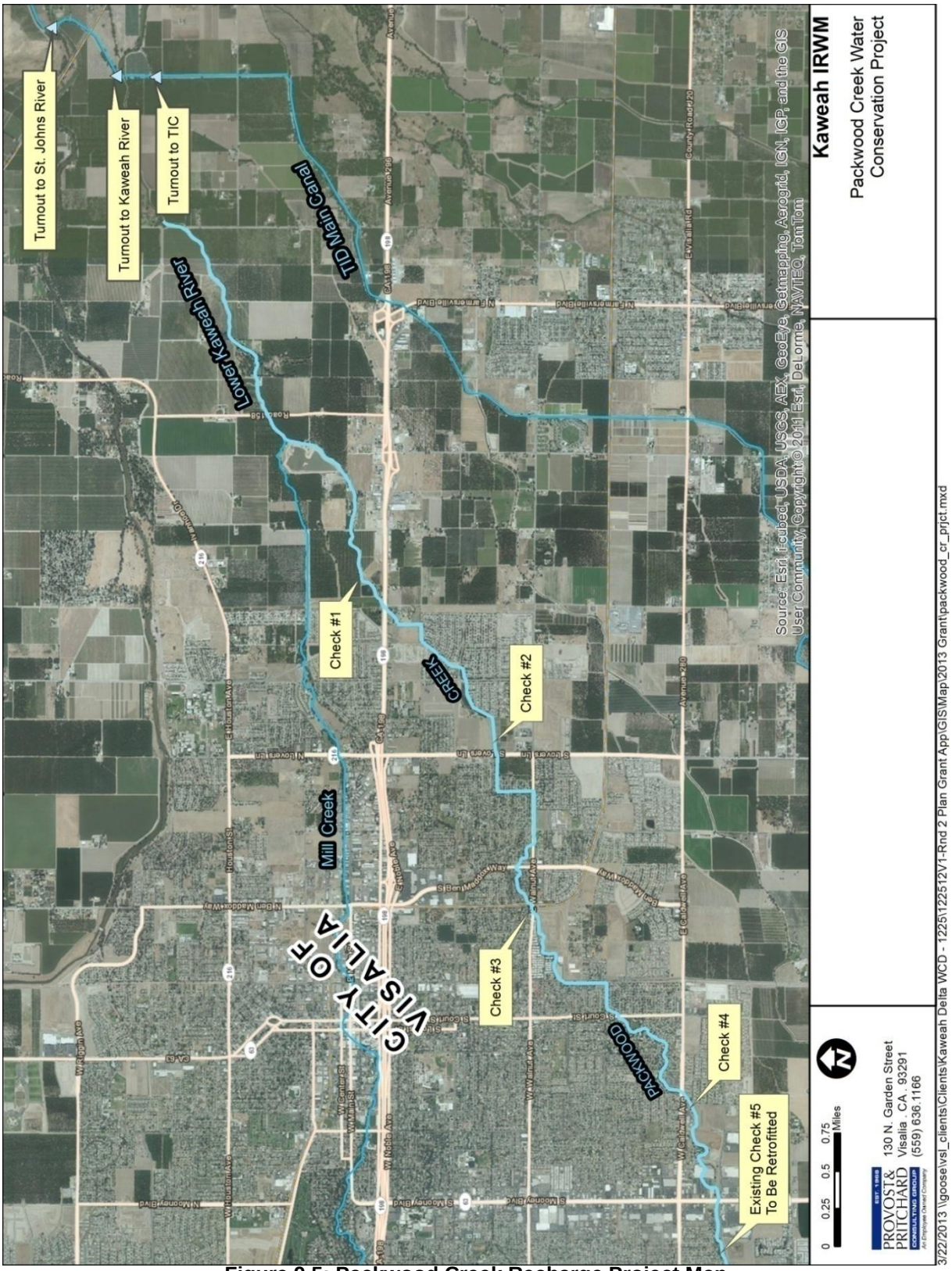


Figure 9.5: Packwood Creek Recharge Project Map

9.2.8 Project Timing and Phasing

If the proposed project(s) is part of a multi-phased project complex, provide a description that demonstrates that the proposal can operate on a standalone basis, i.e., can be fully functional without implementation of the subsequent projects.

The submitted Project is a new project that will be constructed on lands that Project participants already control under prescriptive easement. Progress on the Packwood Creek Recharge Project does not depend on any other part of the Project being completed first. However, it should be recognized that the automated weir structure portion of the Project will potentially be under construction as early as July 2013, prior to the IRWM Round 2 Implementation Grant award scheduled for October 1, 2013. It is hoped that preliminary awards will provide sufficient information for the City of Visalia to determine how to proceed by their July 2013 start date. Prior to construction, federal and state environmental processing and construction documents need to be completed as well as a public process to select a qualified Contractor to construct the Project.

Also the Project is connected to a larger partnership between the City of Visalia and Tulare ID. This partnership facilitates a water exchange program for tertiary treated wastewater for other supplies of surplus surface water that can be delivered to the eastern side of the City of Visalia for groundwater recharge. The structures in Packwood Creek develop an increased recharge capability for the City of Visalia and the three new turnouts from the Tulare ID Main Intake Canal develop facilities that minimize losses in areas that are not beneficial to the City's groundwater resources. The development of these facilities will allow the existing partnership and exchange agreement to be used to its fullest extent. However, this project stands alone and the benefits it generates are not dependent on any other phase or subsequent project being accomplished in order to be realized.

9.3 Packwood Creek Recharge Project Tasks

As has been previously stated, the Packwood Creek Recharge Project (Project) is a City of Visalia Project with Kaweah Delta WCD and Tulare ID. The Project is located within and adjacent to the City of Visalia along Packwood Creek and also in Tulare ID's Main Intake Canal where it crosses the Kaweah and St. Johns River.

The proposed Project is located on Packwood Creek, a distributary of the Lower Kaweah River. The Packwood Creek Recharge Project is an effort to increase the recharge potential in Packwood Creek by developing 5 structures along the 4.5 mile

section of the creek that runs through the southeastern part of the City of Visalia. The effort attempts to maximize the effectiveness of an existing arrangement where Tulare ID will deliver surplus water for groundwater recharge. The 5 developed structures are anticipated to increase the City's annual groundwater recharge by 400 AF/year and will help to offset a portion of the existing 25,000 AF of local groundwater overdraft. Four new structures will be constructed and one existing structure will be modified. Each of these structures will be outfitted with an automated gate to regulate upstream water surfaces while maintaining downstream flows. SCADA at each location will relay project operational information to Kaweah Delta WCD, Tulare ID and the City of Visalia to better inform decision makers. The automated gate will increase water surfaces in Packwood Creek when controlled flows are available and there is no likelihood of rainfall events. The total project budget is approximately $1.88 Million.

9.3.1 Budget Category (a): Direct Project Administration Costs

9.3.1.1Task 1 - Administration

The project is being undertaken by the City of Visalia, Kaweah Delta WCD, and Tulare ID, but as Kaweah Delta WCD was successful in applying for federal grant funds they have committed to undertake the administrative effort with the support of the other Project partners. Kaweah Delta WCD will administer the Project and work to manage and account for all aspects of the Project. Kaweah Delta WCD staff and consultants will undertake contracting for construction services and construction review for the Project; will establish schedules and evaluate the quality of the Project work accomplished. This effort will be regularly evaluated at monthly Project meetings between the Project Manager, Kaweah Delta WCD staff working on the Project, consultants working for Kaweah Delta WCD, and selected contractors. At these meetings progress during the previous month will be reviewed, issues in implementing the project will be discussed, and action items will be established for the next month.

Deliverables to DWR – Kaweah Delta WCD will deliver monthly invoices of work accomplished to DWR. Within these reports pay requests from contractors, certified weekly payroll records, and verifications of prevailing wage compliance will be included.

9.3.1.2Task 2 - Labor Compliance Program

The City of Visalia and the other IRWM Group participants are developing a labor compliance program for projects funded through the IRWM Implementation Grants. As part of the work in this category the City of Visalia will include a labor compliance

program pursuant to California Labor Code §1771.5(b) in the Project specifications for Project contractors. In compliance with California Labor Code §1771.8, this labor compliance program will be in place at the time of contract award for this submitted Project.

As part of their standard practices, the City of Visalia requires that contractors and subcontractors to contractors submit weekly certified payroll. This information is then reviewed and compared to State prevailing wage rates to verify that the appropriate wages and benefits have been paid to employees working on City of Visalia projects.

Another part of the City of Visalia's standard practice is to verify that all contractors employed by the City of Visalia for construction projects are appropriately licensed by the State of California and are in good standing.

Further, before commencing work, the contractor shall obtain at his own expense, and agrees to keep in effect during the life of this Contract, as a minimum requirement, the following insurance in a company or companies acceptable to the City. All insurance, excepting Workers' Compensation and Occupational Disease Insurance, shall include as additional insured: the Owner, the County, the State, the Federal Government, Provost & Pritchard Engineering Group, Keller/Wegley Consulting Engineers and their officers, employees, consultants and agents.

Additional requirements include:

1. Worker's Compensation and Occupational Disease Insurance meeting the statutory requirements of the State in which the work is to be performed;
2. Employer's Liability Insurance in an amount of at least $5,000,000;
3. Comprehensive Liability Insurance with limits of:
   Bodily Injury, Property Damage and Personal Injury - $5,000,000 each occurrence, $5,000,000 aggregate.

   This insurance shall be on an occurrence basis and shall protect the Contractor against liability arising from: his operations, operations by sub-contractors, elevators, products, completed operations and contractual liability assumed under the indemnity provisions above insurance.
4. Automobile Liability on an occurrence basis covering all owned, non-owned, and hired automobiles for limits of liability of:

   Bodily Injury and Property Damage - $5,000,000 each occurrence; and

5. Builder's Risk Insurance is required.

These limits shall be considered sufficient for the contractor associated with this project, provided however, that the limits of such insurance shall not limit the extent of such assumed responsibility and liability.

Deliverables to DWR – The City of Visalia will deliver and submit the Project's Labor Compliance Program to DWR. This program will be adhered to through the project in all dealings with the retained contractors and their personnel. Also, all contracts for contracted services will be supplied to DWR for verification that they are consistent with the California Labor Code. Finally, researched information about contractor licensing, insurance and bonds will also be provided to DWR for their information.

9.3.1.3Task 3 - Reporting

Kaweah Delta WCD staff will undertake the reporting effort for the Packwood Creek Recharge Project and will work to provide required materials to DWR consistent with what is outlined in this grant application and with the contract that the City of Visalia will sign as proposing agency for this IRWM grant with the State of California. Reporting, accounting, and administration will regularly be evaluated at monthly Project meetings between the Kaweah Delta WCD Project Manager, Kaweah Delta WCD staff working on the Project, consultants working for Kaweah Delta WCD, and selected contractors. At these meetings progress, progress reports will be generated by the group that include site pictures of recent progress being made, and applicable construction logs will be included if available.

The City of Visalia will also generate reporting of Project progress to the IRWM group and to the City Council on a monthly basis.

Deliverables to DWR – Kaweah Delta WCD will deliver quarterly progress reports as well as annual and final reports to DWR for this Project. Within these reports site pictures of progress will be included, applicable construction inspection logs, descriptions of construction progress (like percent of completion per bid item) and Project team meeting agendas and minutes.

9.3.2 Budget Category (b): Land Purchase/Easements

The Project will occur within the existing lands controlled by Project participants. There may be a few areas where adjacent landowners will be compensated for construction impacts, but there are no purchases of land currently envisioned in this Project.

Deliverables to DWR – Project construction plans showing property lines and the areas available to contractors for the construction of the Project.

9.3.3 Budget Category (c): Planning/Design/Engineering/Environmental Documentation

9.3.3.1Task 4 – Assessment and Evaluation

The Project is being undertaken by the City of Visalia, Kaweah Delta WCD, and Tulare ID, but as Kaweah Delta WCD was successful in applying for federal grant funds they have committed to move the Project through assessment and evaluation with the support of the other Project partners. A portion of Project planning and engineering has been accomplished to date. Efforts to secure Project funding have been the Project's focus for the last few years and so some general planning and design has been accomplished. The current Project design is what would be considered a 75% design and requires some additional development and review before the Project could be constructed by a contractor.

Task 4.1 – Preliminary Biological Assessment: District staff has contracted with local certified biological consultant to perform a preliminary biological assessment of the conceptual project at the proposed project site. Areas of sensitive habitat will be identified in an effort to protect them through Project design.

Subtask 4.2 – Project Geotechnical Investigation: A geotechnical investigation has been pursued to investigate the foundation and embankment conditions in the areas of the Project structures. The investigation will avoid the sensitive habitats identified in the Preliminary Biological Assessment. Anticipated soil properties to be investigated at each location would include percent moisture, dry density, direct shear, particle size analysis, permeability, expansion index, Atterberg limits, specific gravity, consolidation, compaction curves, shear strength diagrams, and calculated CalTrans R values and a slope stability analysis.

Subtask 4.3 – Existing Utility Investigation: Once the Project site was narrowed a utilitiy request was developed and distributed to all the local utility companies that were thought to have a reasonable possibility to having utilities in the area. The request asked for information on the utilities that were in the Project area or written confirmation that no utilities existing in the Project area. This effort many times takes more than a month to accomplish.

Deliverables to DWR – The City will deliver the Preliminary Biological Assessment, Utility Responses and the Geotechnical Study conducted in support of the final project design. Four printed copies of each report will be provided to DWR as well as one digital copy containing all printed material in the report. These reports will be provided to DWR within 30 days of being finalized and accepted by Project partners.

9.3.3.2Task 5 – Final Design

Final Design has begun, but currently not been completed. The current project design is a 75% design and requires additional investigation and development before the project could be constructed. The Project partners have contracted with a local Civil Engineering consultant to generate the final design for the new water control structures in Packwood Creek and the associated turnouts from the Main Intake Canal. The final design will include:

- Construction drawings developed and executed by a registered Civil Engineer in the State of California,
- Project specifications development and executed by a registered Civil Engineer in the State of California,
- Competitive bid solicitation documents, and
- Contract documents based on the District legal requirements.

Task 5.1 – Construction Drawings: Construction drawings will be developed for the new automated water control gates, the new concrete structures that support the automated gates and the new concrete turnouts.

The proposed facility would be designed to be safely operated within the range of flows agreed to by the Project participants and would take into account any sensitive habitat locations identified in the project's Preliminary Biological Assessment. Structural calculations would be accomplished under the direction of a registered Civil Engineer in the State of California in an effort to construct concrete facilities that will remain viable for 50 years or more. Construction drawings will contain a grading plan for structure locations as well as information on the planned SCADA system.

Construction drawings for concrete structures will reflect the designed safety elements that will allow for safe and reliable use of the facility for water management personnel. The construction drawings will be consistent with OSHA requirements for this type of facility and will incorporate standard safety features for Kaweah Delta WCD and Tulare ID ditchtenders for consistency with other local district facilities.

Task 5.2 – Project Specifications: The following project specification sections are envisioned as necessary to be included in the contract documents:

- Section 02050 – Demolition;
- Section 02115 – Clearing and Grubbing;
- Section 02200 – Earthwork;
- Section 02232 – Aggregate Base;
- Section 02233 – Dewatering;
- Section 02272 – Rip Rap;
- Section 02503 – Storm Water Pollution Prevention Plan;
- Section 02504 – Dust Control;
- Section 02610 – Pipe and Fittings;
- Section 02640 – Valves and Appurtenances;
- Section 03300 – Cast-in-Place Concrete;
- Section 03600 – Grout;
- Section 03150 – Concrete Accessories;
- Section 05500 – Fabricated Metal;
- Section 05550 – Anchor Bolts and Expansion Anchors; and
- Section 11287 – Water Control Gates.

Each specification section will be developed for the work included in the project and will include a description of the work covered in each section, will reference applicable product and industry standards applicable to the work, will specify who is responsible for applicable safety plans; will outline the process of submitting product information to the project Engineer for acceptance, will outline quality assurance measures for the applicable work, will specify the acceptable procedures for installation of the specified work, will address plausible construction issues encountered during construction, and will define acceptable tolerances for the accomplished work.

Task 5.3 – Solicitation and Competitive Bid Documents: Documents will be prepared to formalize the process for solicitation of bids and competitive bidding on the project. The following solicitation and competitive bid document sections are envisioned as necessary to be included in the contract documents:

- Section 00100 – Instructions to Bidders
- Section 00101 – Requests for Bids

- Section 00305 – Bidder's Checklist
- Section 00310 – Bidder's Proposal
- Section 00313 – List of Subcontractors
- Section 00314 – Material Suppliers Information
- Section 00315 – Preliminary Construction Schedule
- Section 00316 – Non-Collusion Affidavit
- Section 00317 – Public Contract Code Section 10162 Questionnaire on Disqualification
- Section 00318 – Public Contract Code Section 10232 Statement on Contempt
- Section 00324 – Worker's Compensation Certification
- Section 00329 – Labor and Other Code Requirements Certificate
- Section 00340 – Qualification Statement
- Section 00501 – Contract Agreement
- Section 00502 – Indemnity Agreement
- Section 00503 – Guaranty
- Section 00600 – Bond Requirements
- Section 00601 – Bid Bond
- Section 00603 – Performance Bond
- Section 00604 – Payment Bond
- Section 00675 – Notice of Award
- Section 00680 – Notice to Proceed
- Section 00701 – Dispute Resolution, Suspension and Termination
- Section 00900 – Cultural Resources
- Section 00910 – Threatened and Endangered Species Compliance

Each solicitation and competitive bid document section will be developed for the work included in the Project and will outline the process that contractors must follow to submit a successful qualified bid for the project and what will be required if they are successfully selected. The solicitation and competitive bid documents address California labor code compliance, indemnity requirements, bonding throughout bidding and the Project, how Kaweah Delta WCD will resolve disputes throughout the Project, and commitments that the contractor will have to honor because of Kaweah Delta WCD findings regarding cultural resources and/or endangered species during CEQA proceedings.

Task 5.4 – Contract Documents: The Contract Documents for the project define the relationships between the Owner of the project and the contractor retained to develop it. The following contract document sections are envisioned as necessary to be included in the contract documents:

- Section 01005 – Specifications

- Section 01011 – Description of the Work
- Section 01013 – Beginning of Work, Time of Completion, Liquidated Damages
- Section 01017 – Materials
- Section 01018 – Contractor's Responsibilities
- Section 01019 – Construction Stakes, Lines, and Grades
- Section 01022 – Changes to the Work
- Section 01025 – Measurement and Payment
- Section 01026 – Waiver and Release Submittals
- Section 01040 – Coordination of Work
- Section 01052 – Engineer's Status during Construction
- Section 01090 – Definitions and Abbreviations
- Section 01200 – Project Meetings
- Section 01300 – Submittal Procedures
- Section 01400 – Quality Control
- Section 01500 – Temporary Facilities
- Section 01502 – Protection of Underground Facilities and Survey Monuments
- Section 01630 – Product Substitutions
- Section 01700 – Contract Closeout

Each contract document section will be developed for the specifics of this project and will outline the administrative arrangements between the District and the contractor. The contract documents address the priority of the parts included in the contract documents if there are conflicts, what will be the penalties if work is not completed as per the agreed to schedule, measurement and payment arrangements for work performed, submittal procedures, product substitutions and necessary steps to close out the contract.

Deliverables to DWR – Kaweah Delta WCD will deliver project construction drawings signed by a registered Civil Engineer in the State of California, project specifications signed by a registered Civil Engineer in the State of California; competitive bid solicitation documents, and project contract documents based on District Standards to DWR (four printed copies and one electronic copy). These documents will be provided to DWR within 30 days of being finalized and accepted by Kaweah Delta WCD.

9.3.3.3Task 6 – Environmental Documentation

Environmental documentation for the project is currently being developed. The Project is being undertaken by the City of Visalia, Kaweah Delta WCD, and Tulare ID, but as Kaweah Delta WCD was successful in applying for federal grant funds they have

committed to moving forward with the environmental documentation with the support of the other Project partners. The Project participants have controlled and managed the Project sites for many years, so these parties are well acquainted with the issues associated with the property. Given this familiarity, there is a general view by Project participants that there will be no significant environmental issues to contend with through environmental documentation, and that these issues will be similar to the issues for most other District projects rather that something out of the ordinary.

Task 6.1 – Environmental Checklist and Biological Assessment: Kaweah Delta WCD has contracted with a local consultant to assuming the preliminary biological assessment for the Project and develop the environmental assessment for the final design of the Project. From this assessment the consultant will fill out an environmental checklist, providing reasons for the categories chosen. Once completed, the documentation will be reviewed by District staff and a determination will be made as to the appropriate environmental document that will be recommended to be pursued for the Project. Currently it is assumed that a Mitigated Negative Declaration and a Finding of No Significant Impact will be the vehicles pursued for this Project.

Task 6.2 – Development of CEQA Documentation: The District has contracted with a local consultant to aid the District in developing what is currently assumed to be a Mitigated Negative Declaration for the project. The project will be evaluated in detail on how it impacts local Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Hydrology and Water Quality, Noise, Population and Housing, Transportation and Traffic, and Greenhouse Gases. This information and analysis will be summarized in an Initial Study. Then a draft CEQA document will be developed and reviewed by Kaweah Delta WCD, the City of Visalia, and Tulare ID staff. Once the staff of the Project Partners is satisfied with this document, it will be reviewed by DWR. Once DWR is satisfied with this draft document it will be considered the final draft. Copies of the final draft will be prepared for circulation to responsible agencies and the public through the state clearinghouse and other District specific locations for public review. A list of responsible agencies will be developed by the District that will be noticed as to the availability of environmental documentation for the project. A Notice of Intent will be developed for the project and will be posted as per District CEQA guidelines and distributed with copies of the final draft for review and comment. CEQA documentation will be distributed to the state clearinghouse with the standard number of copies for distribution, specific copies will be distributed to local responsible agencies;

copies will be distributed to the County Clerk's office and a public library as well as one to be held at the District office for public review.

Task 6.3 – Final CEQA Documentation: All comments on the draft final CEQA documentation will be collected and reviewed. Responses to the comments received will be drafted by the District's consultant and reviewed by District staff. These responses to comments, along with the draft final environmental documentation will be reviewed and considered by the Kaweah Delta WCD Board of Directors and, given that they agree with the responses, will pass a resolution accepting the environmental documentation. The resolution will authorize the District Manager to file a Notice of Determination for the project with the State Clearinghouse and the County Clerk and to pay the applicable County fees.

Task 6.4 – Development of NEPA Documentation: The District has contracted with a local consultant to work with staff from the Bureau of Reclamation to address NEPA issues evaluated through the Bureau's standard process. The District's consultant will develop a draft report on these standard areas of consideration using the Bureau's standard format and will present the draft report to Kaweah Delta WCD, the City of Visalia, Tulare ID and the Bureau of Reclamation for review. Once Project participants and the Bureau are satisfied with this draft document it will be considered the final draft. Copies of the final draft will be prepared for circulation to responsible federal agencies and the public. A list of responsible agencies will be developed by the Bureau that will be noticed as to the availability of environmental documentation for the project.

Task 6.5 – Final NEPA Documentation: All comments on the draft final NEPA documentation will be collected and reviewed. Responses to the comments received will be drafted by the District's consultant, by Project partner staff and by Bureau staff. These responses to comments, along with the draft final environmental documentation will be reviewed and considered by the Bureau of Reclamation and Kaweah Delta WCD Board of Directors.

Deliverables to DWR – Kaweah Delta WCD will work with DWR to deliver draft CEQA documentation for DWR staff review and comment prior to the District's distribution of CEQA documents to other responsible agencies. Approved and adopted CEQA documentation, including the environmental checklist and biological assessment, Initial Study, the Notice of Intent adopt the CEQA documentation, proof of transmittal to the state clearinghouse, all received comment letters from responsible agencies and members of the public, responses to issues brought up in the public review process, the

resolution accepting the finalized documentation and instructing the District manager to file the Notice of Determination with the county clerk and the state clearinghouse, will be provided to DWR in printed and electronic versions within 30 days of being finalized and accepted by Kaweah Delta WCD.

Kaweah Delta WCD will also work with the Bureau of Reclamation to deliver draft NEPA documentation for DWR staff review and comment prior to the District's distribution of NEPA documents to other federal responsible agencies. Approved and adopted NEPA documentation will be provided to DWR in printed and electronic versions within 30 days of being finalized and accepted by Kaweah Delta WCD.

9.3.3.4Task 7 – Permitting

The Project's permitting effort is currently underway. The project is being undertaken by the City of Visalia, Kaweah Delta WCD, and Tulare ID, but as Kaweah Delta WCD was successful in applying for federal grant funds they have committed to moving the permitting of the Project forward with the support of the other Project partners.. It is understood that permits for the construction of the facility will be necessary from the California Department of Fish and Wildlife, the Army Corps of Engineers, the Regional Water Quality Control Board, and the Air Resources Board.

Task 7.1 – California Dept of Fish and Wildlife Streambed Alteration permit (1602): As the project will be the construction of a facility in what has been determined to be a streambed under the jurisdiction of the California Dept of Fish and Wildlife (Packwood Creek), a Streambed Alteration Permit will be required for the construction of the Project. Kaweah Delta WCD will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during development of the environmental documentation. Then Kaweah Delta WCD staff and consultants will work with staff from the California Dept of Fish and Wildlife to work out any potential issues in the permitting so that a successful permit can be issued for the construction. It is understood that the California Dept of Fish and Wildlife will not issue the permit until CEQA documentation is formally adopted by Kaweah Delta WCD, as the issuance of the permit is a formal action by the California Dept of Fish and Wildlife that requires CEQA compliance. Requirements from this permit will be incorporated into the construction documents for the project.

Task 7.2 – Army Corps of Engineers Permit for Section 404 of the Clean Water Act: As the Project construction of a facility will involve earthwork within a channel that has been

determined to be under the jurisdiction of the Army Corps of Engineers (Packwood Creek), a Section 404 Permit will be required for the construction of the Project. Kaweah Delta WCD will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during development of the environmental documentation. Then Kaweah Delta WCD staff and consultants will work with staff from the Army Corps of Engineers to work out any potential issues in the permitting so that a successful permit can be issued for the construction by the Army Corps of Engineers. Kaweah Delta WCD will apply for a nationwide permit, which is a more readily available type of permit from the Army Corps of Engineers which does not require NEPA compliance prior to the Army Corps of Engineers issuing the permit. Requirements of this permit will be incorporated into the construction documents for the Project.

Deliverables to DWR – Kaweah Delta WCD will deliver project permits from the California Department of Fish and Wildlife, the Army Corps of Engineers, the Regional Water Quality Control Board, the Air Resources Board to DWR. These documents will be provided to DWR within 30 days of being finalized and received by Kaweah Delta WCD.

9.3.4 Budget Category (d): Construction/Implementation

9.3.4.1Task 8 – Construction Contracting and Deliverables

There has been no construction contracting work accomplished for the project to date. The project design is in the development stages and is only developed to a 75% design. The project is being undertaken by the City of Visalia, Kaweah Delta WCD, and Tulare ID, but as Kaweah Delta WCD was successful in applying for federal grant funds they have committed to contracting for the construction of the Project with the support of the other Project partners. The tasks listed below will be accomplished as part of the Project after it was selected for Implementation grant funding.

Task 8.1 – Publish Notice to Bidders: A notice to bidders will be published in a local newspaper publication on the same day of the week for three successive weeks. This notice will provide the official title for the project and briefly describe the work sought from bidding contractors. It will also present the location where bids shall be submitted as well as the date and time when bids will be publicly opened and read. The notice will describe the required conditions of the bid packet for acceptance and will describe the required mandatory pre-bid meeting's date, time and place. The notice shall describe

where bidding condiments can be acquired and how much they will cost. Further the notice shall describe to bidders that prevailing wages will be required for the job, that a bidder's bond in the amount of 10% of the base bid is required and the required contractor's license classification for the Project.

Task 8.2 – Pre-Bid Meeting and Addendum No. 1: As part of the public bid solicitation process, the District will conduct a mandatory pre-bid meeting with interested contractors to go over information in the construction documents and answer questions submitted by contracts. An attendance list will be generated for the meeting and detailed minutes will be taken of all discussions during the meeting. The attendance list from this meeting, the questions asked at this meeting and the responses to these questions will be summarized in one document that will become Addendum Number One to the Contract Documents and will be distributed to all plan holders and contractors that were present at the pre-bid meeting.

Task 8.3 – Bid Opening and Bid Evaluation: An attendance sheet will be kept for the bid opening. The project engineer, his representative or the District engineer will keep the official clock as to when the time for acceptable bid submittals has passed. After that time has been declared, all submitted bids will be collected, will be opened and the submitting contractor and total bid amount and will be read aloud to those present. Then this meeting will be closed and the Project engineer, his representative or the District engineer will begin evaluating the submitted bids. The contractor's license, the bond amounts, the bond rating of the issuing company, the insurance and the contractor's history of claims, the math involved in the bid proposal, the preliminary project schedule, the subconsultants listed, similar project experience, listed references, as well as the certifications and required forms will all be checked against what was required in the contract documents. A summary of this evaluation of bids will be generated for the District staff and the Board of Directors to consider.

Task 8.4 – Bid Award: After the selection of the successful bidder for the project by the District's Board of Directors, Project engineer, his representative or the District engineer will prepare the Notice of Award for submittal to and signature from the selected contractor. The Project engineer, his representative or the District engineer will work to issue and have signed all remaining documents within the contract and review, receive and verify all project bonding and comment and eventually approve all product submittals and submitted plans. Prior to the contractor moving any equipment to the site, it will be re-visited by the biological consultant to verify that conditions have not changed since it was originally evaluated. Also a flier will be produced for the contractor

regarding any cultural resource or sensitive species issues that need to be kept in mind during construction and regularly checked. After this is accomplished, the project engineer, his representative or the District engineer will issue the Notice to Proceed. This notice will officially begin the contractor's allowable timeframe for the construction of the facility.

Deliverables to DWR – Kaweah Delta WCD will deliver the project's advertisement for bids from a local publication, the agenda and minutes from the pre-bid contractors meeting, information regarding the evaluation of bids submitted to the District, and information and documentation on the award of all construction contracts to DWR. These documents will be provided to DWR within 30 days of being finalized and received by Kaweah Delta WCD.

9.3.4.2Task 9 – Construction

There has been no construction work accomplished for the project to date. The project design is currently in progress and is developed to a 75% design. The tasks listed below would be accomplished as part of the Project after it is selected for Implementation grant funding.

9.3.4.2.1 Subtask 9.1 – Mobilization and Site Preparation

Subtask 9.1.1 – Mobilization: This work task will include the mobilization for all demolition, construction and site work authorized under the construction contract and all necessary equipment and materials to the project site. Once mobilization has begun, the contractor will assume responsibility for Project site security. This work item also includes obtaining the required insurance and securing all necessary licenses, permits, preparations of plans, and paying any potential permit fees for the entire project. This work task will also include contacting Underground Services Alert for a review and marking of the Project site for existing utilities.

Subtask 9.1.2 – Worker Protection: This work item includes provisions for protection of workers from any hazards that may occur during execution of the work at all times, including but not limited to weekends, holidays, and non-working hours. This work item will include providing, as necessary, all shoring, sheeting and bracing for trench and excavation stabilization and safety.

Subtask 9.1.3 – Miscellaneous Facilities and Operations: This work item includes provisions for necessary de-watering, maintaining drainage, traffic control, construction

and removal of temporary security fencing, construction of staging areas, protection of existing facilities, general Project clean up, and all costs for miscellaneous work shown and described in the Contract documents that is not included in other work items. Also this work item includes provision of all necessary facilities for the contractors employees to work on-site in compliance with State labor Code, such as portable bathroom facilities.

Under this work item, temporary earthen berms will be constructed around the portion of the project site that is located in the Packwood Creek channel to prevent any incidental drainage in the Creek from running into the work area.

9.3.4.2.2 Subtask 9.2 – Project Construction

Task 9.2.1 – Construction Staking: Construction stakes will be provided by the District's consultant to the contractor upon request near the edge of the Project site right-of-way, referencing a fixed design feature (i.e. centerline, inside toe of slope, inside hinge point, but not slope stakes), at 100-foot intervals and at all beginning and ends of curves, on each side of the structure and wings. Construction staking will also reference critical underground pipes and box culverts and headwall and inlet/outlet structure locations. Also, cut sheets will be provided to contractors and/or the District upon completion of each staking request, displaying stake locations and details.

Task 9.2.2 – Miscellaneous Engineering Services: Questions regarding specifications, design or consulting are common during construction activities. It is envisioned that District staff will need to have the Project engineer or his representative available to answer any questions as they arise. The Project engineer understands that time is a critical element in order to complete all construction activities for the Project and that communication may be made available during all construction activities.

Task 9.2.3 – Water Control Structure Construction: This work task will include the construction of the four concrete water control structures that will be the main pieces of this Project. The area for the four new concrete structures will first be cleared and grubbed of any vegetation or unsuitable material. Then once the Project site is suitable to begin work, the structural footings for the concrete structure's walls will be excavated. The subgrade or bottom of these areas will be over-excavated and compacted consistent with the required relative compaction called for in the Project construction plans. After this is accomplished, forms for the concrete footings will be built as per the dimensions and elevations on the construction plans. Then horizontal and vertical rebar

will be located within the footings, and tied in place so that it can be reviewed by the engineer or the engineer's representative prior to pouring concrete. After the rebar is inspected and confirmed to conform to the construction plans, concrete will be poured into the footing forms, vibrated to avoid air pockets and finished as per the project specifications. After the compression test results are received and confirmed as acceptable for the concrete footings and at least seven days have passed since the concrete pour, the forms around the footings will be stripped and any minor patch work necessary to finish the edges of the footings will be undertaken.

This same process will then begin again for the concrete floor of the structure and then the vertical walls of the structure. The structures vertical walls will for a three sided box one each side of the Creek, with the open side of the box being perpendicular to Creek flow but farthest away from the channel. These vertical walls will be backfilled with native material and will retain the approach of the sloped channel to the structure. Also the vertical walls will develop the bounding edge of the automated gate that will control upstream water depth and downstream flows.

For the vertical pier walls that form the weir bays for this structure, fabricated channel sections will be attached to the reinforcing steel in the wall and placed on the outside edge of the wooden forms. These fabricated channels will become the guides for the removable weir boards used in the structure for water management and control.

Across the top of the structure a metal catwalk will be constructed to allow operators to access the facility. It is anticipated that this location will be used by operators to clear small trash from the upstream side of the automated gate and for crossing from one side of the structure to the other. The metal catwalk will be framed by structural steel members with an expanded metal floor to provide excellent drainage and traction during rainy times. OSHA compliant pipe rails will be attached to the frame of the catwalk to provide safety guides for facility operators. It is anticipated that all of these steel components will be corrosion treated (likely galvanized) as per the specifications and instructions on the construction plans.

Also, in order to provide some limit to public access of the structure during times when the Creek is flowing water (for public safety reasons), chain link fencing and lockable access gates will be installed on both sides of the structure (left and right banks) and warning signs will be clearly posted.

Task 9.2.4 – Water Control Gate Installation: This task will include work to furnish and install the automated water control gates designed as part of the new concrete structures. The furthest upstream and downstream structures, water level controlled Langemann gate will be specified in the new concrete structure designs so that the operational criteria determined by Kaweah Delta WCD, Tulare ID and the City of Visalia can be met. It is also thought that the remaining three water control gates involved in the Project will be Lopac gates because water measurement across them is not necessary. The control gates will contain water level sensors that will measure upstream and downstream water level to within a half inch. A programmable internal processor that comes with the gates will allow site operators to adjust the operational parameters of each gate.

Task 9.2.5 – New Concrete Turnout Structures: This task will include work to furnish and install the new concrete turnout structures, trash racks, sluice gates, connective piping and up and downstream channel protection measures at the three diversion locations specified from Tulare ID's Main Intake Canal (St. Johns River, Kaweah River and Tulare Irrigation Company Canal). The turnout areas will be excavated sufficiently so that the connective piping can be placed and backfilled. Concrete structures in the Main Intake Canal will be constructed and fitted with sluice gates and flow meters. At the downstream end of the new turnouts energy dissipaters will be constructed and rip-rap placed to protect the receiving channels from erosion.

Task 9.2.6 – SCADA: Monitoring information at each automated gate site will be transmitted to remote monitoring locations for Project participants to ensure that Project operations are coordinated and timely. Kaweah Delta WCD, the City of Visalia and Tulare ID all have SCADA systems, and information from these new sites will be transmitted from gate locations so that it can be monitored by the Project participants through their existing systems. The contractor will be responsible for the development of this capability and the construction of a housing at each structure location for SCADA or transmission equipment.

Task 9.2.7 – Construction Inspection: The construction inspector will be required to make site visits to the Project site to inspect the construction of facilities as per the intended design at critical times, be present at concrete pours to test concrete slump and verify truck tags, and be available for compaction tests. In general it is envisioned that on average two visits per week would be necessary, and that field reports/inspection logs would be generated for each visit.

Task 9.2.8 – As-Built Drawings: Changes to the original design would be catalogued through construction and documented through an as-built set of plans for the District's records. As-built drawings shall be completed for the concrete control structures, the metal catwalks, the control gates, the concrete turnouts and the SCADA equipment.

9.3.4.2.3 Subtask 9.3 – Performance Testing and Demobilization

Task 9.3.1 – Concrete Test Cylinders: Compression test cylinders will be taken for each load of concrete used in the new structure for 3-day, 7-day, 21-day and 28-day tests. These cylinders will be sampled by the engineer or the engineer's representative and will be delivered to a qualified local testing laboratory for testing to verify that the concrete meets the compressive strength requirements detailed in the project specifications and on the construction plans.

Task 9.3.2 – Compaction Tests and Compaction Curves: This work item includes the work to test in place density of compacted soils for Project facilities as noted on the Plans. Compaction testing will be accomplished on each compacted lift at specified minimum intervals. Compaction tests will be logged and submitted to the Kaweah Delta WCD for review daily.

Task 9.3.3 – Demobilization: This work item includes the work to remove all trash or debris from the Project site, complete all items on punch list from the final inspection; remove all equipment, fencing, project signs and temporary bathroom facilities and to process final payment of project retention and establish start date for the project warranties.

9.3.5 <u>Budget Category (e): Environmental Compliance/Mitigation/Enhancement</u>

9.3.5.1Task 10 – Environmental Compliance/Mitigation/ Enhancement

Based on preliminary results shared by the CEQA and NEPA compliance consultant for the Project, the Project will likely not impact Federal of State protected species or natural communities. However, this task has been developed to mitigate any potential disturbance or impacts to protected species or communities. As previously discussed, the construction of the Project's structures will involve the disturbance of considerable portions of the Project site. Preventative measures will be used during construction to minimize potential impacts to wildlife, including:

- Vehicles should use slow speeds (<15 miles per hour), especially at night, when driving through or around the Project site to minimize potential for striking or disturbing animals. San Joaquin kit fox and other animals are vulnerable to collisions with autos.
- Open pipes and culverts should be inspected before being moved or altered to prevent wildlife from being injured or trapped.
- A pre-construction survey was performed to determine if there was a presence of the San Joaquin Kit Fox or the Swainson Hawk.
- If special status species are encountered during an inspection, they should be left alone to passively exit the area unless otherwise authorized by CDFW or USFWS.
- Any migratory birds and their nests should be not be disturbed as outlined in the Migratory Bird Treaty Act of 1918 (MBTA). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Section 50 of the Code of Federal Regulations(CFR) Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21).
- If building or tree removal must take place during the bird nesting season (February-August) due to construction schedule constraints, pre-disturbance surveys for bird nesting activity should be conducted by a qualified biologist no more than 15 days before tree and building removal. If active nests are located within the construction site, nests should be buffered an appropriate distance as specified by a qualified biologist. Within that buffer no disturbance should occur until after nesting season for the observed species is concluded. Pre-disturbance surveys for bird nesting activity should include the trees on-site, burrows and open buildings (house/garage and shed).

Another mitigation measure requires the District to monitor for cultural resources throughout the construction process. If during the course of the project construction, any archaeological or historical resources are uncovered, discovered or otherwise detected or observed, activities within 50 feet of the find shall be ceased.

This work item includes the cost for implementation of the Dust Control Plan (DCP), and all revisions the Contractor, District, and/or regulating authority deem necessary to comply with all federal, state, and local air pollution laws and regulations; finalizing,

submitting, and implementation of the Stormwater Pollution Prevention Plan (SWPPP), and all revisions the Contractor, District, and/or regulating authority deem necessary to comply with all federal, state, and local water pollution laws and regulations. Also included in this work item is the construction and maintenance of all of the facilities required to comply with the DCP and SWPPP; removal of the required facilities upon project completion; and shall include full compensation for providing all miscellaneous materials, incidentals, labor, tools and equipment and for doing all work involved as detailed in the Plans and Specifications, and complying with the DCP, SWPPP, and their respective subsequent revisions.

9.3.6 Budget Category (f): Construction Administration

9.3.6.1Task 11 – Construction Administration

Prior to construction, Kaweah Delta WCD staff will work with the contractor to verify that the material and equipment used in the construction of the new water control structure is consistent with applicable contract document requirements with a minimal disturbance to City of Visalia residents and that material suppliers are identified and approved. District staff will work with the selected contractor to verify that the construction work is accomplished by the contractor as per the contract, that the contractor bills the District appropriately for the work and that warranty of the work is established by date and honored until the agreed upon expiration date has passed. This work will be coordinated with the representative of the District. If unforeseen circumstances are encountered by the contractor, District staff will expeditiously work to make a determination whether the circumstance is a material change to the work described in the contract. If this is determined, the contractor shall be compensated for this change as per District policy.

9.4 Well 15 Water Quality Project - Completed Work

A description of the work that has been completed or is expected to be completed prior to the grant award date. For example, if CEQA/NEPA and other environmental compliance efforts have been completed discuss the environmental determination made by the lead agency and the documents that were filed.

Completed work to date includes the completion of the design concept and the acceptance of same by CDPH. The completed design concept will allow work to begin on the Plans and Specifications required for Project bidding purposes, with exception of the location of the sampling station sites. While said sites have been generally located,

specific negotiations need to take place with each of the affected landowners to ensure that the existence of sampling stations will not interfere with private property rights and are accessible from the adjacent road-right-of-way for operation and maintenance purposes. Completed easement documents ready for granting, acceptance and recording will need to be accomplished. The Budget and Schedule show the 100% design occurring after the locations are finalized, however, it is feasible that much these steps can be taken on a parallel time frame to the completion of the bid documents related to the sample stations.

With respect to compliance with the Lindsay adopted Guidelines implementing the California Environmental Quality Act, steps have been accomplished. First, it has been determined that compliance must occur with the adopted Guidelines. Second, sufficient work has been done to identify the basis by which the elements of the Project could potentially be Categorically Exempt.

The final additional document which has been drafted and submitted is a request to amend the Water Supply Permit as issued by CDPH. Application has been made for an amendment to said permit to add the Project features to the water system of the City and to allow for same to be operated as a part of the system. Implementation of the Project and the issuance of the amended Water Supply Permit would lead to the elimination of the requirement of issuance of the BWA to the current customers receiving same.

9.4.1.1Existing Data and Studies

A brief discussion of the data that have been collected and studies that have been performed that support the project(s)' site location, feasibility, and technical methods. If necessary, include references to the page locations of the studies or reports that support the claims made in this discussion.

<u>Chlorine Contact Time Study</u>

In preparation for dealing with the position of CDPH relative to the utilization of Well No. 15 and the BWA requirement of CDPH, a chlorine contact time study was accomplished. This study indicated the capability of the Project Facilities to accomplish the retention of the produced water supply sufficiently to satisfy the minimum contact time requirement.

The determination of the locations of the sampling stations for determination of residual chlorine levels were made in consultation with CDPH. These locations were based

principally on the issue of ensuring that chlorine residual still existed prior to delivery of supply to Lindsay customers, as compared to a determination being made on a computed basis. The location determinations were conveyed to the City by written communication from CDPH as a condition precedent to the removal of the BWA.

2012 IRWM Project Submittal to KRB IRWM Group

A project submittal was prepared for evaluation in December 2012 for the Kaweah River Basin IRWM Group to review and score. This application was determined to be one of the highest ranking projects submitted for consideration.

9.4.2 Purpose and Need

In the course of review and approval of land development proposals, Lindsay has committed to provide a pressurized, potable water supply to support housing, commercial and industrial developments located within the city limits of Lindsay. As Lindsay has chosen treated surface water as its principal source of supply to meet the demands of its customers, it has done so with the recognition that the source of surface supply is subject to reductions in available quantity due to several factors including hydrologic conditions, outages due to both routine and emergency dam and canal conveyance facilities and treatability considerations which include introduction of chemicals for maintenance purposes which may lead to restricted use due to the presence of adverse concentrations of residual chemicals. As history has proven, the availability of fully compliant groundwater sources with respect to all quality parameters is difficult to achieve in the groundwater basin which is available to Lindsay to tap for a source of supply. The implementation of a project with a limited capital cost impact, limited skill set requirements for operator oversight and minor operation and maintenance cost impacts is of major importance to Lindsay. The Project satisfies each of these objectives and would allow the Well No. 15 facility to contribute directly to the principal goal of Lindsay relative to a source of supply.

As further demonstration of the need in this area and the overall importance of having available compliant groundwater supplies at hand, the recent 120-day shutdown of the Friant-Kern Canal necessitated coordination between several domestic water purveyors to survive the prolonged outage of this main conveyance facility. The prolonged shutdown was necessary due to chemical treatment of the invasive species identified as Acquired Western Water Milfoil where, following dewatering, chemical application occurred with an application period of a minimum of 45 days being required prior to re-introducing water into the Friant-Kern Canal. Post application, diversions of water from

the canal could still not occur until testing validated that remainder concentrations of the applied chemicals were below thresholds established by the toxicologist from the State Department of Health Services which extended the lack of diversion capability well beyond the 120 day original forecasted period. During this time, coordination occurred between the Lindsay-Strathmore Irrigation District, the Strathmore Public Utility District and the City of Lindsay who shuffled supplies between each other attempting to deliver compliant drinking water to their customers for as long a period of time as possible. The availability of fully compliant water from Well No. 15 would have enhanced the coordination efforts between these agencies and further eased the problems associated with the prolonged time frame associated with diversion capability. The completion of the Project will, therefore, add significant value and enhanced capability to the coordination efforts between domestic, commercial and industrial water purveyors in the area, as well as introducing another tool into the operational matrix of the coordinating agencies.

With respect to the goals and objectives of the Integrated Regional Water Management Plan (IRWMP), of which Lindsay is an Memorandum of Understanding (MOU) signatory, the Project is fully compliant. The IRWMP stresses the need to work with disadvantaged communities, of which Lindsay is one, in efforts to ensure that their potable drinking water supply is current with all applicable standards. The IRWMP focuses on elements of project development and ongoing support which will allow for improvements on a regional basis effecting local supplies. In addition, IRWMP implementation procedures include a process of project development, project evaluation, project ranking and project support which is basin-wide in nature. The subject Project is not only in conformance with the elements of this process, but has been ranked as the superior drinking water supply related project for the current round of funding. The Project has also been vetted out through the competitive evaluation process as a project surpassing the required minimum thresholds for project evaluation scoring and in the preliminary local scoring based on interpretation of Department of Water Resources Proposition 84 application submittal requirements.

9.4.3 Project List

The Project consists of two (2) parts, designed to be a single project. The success of the Project in meeting the goals and objectives, stated above, does not hinge on implementation of a multiple number of projects, the failure of any of which would lead to unsuccessful satisfaction of the goals and objectives.

As Project background information, Lindsay owns and operates Well No. 15. Operating personnel employed by Lindsay regularly rely on this facility to allow them to meet customer water demands. Due to cyclic bacteriological contamination, the State Department of Public Health (CDPH) required the City to issue a Boil Water Advisory (BWA) if they were going to continue to utilize Well No. 15 as a part of the supply produced to meet customer demand. The BWA states “Since May, 2009, the City of Lindsay Well No. 15 has shown positive bacteriological samples.” By way of a May 26, 2009, letter from CDPH, CDPH directed Lindsay to maintain a BWA for 34 homes, which were the first served from Well No. 15. The CDPH letter also required Lindsay to submit a plan for CDPH review and approval detailing how a 4-log virus inactivation would be provided. Lindsay submitted a memorandum, prepared by Keller/Wegley Engineering, dated June 25, 2009, which identified a possible solution to achieve a 4-log virus removal and a suggested monitoring plan to assure that Lindsay customers were receiving a properly disinfected water supply when Well No. 15 was being utilized as a source of supply. By way of a July 3, 2009, letter from CDPH, the BWA was lifted for homes along Avenue 242, but ordered the BWA to be issued for five (5) homes in the vicinity of Road 188 and Avenue 240, which are the first homes to receive water from Well No. 15. In addition, CDPH listed a number of operational and monitoring practices which Lindsay was to employ with respect to Well No. 15. A supplemental communication from CDPH, dated July 17, 2010, communicated to Lindsay specific CDPH requirements with regard to the use of Well No. 15 until a long term solution was implemented addressing positive bacteriological samples from water produced by Well No. 15. This correspondence contained the specific requirement that Lindsay was required to install equipment to facilitate continuous recording of chlorine residual, alarms and shut down control as an element of the long-term solution.

As a result of the CDPH requirements, which paralleled the initial design recommendations, the Project consists of a number of elements. In order to assure a 4-log virus inactivation, an eight (8) inch diameter pipeline, approximately 1,000 feet long, is to be constructed as a part of the Lindsay distribution system and incorporated into the system prior to delivery of water to the five (5) customer deliveries subject to the BWA. Following construction of the pipeline segment, three (3) climate controlled, continuous recording chlorine analyzers are to be installed at strategic locations. The first of these would be at Well No. 15 with the second installed approximately 100 feet before the first service located on Avenue 242. The last analyzer would be installed about 100 feet before the first service to the five (5) homes located in the vicinity of Avenue 240 and Road 188, which are currently under the directives of the BWA. In

addition, alarms and controls which would cease operation of Well No. 15 in the event of an inadequate residual chlorine level are to be provided at each sampling station location should the chlorine residual fall below a defined acceptable level.

Additional Project elements include analysis of the environmental impacts of the Project which will result in an action under the adopted Guidelines of Lindsay implementing the California Environmental Quality Act. This examination will include whether or not the Project is categorically exempt pursuant to Section 15301, of the California Code of Regulations, implementing the California Environmental Quality Act on a state-wide basis.

When the design concept is complete, the final design and bid-ready Plans and Specifications will be prepared in order to take the Project to construction. Appurtenant with the design process will be the negotiation and securing of easements sufficient to site and maintain the sampling stations, as same cannot be located within existing road rights-of-ways. These easements will need to be negotiated prior to the completion of the final construction plans.

9.4.4 Integrated Elements

The initial drilling and the continued maintenance of Well No. 15 offer a coordination element between Lindsay and several other IRWMP participants. Additional efforts of Lindsay also are critical to a number of efforts which are ongoing on a Kaweah River Basin level with results from several of those efforts also available as planning tools, on a reciprocal basis, to Lindsay. The first of these is the recent completion of an expansion to the numerical computer model of the groundwater basin lying beneath the Kaweah Delta WCD. Lindsay obtained a grant from the Department of Water Resources and added City funds to the grant which were further augmented by in-kind services from the Department of Water Resources. The lithology from Well No. 15 was utilized in the development of the model expansion and the calibration of the expanded KDWCD model, which now extends from the KDWCD boundary all the way to the interface of the valley floor with the Sierra Nevada foothills. Other wells from the City offered lithology details, as well as groundwater elevation data, assisting in the model expansion design and calibration. The final report on the expanded model was recently submitted to the Department of Water Resources and the information will be utilized in the currently budgeted update to the Water Resources Inventory contracted to be performed by Fugro West for KDWCD. The land use analysis phase of the update is being completed and, when available, will be utilized in not only updating the inventory of groundwater

and surface water conditions within the Kaweah River Basin, but will also be utilized to further refine the numerical groundwater model. In this update, the prior boundary condition at the easterly boundary of the KDWCD will no longer exist as the efforts of Lindsay to extend the model to the interface between the foothills and the valley floor will be available for use by the KDWCD.

From a groundwater management perspective, Lindsay is a MOU signatory to the Kaweah Basin Groundwater Management Plan, a multi-agency plan headed by KDWCD. Groundwater level information, extraction quantity history and intentional recharge efforts are all elements of the Basin-wide Groundwater Management Plan. The contribution of Lindsay is critical to the accuracy of efforts to depict actual groundwater conditions in the southeasterly portion of the Kaweah River Basin as their well records, coupled with those of the Lindsay-Strathmore Irrigation District, represent the primary inputs to the Plan update and the accuracy of the calibration of the numerical groundwater model.

9.4.5 Project Maps

Provide a site map showing the project(s) geographical location and the surrounding work boundaries.

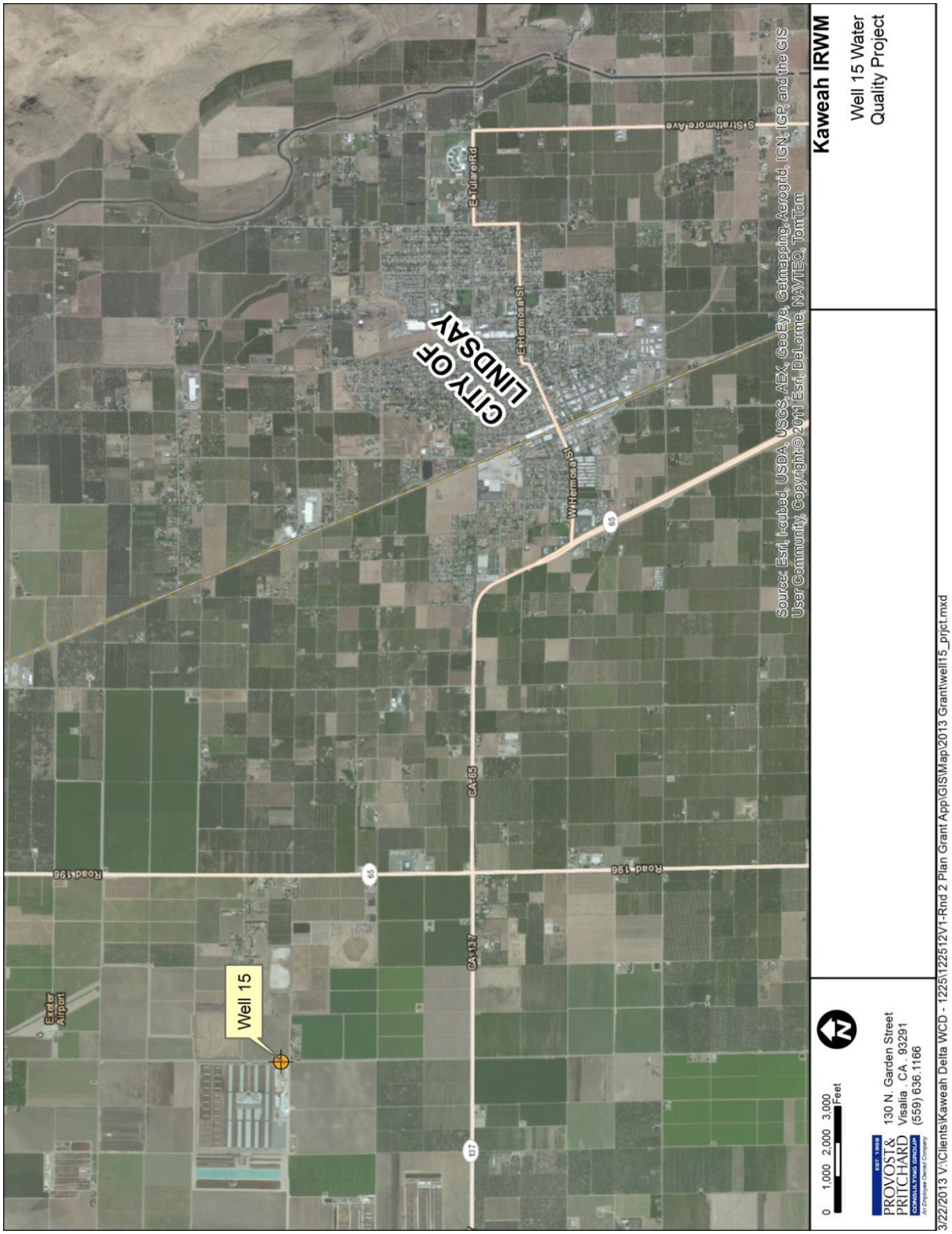


Figure 9.6: Well 15 Water Quality Project Map

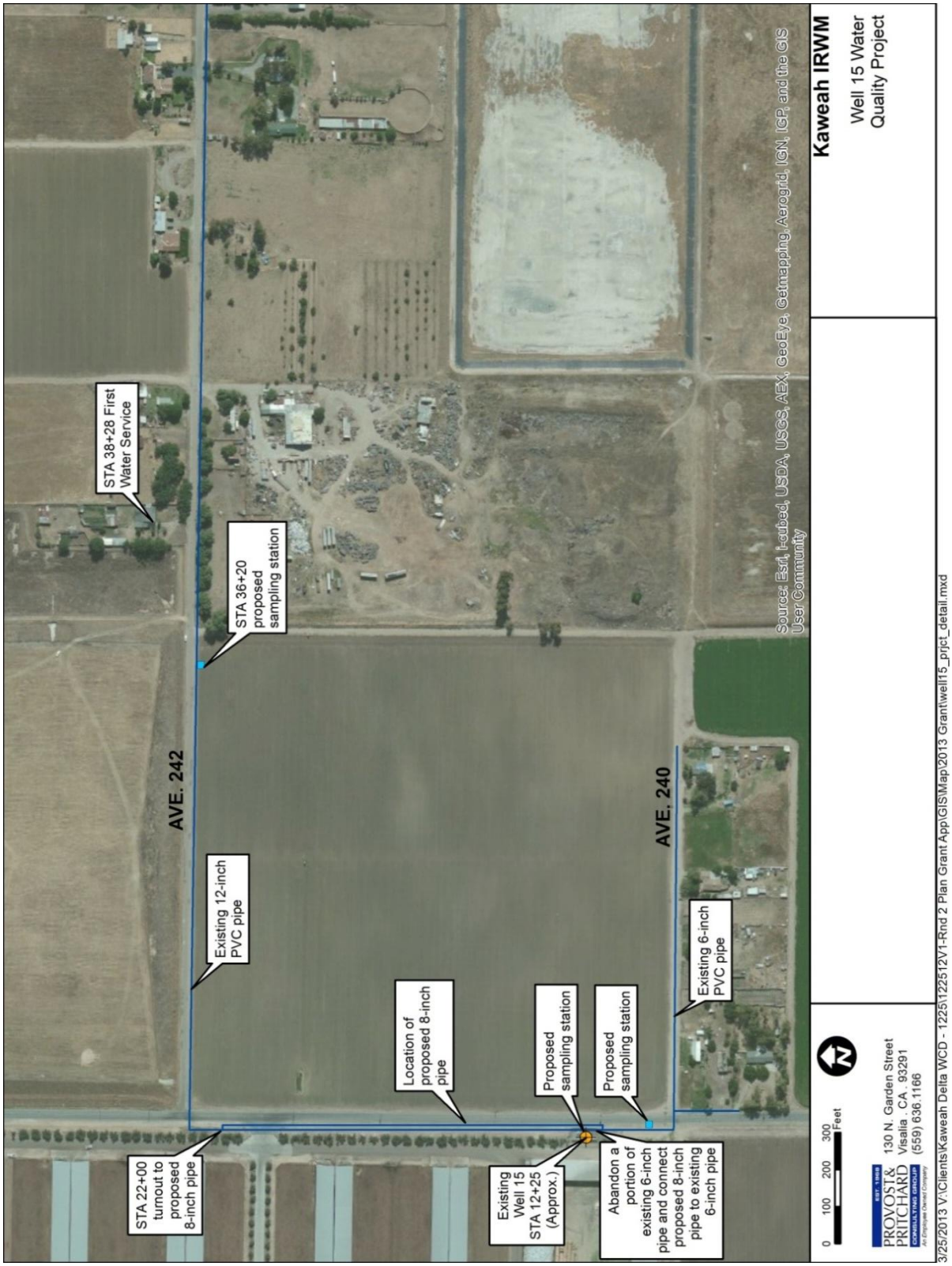


Figure 9.7: Well 15 Water Quality Project Detail Map

9.4.6 Project Timing and Phasing

If the proposed project(s) is part of a multi-phased project complex, provide a description that demonstrates that the proposal can operate on a standalone basis, i.e., can be fully functional without implementation of the subsequent projects.

As the Project is a stand-alone project, not part of a multi-phased project, there is no schedule interdependency associated with the proposal.

The only Project task which creates a schedule difficulty is that related to the ability to obtain easements for the sampling stations. It is the general policy of Lindsay to negotiate easements to a successful completion without involvement of the utilization of imminent domain. Such will be the case with the Project with the contingency remaining available that, if the easement issue starts to create a delay in the implementation schedule, a decision will need to be made by the City Council relative to either invoking the threat of, or the use of, imminent domain. No other Project timing obstacles appear to exist at the current time.

9.5 Well 15 Water Quality Project Tasks

9.5.1 Budget Category (a): Direct Project Administration Costs

9.5.1.1Task 1 - Administration

Lindsay's Director of City Services will conduct all administrative work related to the Project. Administrative work will include the supervision and approval of all aspects of the Project from design through construction. Monthly Project meetings will be held to discuss progress payment requests from the awarded contractors, approval of invoices from Lindsay's consultant engineering firm, materials testing firm, surveying firm and water quality testing laboratory. Upon review and approval of payment to contracted parties by the Lindsay City Council, invoices will be prepared as part of the Quarterly Reporting process with DWR.

Deliverables to DWR – City of Lindsay will deliver monthly invoices of work accomplished to DWR. Within these reports pay requests from contractors, certified weekly payroll records, and verifications of prevailing wage compliance will be included.

9.5.1.2Task 2 - Labor Compliance Program

A Department of Industrial Relations (DIR) approved labor compliance manual will be used to implement the labor compliance program for the Project in accordance with the requirements of California Labor Code §1771.5(b). The lead agency, KDWCD, will administer and implement said program, through their Labor Compliance Consultant.

The Labor Compliance Consultant will verify prevailing wage rates for applicable personnel. As part of the labor compliance program, KDWCD will require that all contractors, subcontractors and inspection firms submit weekly certified payrolls to KDWCD's Labor Compliance Consultant for review and certification. The Labor Compliance Consultant will certify all payrolls upon verification that said payrolls comply with the State of California prevailing wage rates and benefits tables.

Additional requirements include:

6. Worker's Compensation and Occupational Disease Insurance meeting the statutory requirements of the State in which the work is to be performed;
7. Employer's Liability Insurance in an amount of at least $5,000,000;
8. Comprehensive Liability Insurance with limits of:
   Bodily Injury, Property Damage and Personal Injury - $5,000,000 each occurrence, $5,000,000 aggregate.

   This insurance shall be on an occurrence basis and shall protect the Contractor against liability arising from: his operations, operations by sub-contractors, elevators, products, completed operations and contractual liability assumed under the indemnity provisions above insurance.
9. Automobile Liability on an occurrence basis covering all owned, non-owned, and hired automobiles for limits of liability of:

   Bodily Injury and Property Damage - $5,000,000 each occurrence; and
10. Builder's Risk Insurance is required.

These limits shall be considered sufficient for the contractor associated with this project, provided however, that the limits of such insurance shall not limit the extent of such assumed responsibility and liability.

Deliverables to DWR – Execution of DIR approved labor compliance program; documentation will be filed by KDWCD and furnished to the DWR as requested.

9.5.1.3Task 3 - Reporting

KDWCD's Projects/Administration Manager, in conjunction with KDWCD's Consulting Engineer will prepare all reporting efforts identified in the Grant Agreement with DWR. Monthly progress reports will be written by the Construction Administrator(s) to inform the Project Administration team as to the accomplishments of the Project. This information will be used to develop all quarterly, final and post completion reports as specified in the Grant Agreement. All reports will include updated Project photos of construction activities and daily inspection reports in addition to the required literature by DWR.

The City of Lindsay will also generate reporting of project progress to the IRWM group and to the City Council on a monthly basis.

Deliverables to DWR – KDWCD will submit all quarterly, final, and post completion reports as specified in the Grant Agreement.

9.5.2 Budget Category (b): Land Purchase/Easements

9.5.2.1 Task 4 – Land Easements

The City will need to obtain three (3) easements for the construction of the Chlorine Residual Sampling Stations. Each easement is predicted to incorporate 40 square feet of land.

Deliverables to DWR – KDWCD upon receipt from the City of Lindsay; will provide a copies of all obtained easements.

9.5.3 Budget Category (c): Planning/Design/Engineering/Environmental Documentation

9.5.3.1Task 5 – Assessment and Evaluation

Task 5.1 – Chlorine Contact Time Study: The Chlorine Contact Time Study (Study) was accomplished for Lindsay in 2010 by Keller/Wegley Consulting Engineers which would provide information to the City relative to the utilization of their Well No. 15 and the Boil Water Advisory which the City was required to issue to its customers by the State Department of Public Health (CDPH) due to cyclic bacteriological contamination. The Study indicated the capability of the Project facilities to accomplish the retention of the produced water supply sufficiently to satisfy the minimum contact time requirement.

Deliverables to DWR – Copies of the Chlorine Contact Time Study conclusions will be provided to DWR upon execution of the Grant Agreement.

9.5.3.2Task 6 – Design

Final design of the entire Project constructible components has not been completed. The current Project design is a conceptual ten percent (10%) design. Lindsay has contracted with a local Civil Engineering consultant to complete the final design for all of the Project constructible components beginning in October, 2013. Final Design work will include designing the Project constructible components through a 30% concept design, 60% design, 90% pre-final design and 100% design. Project Plans and Specifications will be developed in preparation for the public bidding processes.

The Project Specifications will be developed for the work included in the Project Plans and will include a description of work to be performed, will reference applicable product and industry standards applicable to the work, will specify who is responsible for applicable safety plans; will outline the process of submitting product information to the Project Engineer for acceptance, will outline quality assurance measures for work to be performed, will specify the acceptable procedures for installation of the specified work, will address plausible construction issues encountered during construction activities, will define acceptable tolerances for the accomplished work and will include all necessary public bid and draft contract documents.

Deliverables to DWR – The City of Lindsay will deliver printed copies of the Final Project Plans and Specifications, signed by a registered Civil Engineer in the State of California. These documents will be provided to DWR within 30 days of completion and acceptance by KDWCD.

9.5.3.3Task 7 – Environmental Documentation

Task 7.1 – CEQA Documentation: With respect to compliance with their adopted guidelines implementing the California Environmental Quality Act (CEQA), several steps have already been accomplished by the Project Engineer. Work has been accomplished to identify the basis by which the elements of the Project could potentially be Categorically Exempt. Work to be accomplished to comply with Lindsay's adopted guidelines include a detailed review of the previously accomplished efforts by the City of Lindsay's Legal Counsel, confirmation by the City of Lindsay's City Council that the Project elements are exempt and such a finding be made in an official forum. Following that determination, or one in which a determination of a no effects impact is found to

exist, recordation of the applicable documents must be accomplished with the County of Tulare Recorder. Each of these steps will require proper notification to the public and the opportunity for public participation and input prior to the final decision being made by the City of Lindsay Council.

Deliverables to DWR – KDWCD will submit to DWR draft copies of adopted CEQA documentation, which is presumed to be Categorically Exempt, a copy of the transmittal to the State Clearinghouse, all received comments and responses to said comments, and a copy of the resolution adopting the document, within 30 days of filing with the County of Tulare.

9.5.3.4Task 8 – Construction Inspection/Testing

Task 8.1 – Construction Inspection: The Resident Inspector will preside over all Project construction activities under the direction of the Project Engineer and will be required to be onsite during all Project construction activities. The Resident Inspector will be required to complete a daily inspection report which details all construction activities accomplished, results of necessary material testing, verification of truck tags, and indication of compaction tests.

Task 8.2 – Construction Surveying: Construction Staking will be provided by a local consultant and will be under the direction of a Professional Land Surveyor and the Project Engineer. Construction Staking activities are envisioned to be on an as needed basis, throughout all Project construction activities.

Task 8.3 – Water Quality Testing: Upon completion of the Project, water quality testing will be accomplished to test for the Chlorine residual within Lindsay's Well No. 15 water main. These samples will be taken and processed by a certified analytical laboratory.

Task 8.4 – Materials Testing – Materials testing for the Project is envisioned to include concrete cylinder testing and compaction testing. Compression test cylinders will be taken for each load of concrete used in the construction of the Project facilities and will require 3-day, 7-day, 21-day and 28-day tests. All concrete cylinders will be sampled by the Project Engineer or the Project Engineer's representative and will be delivered to a qualified testing laboratory for testing and certification by a qualified Geotechnical Engineer that insures that the concrete meets the compressive strength requirements detailed in the Project Specifications.

Compaction testing will be performed to test in-place density of compacted soils throughout all of the Project facilities. All compaction testing and associated lab work will be under the direction of a qualified Geotechnical Engineer and all testing will be completed by the Geotechnical Engineer or the Geotechnical Engineer's representative.

Deliverables to DWR – Copies of the Resident Inspector's Daily Logs will be included in the quarterly reports submitted to DWR. Water Quality results will be included in the Project's final report to DWR. Material test results can be made available upon request.

9.5.4 Budget Category (d): Construction/Implementation

9.5.4.1Task 9 – Construction Contracting

Task 9.1 – Public Bidding Process: Lindsay will conduct a public bid processes for the construction of the Project constructible components. The Public bidding process will be administered by the Project Engineer. Lindsay will publish a notice inviting bidders in a local newspaper publication on the same day of the week for two (2) successive weeks. This notice will provide the official title for the Project and briefly describe the worked sought from bidding contractors. It will also present the location where bids shall be submitted and the date and time when bids will be publicly opened and read. The notice will describe the required conditions of the bid packet for acceptance and will describe the required mandatory pre-bid meeting's date, time and place. The notice shall describe where bidding documents can be acquired. The notice shall also describe to bidders that prevailing wages will be required for the job, that a bidder's bond in the amount of 10% of the base bid will be required and the required contractor's license classification for the Project.

As part of the public bidding process, a mandatory pre-bid meeting with interested contractors will be conducted to review information in the Project Plans and Specifications and answer questions submitted by interested contractors. An attendance list will be generated for the meeting and detailed minutes will be taken of all discussions during the meeting. The attendance list from this meeting, the questions asked and responses to said questions will be summarized in one document and distributed as an addendum to all plan holders and contractors that were present at the mandatory pre-bid meeting.

The Project Engineer or his representative will conduct the public bid opening and will keep the official clock as to when the time for acceptable bid submittals has passed. Upon declaration that the public bid time has closed, all submitted bids will be collected,

opened and publicly read announcing the submitting contractors name and total bid amount. Upon completion of the bid opening any questions will be answered to those who are present. Once all questions have been addressed, the meeting will be closed and the Project Engineer or his representative will begin evaluating the submitted bids. The contractor's license, the bond amounts, the bond rating of the issuing company, the insurance and the contractor's history of claims, the math involved in the bid proposal, the preliminary project schedule, the listed subconsultants, project experience, as well as all other required forms will be checked against the requirements of the contract document. A summary of the Bid evaluations will be generated for the City of Lindsay's Council to consider.

Task 9.2 – Public Bid Award and Execution of Contract: Upon selection of the successful bidder for the Project by the City of Lindsay Council, the Project Engineer will prepare the Notice of Award for submittal to and signature from the selected contractor. The Project Engineer will work with the selected contractor to issue and have executed all contractual documentation. Upon completion of the contractual documents, the Project Engineer will issue the Notice to Proceed, which officially begins the contractor's allowable timeframe for the construction of the facilities.

Deliverables to DWR – Lindsay will deliver to DWR a copy of the notices inviting bidders from the local newspaper publication; a copy of the agenda, minutes from the mandatory pre-bid meeting; a copy of the bid evaluation summary; and award and contract documents. These documents will be provided to DWR within 30 days of completion/execution.

9.5.4.2Task 10 – Construction

Construction of the Project will be performed by the awarded contractor, who was selected through the public bidding process as described previously under Task 9 – Construction Contracting. The Project involves the construction of a 1,000 LF Water main facility and three Chlorine Residual Sampling Stations. The following are the anticipated general Project construction efforts.

Mobilization and Demobilization: This work task will include the mobilization and demobilization for all demolition, construction and site work authorized under the construction contract and all necessary equipment and materials to the Project site. Once mobilization has begun, the contractor will assume responsibility for Project site security. This work item also includes obtaining the required insurance and securing all

necessary licenses, permits, preparation of plans, and paying any potential permit fees for the entire Project. This work task will also include contacting Underground Services Alert for a review and marking of the Project site for existing utilities.

Sheeting and Shoring: This work task includes the supply of all sheeting and shoring materials necessary to be in compliant with the Trench Safety Plan. Also included in this work task is the development of a Storm Water Pollution Prevention Plan and a Dust Control Plan.

Clearing and Grubbing: This work task includes work performed by the contractor to clear the Project site from all debris, existing irrigation systems and existing crop vegetation, if applicable at time of construction.

Pipeline Construction: This work task includes work performed by the contractor to furnish and install 1,000 LF of 8" AWWA C900 Class 200 pipe and appurtenances. Appurtenances include reducer fittings, tee fittings, elbow fittings and gate valves. In addition, work performed will also include the abandonment of the existing 6" water main and the connection of the proposed Project to the existing water main facility.

Chlorine Residual Sampling Stations Construction: This work task includes work performed by the contractor to furnish and install three (3) climate controlled, continuous recording chlorine analyzers at three specific locations: Well No. 15, 100 feet before the first service located on Avenue 242, and 100 feet prior to the first service to the five (5) homes located in the vicinity of Avenue 240 and Road 188. In addition, alarms and controls will be installed at each sampling station location.

9.5.5 Budget Category (e): Environmental Compliance/Mitigation/Enhancement

9.5.5.1Task 11 – Environmental Compliance/Mitigation/ Enhancement

Implementation of identified mitigation measures will be accomplished throughout the constructible time period. It is envisioned that all Project mitigation measures will be identified prior to the construction of the Project facilities through the environmental documentation, although it is anticipated that the Project will not likely impact Federal or State protected species or natural communities.

9.5.6 Budget Category (f): Construction Administration

9.5.6.1Task 12 – Construction Administration

Prior to construction, the Project Engineer will work with the contractor to verify that the material and equipment used in the construction of the Project is consistent with applicable contract document requirements and that material suppliers are identified and approved. The Project Engineer and Lindsay's Director of City Services will work with the selected contractor to verify that the contractor bills Lindsay appropriately for the work and that warranty of the work is established by date and honored until the agreed upon expiration date has passed. This work will be coordinated with the representative of Lindsay. If unforeseen circumstances are encountered by the contractor, Lindsay staff and the Project Engineer will expeditiously work to make a determination whether the circumstance is a material change to the work described in the contract. If this is determined, the contractor shall be compensated for this change as per Lindsay policy.

9.5.7 Budget Category (g): Other Costs

9.5.7.1Task 13 – Permitting

The Project currently has no permitting accomplished. It appears, however, that one (1) permit for the construction of the Project facilities will need to be obtained, an Encroachment Permit with the County of Tulare. The awarded contractor will be responsible for obtainment of said permit, however, Lindsay along with the Project Engineer will work with the said contractor to generate the permit application based on project information from the final design.

Deliverables to DWR – Lindsay will deliver to DWR a copy of the encroachment permit with the County of Tulare. These documents will be provided to DWR within 30 days of completion/execution.

9.5.7.2Task 14 – Legal Service

Legal services are anticipated to be used during the obtainment of the land easements, and during the contractual periods with the Department of Water Resources and awarded contractor.

ATTACHMENT 3 – WORK PLAN

APPENDIX A

Exchange Agreement between City of Visalia and Tulare Irrigation District

AGREEMENT

This Agreement is entered into this 31st day of December 2001, by and between the City of Visalia ("City"), a California Charter Law City, and the Kaweah Delta Water Conservation District ("District").

I

RECITALS

The City and the District enter into this "Agreement" on the basis of the following facts, understandings and intentions of the parties:

WHEREAS, the City is a municipal corporation and charter law city incorporated under the laws of the State of California; and

WHEREAS, the District is a political subdivision of the State of California organized under The Water Conservation Act of 1927 (Deering's Uncodified Acts, Act 9127a); and

WHEREAS, the City's municipal affairs include maintenance and enhancement of water supplies sufficient to insure a long term reliability of water service to the residents of the City; and

WHEREAS, the District has among its principal purposes maintenance and enhancement of surface and groundwater supplies within its District boundaries; and

WHEREAS, the City of Visalia lies within the boundaries of the District; and

WHEREAS, the District has historically engaged in activities to maintain and acquire water supplies for the benefit of the lands within the District's boundaries;

WHEREAS, the City has granted an exclusive franchise to the California Water Company for the purpose of providing water to the residents of the City; and

WHEREAS, the City and the District desire to undertake a program to maintain existing, and procure additional water supplies, for the benefit of the residents of the City of Visalia; and

WHEREAS, the program to maintain existing and enhance future water supplies for the residents of the City is consistent and compatible with the mutual purposes and objectives of the City and the District; and

NOW THEREFORE, be it resolved and based upon the mutual covenants and conditions contained herein the City and the District agree as follows:

1. **Purposes.** City and District enter into this program, the primary purpose of which is to maintain existing water rights and acquire additional water supplies for the primary benefit of the residents of the City of Visalia. Additionally the purpose of

this Agreement is to provide funding mechanisms for the maintenance and acquisition of such water supplies and for the construction of facilities necessary to apply such water to the benefit of the residents of the City.

The parties hereto intend that the activities undertaken pursuant to this program will result in maintenance and enhancement of groundwater levels in and around the City. Each year an annual plan will be developed to identify specific activities to meet these purposes.

2. **Term.** Subject to the provisions of Paragraph 5, the term of this Agreement shall be for a period of forty (40) years commencing on January 1, 2002, and expiring on December 31, 2042. Subject to negotiating mutually agreeable terms and conditions, this Agreement shall be renewed in ten (10) year increments beginning on January 1, 2043.

3. **City's Obligations**. The City agrees to undertake to do all of the following:

A. The City will provide the District $100,000.00 annually during the term of this Agreement. Such payment shall be adjusted annually on July 1 by changes in the Consumer Price Index-All Urban Consumers-U.S. City Average-All Items (1982-84 =100). The CPI adjustment shall be based upon the change in the Index for the preceding twelve month period beginning on April 1 and concluding on March 31.

Both parties acknowledge that the City's obligation is to provide the District with $100,000.00 annually, adjusted by the CPI index referred to above. The City retains discretion to directly utilize additional funds generated as a result of new water service connections for related projects including, but not limited to, acquisition and construction of groundwater recharge and/or storm water recharge basins, construction of water management facilities, implementation of water conservation projects, and planning and engineering projects related to efficient water management activities, or the City may provide the funds to the District further the purposes of this Agreement as specified in the annual plan.

B. The City will participate in the Management Committee addressed in Paragraph 7 below, and cooperate with the District in the acquisition and delivery of water for the primary benefit of the residents of the City.

C. The City will undertake to operate all City owned facilities for the primary purpose of optimizing the storm water, groundwater recharge and surface water delivery benefits of such facilities.

4. **District's Obligations.** The District shall undertake to do all of the following:

A. The District shall utilize the funds provided by the City pursuant to Paragraph 3. A, above to achieve the purposes specified in Paragraph 1. The District shall achieve such purposes by implementation of the annual plan developed by the Management Committee.

B. The District shall prepare and provide to City an annual report of activities undertaken to implement the annual plan. Such annual report shall identify water and/or water rights acquired, actual water deliveries, planning and engineering activities and facilities acquired or constructed.

C. The District shall participate in the Management Committee addressed in Paragraph 7 below.

5. **California Water Service Company.** The parties hereto acknowledge that the primary water purveyor in the City limits of the City of Visalia is the California Water Service Company ("Cal Water"). The parties further acknowledge that the Cal Water owns all of the extraction and conveyance facilities necessary to provide such service to the City's residents. It is the acknowledged and expressed intent of the parties to this Agreement to attempt to engage Cal Water in discussions about participation in the programs contemplated by this Agreement. To that end, the parties commit that they will attempt to engage Cal Water in discussions about appropriate means by which Cal Water could effectively participate in the enhancement of water supplies benefiting the residents of the City.

6. **Management Committee.** The parties hereto agree to form a Management Committee comprised of representatives of the District and the City. The Management Committee shall be comprised of one member from each of the governing boards and other staff and technical representatives of the City and the District. The Management Committee shall meet as necessary. The Management Committee shall each year develop an annual plan to achieve the purposes specified in Paragraph 1, which plan shall be mutually agreeable to the parties hereto. The annual plan shall set forth the

specific activities, which the District will implement. The Management Committee shall review the annual report prepared by the District.

7. **Annual Report.** The District shall prepare an annual report each year by no later than April 15th. Such annual report shall identify the amount of water and/or water rights acquired, the cost of the water or water right acquired, the amount and location of water deliveries, planning and engineering activities undertaken, and facility construction activities.

8. **Payments.** The City shall be responsible for collecting all connection fees and conveying such funds to the District on a monthly basis. The District shall deposit such funds in an interest bearing account for use to implement the annual plan. Interest accrued from these funds will be applied to the programs and activities undertaken. The funds shall be specifically utilized by the District to acquire water, construct facilities and reimburse all other costs or expenses, including reasonable administrative costs, incurred by the District in implementing the annual plan.

Additionally the District shall include in the annual report a statement identifying the balance of funds available for projects undertaken pursuant to this Agreement.

9. Default/Remedies. Material defaults of this Agreement shall include, but not be limited to, the occurrence of any one or more of the following events:

A. Either party's failure to keep, perform and observe its promises, covenants, conditions and agreements set forth in this Agreement;

B. Either party's bankruptcy, insolvency, or receivership, which would include taking the benefit of any present or future insolvency statue, an assignment for the benefit of creditors, the filing of a petition in bankruptcy, the filing of a petition or answer seeking re-adjustment of indebtedness under Federal or State law, the consent to the appointment of a receiver trustee, the involuntary taking of control by a receiver or trustee, or the liquidation of all or substantially all of its property.

In the event either party believes the other is in default, the non-defaulting party shall notify the other, in writing, of the alleged default(s) and arrange to meet and confer within ten (10) days of the notice regarding the potential resolution of such default issues. If such conference is unsuccessful, the matter shall be referred to the Management Committee for resolution. The Management committee shall meet

within ten (10) days of such referral to consider the dispute. If the Management Committee cannot resolve the dispute, the matter shall be referred to binding arbitration. Within ten (10) days of referral by the Management committee, the parties shall agree on an arbitrator.. If the parties are unable to agree on an arbitrator, each party shall choose an arbitrator and the two arbitrators shall choose a third. The arbitration shall be conducted according to the rules of the American Arbitration Association. The decision of the arbitrator(s) shall be binding and the arbitrator(s) shall determine which party shall be responsible for payment of the arbitration fees and associated costs.

10. **General Provisions.**

A. **Notices**. All notices or other communications required or desired to be given under this Agreement shall be given in writing and mailed, delivered or transmitted to the other party at the address indicated below:

To City at:

CITY OF VISALIA
707 W. Acequia
Visalia, California 93291
Attention: City Manager
Telephone number: (559)713-4312
Facsimile number: (559)713-4800

To District at:

KAWEAH DELTA WATER CONSERVATION DISTRICT
2975 N. Farmersville Blvd
Farmersville, CA 93223
Attention: General Manager
Telephone number: (559) 747-5601
Facsimile number: (559) 747-1989

Each such notice or other communication shall be deemed effective and given (i) upon receipt, if personally delivered; (ii) upon being transmitted, if sent by telegram, telex or telecopy, if a copy of the notice is also sent by United States first class mail and provided receipt is confirmed by a transmission report or otherwise; (iii) two (2) business days after deposit in the United States mail, postage prepaid, properly addressed to the party to be served; or (iv) upon receipt if sent in any other way. Either party may from time to time, by written notice, designate a different address

than that set forth above for the purpose of notice, provided, however, that no notice of change of address shall be effective until actual receipt of the notice.

B. **Representations and Warranties.** Each party represents to all other parties to the other party that such party has the full power and authority to enter into this Agreement, that the execution and delivery thereof will not affect any agreement to which such party is a party or by which such party is bound, and that this Agreement, as executed and delivered, constitutes a valid and binding obligation of such party enforceable in accordance with its terms. Each of the parties to this Agreement represent and warrant that the Agreement is executed in compliance with the Resolution of the governing entity of the public agency, duly adopted by the governing entity and transcribed in full in the Minutes of the governing entity.

C. **Duty to Cooperate.** Each party shall cooperate so as to facilitate the other party's efforts to carry out its obligations under this Agreement.

D. **Assignment, Successors and Transferees.** Neither party shall assign its rights and obligations under this Agreement without the express written consent of the other party. The obligations and benefits of this Agreement are binding upon and inure to the benefit of any successors and assigns to the parties hereto.

E. **Entire Agreement.** This Agreement constitutes the entire agreement between the parties and it is expressly understood and agreed that the Agreement has been freely and voluntarily entered into by the parties and with the advice of counsel who have explained legal effect of this Agreement. The terms of this Agreement are contractual and not merely recitals. The parties further acknowledge that no warranties, representations or inducements not contained in this Agreement have been made on any subject in connection with this Agreement, and that they have not been induced to execute this Agreement by reason of nondisclosures or suppression of facts. This Agreement is fully integrated.

F. **Amendment/Modification**. The Agreement may not be altered, modified or otherwise changed in any respect except by writing, duly executed by the parties and their authorized representatives.

G. **Construction.** The parties acknowledge that each party and its counsel have reviewed and revised this Agreement and that notwithstanding Civil Code Section 1654, ambiguities, if any, are not to be resolved against the drafting

party and no presumption against one party or the other shall govern the interpretation or construction of any of the terms of this Agreement.

H. **Waivers.** A waiver or breach of a covenant or provision in this Agreement shall not be deemed a waiver of any other covenant or provision in this Agreement, and no waiver shall be valid unless in writing and executed by the waiving party. Any extension of time for performance of any obligation or act shall not be deemed an extension of time for performance of any other obligation or act.

I. **Section Headings.** The various section headings in this Agreement are inserted for convenience of reference only, and shall not affect the meaning or interpretation of this Agreement or any provision hereof. All uses of the words "article(s)" and "section(s)" in this Agreement are references to articles and sections in this Agreement, unless otherwise specified.

J. **Severability.** In the event any of the terms, conditions or covenants contained in this Agreement is held to be invalid, any such invalidity shall not effect any other terms, conditions or covenants contained herein which shall remain in full force and effect.

K. **Governing Law.** California law shall govern the interpretation of and enforcement of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date set forth above.

CITY OF VISALIA

By: _____
City Manager

Attested:

_____
Deputy City Clerk

KAWEAH DELTA WATER
CONSERVATION DISTRICT

By: _____
President

By: _____
General Manager

Approved as to form:

Charlotte Dunn
Risk Management Manager

David M. Deeley
City Attorney

F:\702-08\Settlement Information\Kaweah Delta WCD\Kaweah Agreement.doc

ORIGINAL

AGREEMENT

This Agreement is entered into this 1st day of May, 2001, by and between the TULARE IRRIGATION DISTRICT (hereinafter referred to as "TID,") and the KAWEAH DELTA WATER CONSERVATION DISTRICT (hereinafter referred to as "KDWCD.")

RECITALS

A. TID is a California irrigation district located entirely within the boundaries of KDWCD, organized in 1889, pursuant to the provisions of the Wright Act of 1887;

B. KDWCD is a water conservation district, located in both Tulare County and Kings County, organized and empowered pursuant to the provisions of the Water Conservation District Act of 1927;

C. Historically, TID has made aggressive efforts to purchase and import surface waters, foreign to the area, which have benefited both TID and KDWCD and positively impacted the groundwater within the boundaries of both entities;

D. TID obtains most of its water from either the Kaweah River, pursuant to certain appropriative rights, or from the Central Valley Project-Friant-Kern Canal by virtue of its long-term contract for water made available by the Friant Division of the Central Valley Project (hereinafter referred to as "CVP");

E. TID transports its water received from the Kaweah River and the CVP through its main intake canal, (hereinafter referred to as "Main Intake Canal"), which stretches approximately 14 miles between the Friant-Kern Canal to the northeasterly boundary of TID;

F. Approximately ten (10%) percent of the water transported in the Main Intake Canal leaks from the bottom of the canal and is lost to or recharged into the underlying groundwater;

G. TID has begun a project to place lining in a 9.7-mile stretch of its Main Intake Canal (hereinafter referred to as the "Project") in order to minimize the aforementioned loss of water;

H. Various lawsuits have been filed to stop the Project or to determine rights related to the Project; and

I. TID and KDWCD desire to enter into a written agreement whereby KDWCD agrees to pay TID a portion of its costs to import water within the boundaries of KDWCD (hereinafter referred to as "Kaweah Basin"), and, in return, TID agrees not to perform any construction work on the Project during the term of this Agreement, which should allow continued seepage losses from the Main Intake Canal and the preservation of oak trees,

NOW, THEREFORE, in consideration of the covenants, conditions, and premises hereinafter set forth, the parties agree as follows:

ARTICLE I

TERM

1. Initial Term. The initial term of this Agreement shall be for a period of ten (10) years.

2. Renewal. The term of this Agreement shall be automatically extended for an additional five (5) years at the end of the aforementioned initial term of ten (10)

years, or, thereafter, at each five (5) year anniversary, unless written notice of non-renewal is provided by one of the parties. A minimum of five (5) years notice of non-renewal must be provided. Any notice of non-renewal must be given within the six (6) month period ending on each five (5) year anniversary of the signing of this Agreement.

3. Effective Date. This Agreement shall not be effective unless and until the approval and execution of both an agreement by and between KDWCD and the City of Visalia dealing with surface water importation and related benefits and an agreement by and between TID and the City of Visalia dealing with implementation of certain aspects of the Stipulation and Agreement dated January 14, 1999, by and between TID and the City of Visalia. If both of the aforementioned agreements have not been signed by their respective parties by December 31, 2001, then this Agreement shall be deemed null and void.

ARTICLE II

PAYMENT

1. Amount of Payment. Beginning March 1, 2001, through February 28, 2002, and each twelve month period thereafter, KDWCD shall pay TID $3.50 for each acre-foot of surface water, other than water from the St. Johns River, the Lower Kaweah River, or a tributary of either, which is imported by TID into the Kaweah Basin. Such imports shall include, but not be limited to, water for direct delivery, groundwater recharge, exchanges, or banking within the Kaweah Basin. No maximum or minimum requirement is imposed on the quantity of water subject to payment as a result of this Agreement.

2. Timing of Payments. Based on records of diversion provided to KDWCD by TID, KDWCD shall pay TID the amount due pursuant to the terms of this Agreement within forty-five (45) days after the end of each calendar year quarter. A final adjustment for each calendar year shall be computed within forty-five (45) days after the final annual recap prepared by the Friant Water Users Authority, with any final adjustment payment being made within thirty (30) days after receipt of said final annual recap.

3. Adjustments. Every five (5) years, the amount paid by KDWCD to TID shall increase by $.50 for each acre-foot of water metered as described in this Agreement, unless the parties agree otherwise in writing. The parties agree to meet and confer on other possible adjustments in the aforementioned payment, no less than six (6) months before each five (5) year anniversary of this Agreement.

4. Exceptions. No payment by KDWCD shall be made for imported surface water in the following situations:

a) if the objective irrigation and spreading demand flowrate requested by the Corps of Engineers has not been met, as determined by the Watermaster appointed by the Kaweah and St. Johns Rivers Association;

b) to the extent such imported surface water results in a substantial amount of water leaving the Kaweah Basin, as determined by the Watermaster appointed by the Kaweah and St. Johns Rivers Association;

c) to the extent the water is part of a partnership program wherein TID is receiving relief from full cost by virtue of payment from KDWCD or a third party having its service area within the Kaweah Basin and the imported surface water is delivered into the Kaweah Basin;

d) to the extent the water is part of a banking program involving exchange of non-CVP water for CVP water where the exchange ratio is less than one (1) to one (1);

e) to the extent the water is offset by the physical exportation of waters out of the Kaweah Basin; or

f) to the extent the water is carried to TID by means other than the Main Intake Canal, Packwood Creek, Cameron Creek, Tulare Irrigation Company Canal, Evans Ditch by way of Mill Creek, the Consolidated Peoples Ditch Company system or such other facilities as agreed to in writing by the parties.

ARTICLE III

MEASUREMENT OF WATER

1. Location. The aforementioned payments shall only be made for water diverted by TID from the Friant-Kern Canal turnouts at Mileposts 68.14, 69.48 and 71.29, otherwise identified by the Friant Water Users Authority as the Tulare Parshall, St. Johns and Kaweah, respectively.

2. Measurement. Measurement of the water diverted at the above-described locations shall be accomplished by the measurement device maintained by the Friant

Water Users Authority, located immediately downstream of the aforementioned points of diversion. Monthly records of diversions, as prepared by the Friant Water Users Authority, shall be provided to KDWCD by TID. Any adjustments to relevant diversion records by the Friant Water Users Authority or the U.S. Bureau of Reclamation shall be promptly provided to KDWCD by TID.

3. Alternate Locations. Payments to TID, pursuant to this Agreement, for water diverted by TID at points other than at the aforementioned location shall only be made if the parties so agree in writing.

ARTICLE IV

RIGHT OF FIRST REFUSAL

1. Purchase Option. TID gives a right of first refusal to KDWCD to purchase such quantities of the TID long-term CVP water supplies that are made available each contract year by declaration of the U.S. Bureau of Reclamation and which TID declines to purchase and deliver for the purposes of direct delivery, groundwater recharge, exchange or banking. Any exercise of this right of first refusal shall not cause TID to breach its then existing CVP contract or violate the terms and conditions of the Friant Division Statement of Policy for water service, as it is being interpreted and applied. In either event, KDWCD may immediately terminate this Agreement, or, alternatively, it must either immediately prevent or remedy any such breach or violation. KDWCD shall exercise or decline such right of first refusal within seventy-two (72) hours of written notice of availability from TID. The purchase rate shall be at the then current TID CVP contract rate applicable to the type of water being purchased, plus $5.00 per acre-foot.

The aforementioned $5.00 per acre-foot charge may be subject to adjustment in subsequent extensions of this Agreement as hereinafter provided in paragraph no. 2 of this Article. Should KDWCD purchase any water pursuant to this provision, such water shall be delivered within the Kaweah Basin and may be sold or exchanged by KDWCD or used by it for groundwater recharge, carriage losses, or banking, so long as any such water is used within the Kaweah Basin.

The foregoing right of first refusal can be superceded by TID doing one of the following:

a) entering into an agreement implementing a transaction with certain third parties, with evidence of such an agreement being provided to KDWCD by TID and, with such transactions being limited to one of the following:

(i) transfers by and between TID and the Lindsay-Strathmore Irrigation District consistent with historical transfers between the two entities;

(ii) transfers by and between TID and the Delano-Earlimart Irrigation District consistent with the historical transfers between the two entities; and

(iii) the remaining CVP water supply owed by TID as part of the consideration promised for an interest in the Rayo Water Company and stock in the Wutchumna Water Company.

b) providing a payment to KDWCD, for each acre-foot of water sold and delivered outside of the Kaweah Basin, as evidenced by a transfer agreement provided to KDWCD. Such payment shall be made to KDWCD within sixty (60) days of the transfer. The amount of such payment shall be determined by taking one-half of the

then current rate for Class 2 Water, as applicable to TID pursuant to its Long-Term Renewal Contract with the United States, times the number of acre-feet being so transferred; or

c) transferring water to another entity, where such water is used within the Kaweah Basin, and which is evidenced by TID providing written notice to KDWCD of such transfer twenty-four (24) hours prior to delivery of such transferred water. By virtue of such notice, KDWCD's right of first refusal shall have been waived.

2. Adjustments. Adjustment of the $5.00 per acre-foot referred to above in paragraph no. 1 of this Article shall be made for each five (5) year contract period, unless the parties agree that no adjustment is necessary. Negotiations related to any such adjustment shall be initiated no later than six (6) months prior to each five (5) year anniversary of this Agreement. Any adjustment to the payment rate, as agreed to between the parties hereto, shall be in the form of an amendment to this Agreement. If agreement on such an amount for the next contract period cannot be reached, the per acre-foot compensation shall be set at an amount computed by dividing the average of the total of the prior five (5) year Friant-Kern Canal operation and maintenance cost billings to TID from the Friant Water Users Authority by an amount determined as twice the average annual amount of CVP contract supply delivered by TID since March 1, 2001, for purposes of direct delivery, groundwater recharge, exchange or banking into the Kaweah Basin.

ARTICLE V

MAIN INTAKE CANAL LINING

1. Termination of Lining Efforts. On the effective date of this Agreement, if TID has not already done so, it shall cease all construction work on its Project. Further, TID will immediately terminate all of its current efforts to define or establish any easement, water right or actual or claimed real property interest in any way related to the Project, except in cases where the interested landowners are willing participants. Within ninety (90) days after the effective date of this Agreement, TID shall take all appropriate steps to adopt Alternative 9 entitled "Agency Payments" as described in its Environmental Impact Report for the Project, in place of the Project to line its Main Intake Canal. Finally, TID will not initiate new efforts on any physical construction to line the Main Intake Canal, or any portion of it, during the term of this Agreement. The foregoing shall not be interpreted to prohibit the continuation of repair and maintenance of the Main Intake Canal consistent with TID's historic practice of doing such things as lining or relining near bridges, and placing rip rap or other barriers to prevent erosion where needed.

2. Water Conservation Plan. As a part of the preparation of the Water Conservation Plan required under the provisions of the CVP Improvement Act, TID shall address the positive nature of this Agreement and the benefits that are generated as a result of its implementation for TID and the Kaweah Basin, to the extent necessary to satisfy plan guidelines required by said legislation.

3. Alternative Loss Recovery Projects. During the term of this Agreement, TID agrees to not pursue any project designed to recover seepage losses from the Main Intake Canal. Such alternatives shall include, but not be limited to, live, mature and healthy tree removal along the Main Intake Canal alignment, or shallow or deep well recovery systems. As used in this paragraph, the term "mature" shall mean a tree having a trunk diameter of six inches or greater at a point measured 4.5 feet above the root crown. This paragraph is not intended nor shall it be interpreted to restrict the normal maintenance activities associated with the Main Intake Canal.

ARTICLE VI

GENERAL CONDITIONS

1. Arbitration. Any controversy or claim arising out of or relating to this Agreement shall be settled by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association. Judgment upon the decision or award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

2. Attorney Fees. Each party to this Agreement shall bear their own attorney fees and costs associated with any arbitration procedure or other legal proceeding related to this Agreement.

3. Time. Time is of the essence of this Agreement and each and all of its provisions.

4. Amendment. No amendment or modification of this Agreement shall be binding or effective, unless such amendment or modification is in writing and signed by the parties.

5. Notices. Any and all notices between the parties hereto shall be in writing and shall be deemed served when faxed to a party, hand-delivered to a party, or, in lieu of such faxing or hand delivery, three (3) days after being deposited in the United States mail, postage prepaid addressed as follows:

TID:

Mailing address:	Hand-delivery address:
Tulare Irrigation District	Tulare Irrigation District
P. O. Box 1920	1350 West San Joaquin Avenue
Tulare, California 93275	Tulare, California 93274

Fax number: (559) 686-3673

KDWCD:

Kaweah Delta Water	Kaweah Delta Water
Conservation District	Conservation District
P. O. Box 1247	2975 N. Farmersville Blvd.
Visalia, California 93279	Farmersville, California 93223

Fax number: (559) 747-1989

6. No Third Party Beneficiary. This Agreement is not intended for the benefit of any person or entity, other than the parties actually signing this Agreement, i.e., TID and KDWCD. This Agreement shall not be construed to have created any rights in any third party, including, but not limited to, the right to enforce this Agreement as a third party beneficiary.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date first above written.

TID:

TULARE IRRIGATION DISTRICT

By: _____
Title: President

By: _____
Title: Vice-President

KDWCD:

KAWEAH DELTA WATER CONSERVATION DISTRICT

By: _____
Title: President

By: _____
Title: Vice-President

Approved as to form:

KIMBLE, MACMICHAEL & UPTON

By: _____
D. Tyler Tharpe, Attorneys for
TULARE IRRIGATION DISTRICT

Approved as to form:

RUDDELL, HORNBURG, COCHRAN, STANTON, SMITH & GULLA, LLP

By: _____
D. Zackary Smith, Attorneys for
KAWEAH DELTA WATER
CONSERVATION DISTRICT

ORIGINAL

AGREEMENT

This Agreement is entered into this 5th day of June, 2001, by and between the TULARE IRRIGATION DISTRICT (hereinafter referred to as "TID") and the KAWEAH DELTA WATER CONSERVATION DISTRICT (hereinafter referred to as "KDWCD").

RECITALS

A. TID is a California irrigation district located entirely within the boundaries of KDWCD, organized in 1889, pursuant to the provisions of the Wright Act of 1887;

B. KDWCD is a water conservation district, located in both Tulare County and Kings County, organized and empowered pursuant to the provisions of the Water Conservation District Act of 1927;

C. KDWCD owns, either in whole or in part, and operates groundwater recharge basins located within the boundaries of TID (hereinafter referred to as "Sinking Basins");

D. TID owns and operates an extensive irrigation water distribution system located within and without its boundaries;

E. By an Agreement, dated October 30, 1952, KDWCD and TID agreed, among other things, that TID could use the Sinking Basins "as balancing reservoirs" and for other purposes, in return for which TID would repair, maintain and supervise the filling of the Sinking Basins;

F. By an Amended Agreement, dated April 7, 1959, TID agreed that KDWCD would have the right to use TID's facilities for the purposes of KDWCD; and

G. Since the aforementioned Agreement and Amended Agreement have expired, TID and KDWCD have not entered into a new written agreement regarding the subject matter of the documents, but now desire to do so,

NOW, THEREFORE, in and for consideration of the mutual covenants, conditions, and promises hereinafter set forth, the parties hereto hereby agree as follows:

1. **Use of Sinking Basins.** KDWCD hereby assigns TID the right to use and operate the Sinking Basins for the purposes of TID, to the extent KDWCD has the right to make such an assignment. Further, KDWCD gives TID the right to connect any or all of the Sinking Basins with inlets and outlets to TID's distribution system. TID shall not do anything which conflicts with KDWCD's operation or use of the Sinking Basins.

2. **Repair and Maintenance of Sinking Basins.** TID shall repair and maintain the Sinking Basins in no less than the same condition as KDWCD maintains its other groundwater recharge basins. TID will supervise the filling of the Sinking Basins, unless contrary notice is given by KDWCD. TID will furnish and pay all necessary equipment and labor for both the handling of waters placed into the Sinking Basins by either party and the repair and maintenance of the Sinking Basins.

3. **Use of Water Distribution Facilities.** TID hereby assigns KDWCD the right to use all of TID's water distribution facilities, including, but not limited to, its canals, ditches, pipes, headgates, groundwater recharge basins and weirs, for the purposes of KDWCD. KDWCD shall not do anything which conflicts with TID's operation or use of its water distribution facilities.

4. **Term.** This Agreement shall be effective when it has been approved and executed by both parties. It will continue in effect in perpetuity.

5. **Conflicting Use.** A party shall give written notice of any conflicting use of its facilities by the other party. Any party receiving such notice of its conflicting use, shall terminate the same within 24 hours. If a party fails to timely terminate a conflicting use, the other party may take such reasonable actions as may be necessary to protect its facilities and operations from the conflicting use.

6. **Indemnification by TID.** To the fullest extent permitted by law, TID shall indemnify and hold harmless and defend KDWCD, its directors, officers, employees, agents, contractors and authorized volunteers, from and against any and all claims, demands, causes of action, damages, costs, expenses, losses or liabilities, in law or in equity, of every kind or nature whatsoever, arising out of or in any way related to TID's use and operation of the Sinking Basins, including the violation of any government law or regulation, compliance with which is the responsibility of TID.

7. **Indemnification by KDWCD.** To the fullest extent permitted by law, KDWCD shall indemnify and hold harmless and defend TID, its directors, officers, employees, agents, contractors and authorized volunteers, from and against any and all claims, demands, causes of action, damages, costs, expenses, losses or liabilities, in law or in equity, of every kind or nature whatsoever, arising out of or in any way related to KDWCD's use and operation of TID's water distribution facilities, including the violation of any government law or regulation, compliance with which is the responsibility of KDWCD.

8. **Notice.** Any notice permitted under this Agreement shall be in writing and shall be deemed duly served when either faxed or personally delivered to the other party, or in lieu of such fax or personal delivery, when deposited in the U.S. mail, postage prepaid, addressed as follows:

TID:

Mailing address:	Hand-delivery address:
Tulare Irrigation District	Tulare Irrigation District
P. O. Box 1920	1350 West San Joaquin Avenue
Tulare, California 93275	Tulare, California 93274

Fax number: (559) 686-3673

KDWCD:

Kaweah Delta Water	Kaweah Delta Water
Conservation District	Conservation District
P. O. Box 1247	2975 N. Farmersville Blvd.
Visalia, California 93279	Farmersville, California 93223

Fax number: (559) 747-1989

9. **Entire Agreement.** This Agreement constitutes the entire agreement between TID and KDWCD regarding the subject matter hereof. Any prior agreements, promises, negotiations or representations not expressly set forth in this Agreement are of no force and effect.

10. **Amendment.** Any amendment to this Agreement shall be of no force and effect unless it is in writing and signed by both parties.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date first above written.

TID:

TULARE IRRIGATION DISTRICT

By: [illegible]
Title: President

By: [illegible]
Title: Sec.

KDWCD:

KAWEAH DELTA WATER CONSERVATION DISTRICT

By: Don Mills
Title: President

By: [illegible]
Title: General Manager

J:\SMITH\KDWCD\General\TID Facilities Use Agreement - (clean 4-3-01).doc

AGREEMENT

The City of Visalia (City), a California Charter Law City, and the Tulare Irrigation District (District), enter into this agreement on this 26 day of September 2001:

I. RECITALS

The City and the District enter into this ("Agreement") on the basis of the following facts, understandings and intentions of the parties:

A. The City is a municipal corporation and charter city incorporated in Tulare County.

B. The District is a political subdivision of the State of California and a body corporate and politic exercising local government power functions, as specified by the California Irrigation District Law, Water Code section 20510 et seq.

C. The District uses a variety of natural and manufactured waterways to transport surface water for agricultural irrigation to customers within the District's service area. The Board of Directors for the District ("Board") is the duly elected and acting legislative body of the Tulare Irrigation District. The Board is responsible by law for legislative and adjudicatory decisions governing property within the District service area. The District and Board are referred to collectively as the "District."

D. The District and the City are each referred to singularly as the "party," or collectively as the "parties."

E. The Main Intake Canal and Tulare Irrigation Company Canal are manufactured waterways, and Cameron Creek is a natural waterway in Tulare County ("the Channels"). The District, via fee-title and other property rights, has the right to use the Main Intake Canal and Cameron Creek for surface water conveyance and flood control. The District is the principal shareholder in the Tulare Irrigation Company ("Company"), which owns entitlements to use the Tulare Irrigation Company Canal for surface water conveyance and flood control. A map showing general locations of the Channels is attached as Exhibit A. The property rights for the use of the Main Intake Canal, Cameron Creek and the Tulare Irrigation Company Canal owned by, respectively, the District and the Tulare Irrigation Company are hereafter referred to as the "Right-of-Ways."

F. The City wishes to use surplus capacity of the Channels unused by the District for conveyance of water for use by the City, or for groundwater recharge and flood control purposes. The City also desires the right to develop the Right-of-Ways along the Tulare Irrigation Company Canal and Cameron Creek for recreational and

aesthetic purposes. The City does not wish to secure these rights by purchase of equity interests in the Channels and Right-of-Ways. Rather, the City desires a right to use surplus capacity in the Channels whenever the District determines that surplus capacity is available for the City's use.

G. The District wishes to accommodate the City's desires, provided the City's use of the Channels and Right-of-Ways does not interfere with the District's operations. The District also wishes to cooperate with the City in the development and operation of groundwater recharge facilities that benefit mutually the City and the District.

H. Through this Agreement, the parties wish and desire to implement the terms and conditions contained in the Agreement and Stipulation for Entry of Judgment.

I. On May 1, 2001, the District entered into an agreement with the Kaweah Delta Water Conservation District ("District-Kaweah Delta WCD Agreement") wherein the District agreed not to line its Main Intake Canal in return for compensation by Kaweah Delta WCD for seepage losses of CVP water imported into the Kaweah Basin.

J. The term of the District-Kaweah Delta WCD Agreement is ten (10) years, subject to renewal at five (5) year intervals thereafter.

K. The City intends to execute an agreement with Kaweah Delta WCD ("City-Kaweah Delta WCD Agreement"), which will provide a mechanism through which Kaweah Delta WCD will purchase water on the City's behalf.

L. The District-Kaweah Delta WCD Agreement does not become effective unless and until this Agreement and the City-Kaweah Delta WCD Agreement are executed by the parties thereto.

II. AGREEMENT

In consideration of the foregoing and of the mutual covenants set forth in this Agreement, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

A. The District's Obligations

The District will grant the following licenses (collectively "the Licenses") to the City:

1. Grant of Licenses

The District will grant to the City licenses for the use of the Main Intake Canal

and Cameron Creek, and will use its best efforts as a controlling shareholder in the Company to cause the Company to grant to the City a license for the use of the Tulare Irrigation Company Canal, consistent with the terms described in this Section (A).

2. Scope of Licenses

The Licenses will be coextensive with the property interests held by the District in and along the Main Intake Canal and Cameron Creek, and with the property interests held by the company in and along the Tulare Irrigation Company Canal. Nothing in this Agreement is intended to grant the City rights other than, or in excess of, the property interests possessed by the District and the Company. The Licenses pertaining to Cameron Creek and the Tulare Irrigation Company Canal will allow the City to, at its discretion, subject to its compliance with applicable laws and regulations, and at the City's sole expense: (1) make the Right-of-Ways available to members of the public for recreation; (2) make physical improvements on the Right-of-Ways to enhance their aesthetic or recreational value; and (3) use surplus capacity in the Channels for the transport of surface water for use by the City, or for flood control and/or groundwater recharge. The Licenses pertaining to the Main Intake Canal will allow the City, subject to compliance with applicable laws and regulations, to use surplus capacity in the canal for conveyance of water for use by the City, flood control or groundwater recharge. The Licenses will be prepared and include specific provisions, so as to ensure that any and all immunities from liability provided by State law, including but not limited to the immunities established by Government Code sections 831.4 and 831.8, shall remain intact for both the District and the City. The Licenses will not authorize or allow the City to undertake or allow any activities on, or physical modifications to, the Channels or Right-of-Ways without the District's prior determination that the City's use would not interfere with the District's operation, maintenance or use of the Channels or Right-of-Ways for any of the District's purposes allowed by the District's enabling act or California Irrigation District Law. The District will have the sole discretion to determine whether activities or physical modifications proposed by the City will interfere with District operations, but may not unreasonably withhold consent to the City's use of the Licenses. The process the District will use to exercise this discretion will be set forth in the Operations Agreement, which is described in Section (C)(4) of this Agreement. The Licenses will be personal and

nontransferable. The Licenses will be revocable only for the reasons described in the Operations Agreement. The Licenses will terminate at the end of the term described in Section (A)(3) of this Agreement.

3. Term of Licenses

The term of the Licenses will begin on the effective date of this Agreement and will end on the same day as the end of the term of the long-term contract the District has with the U.S. Bureau of Reclamation (Contract No. 175r-2485-LTR1) for purchase of water from the Central Valley Project.

B. City Obligations

1. Reimbursement for Operations and Maintenance Expenses

The City will reimburse the District and the Company for the District's and the Company's costs associated with the City's use of the Licenses. The mechanism for determining the amount of reimbursement owed to the District and the Company will be formulated in the Operations Agreement, which is described in Section (C)(4) of this Agreement. The mechanism for determining the amount of reimbursement will also take into consideration the status of the District-Kaweah Delta WCD Agreement in its reimbursement provisions related to the City's use of the licenses pertaining to the Main Intake Canal.

2. Indemnification for Claims Arising Out of Licenses Granted to City

The City will indemnify, hold harmless and defend the District and the Company, and each of their partners, attorneys, agents, employees, predecessors, assigns, whether of parent, subsidiary or affiliate corporations or partnerships, specifically including the Company, from and against all claims (including third party claims), demands, liabilities, costs and expenses, including without limitation civil penalties, attorney fees and costs, and damages of whatever kind or nature, on account of or in any way associated with the City's use of the Licenses. This obligation will not apply to claims, demands, liabilities, costs and expenses, civil penalties, attorney fees and costs, or damages that arise solely from the negligence or willful misconduct of the District or the Company, their partners, attorneys, agents, employees, predecessors, or assigns.

3. Use of Licenses

The City will not use the Licenses in any way that interferes with the District's

or the Company's use of the Channels or Right-of-Ways, or with other District purposes allowed by the District's enabling act or California Irrigation District Law. The City will not authorize access or use of the properties governed by the Licenses before obtaining the consent of the District. The City will not undertake or allow any activity or physical modification on the properties governed by the Licenses before obtaining the consent of the District. If the District authorizes a proposed use of the Licenses, then the City need not obtain subsequent approval for each particular activity falling within the scope of that use. The process for classifying activities or physical modifications permitted by the Licenses, for determining the person(s) or entity(ies) permitted access to the properties governed by the Licenses, and for District authorization of the City's use of the Licenses, will be specifically created by the Operations Agreement, which is described in Section (C)(4) of this Agreement. The City will be responsible for ensuring that the uses of the Licenses comply with all applicable laws.

C. Obligations of Both Parties

1. License Documents

The parties agree to jointly prepare documents describing the grant of the Licenses. The parties will use their best efforts to ensure that these documents are prepared in a form suitable for recording no later than ninety (90) days following execution of this Agreement.

2. Recharge Facility (ies)

The parties will, at the City's discretion, construct a facility or facilities for groundwater recharge and storm water management ("Recharge Facility (ies)") assuming a suitable location can be found for the Recharge Facility (ies) and subject to the conditions set forth below. The parties agree that the Operations Committee, which is described in Section (C)(4)(b) of this Agreement, will determine the design and location of the Recharge Facility(ies) and will estimate the cost to design, acquire, and construct the Recharge Facility(ies) ("Construction Costs"). The District will contribute fifty (50) percent of the Construction Costs; in no event, however, will the District's contribution to the Construction Costs exceed one hundred thousand dollars ($100,000). The City will serve as the Lead Agency for purposes of approving construction, acquisition and operation of the Recharge Facility (ies). The operations

and maintenance costs for the Recharge Facility(ies) will be apportioned between the District and the City by specific provisions of the Operations Agreement, which is described in Section (C)(4) of this Agreement.

3. Cameron Creek Check Structures

The parties will, at the City's discretion, design and construct an undetermined number of barriers in Cameron Creek for the purpose of increasing groundwater recharge ("Check Structures"), assuming a suitable location can be found for the Check Structures and subject to the conditions set forth below. The Operations Committee will determine the design and location of the Check Structures. The City will serve as the Lead Agency for purposes of construction and operation of the Check Structures. The District will construct, or cause the construction, of the Check Structures and will be responsible for ongoing operations and maintenance. The City will reimburse the District for the entire cost of constructing the Check Structures. The District will be responsible, at its expense, for the cost of maintenance and repair of the Check Structures.

4. Operations Agreement

The District and the City will use their best efforts to enter into the Operations Agreement within one hundred and eight (180) days of the execution of this Agreement. The Operations Agreement will govern the obligations of the parties articulated in this Agreement but not in a manner inconsistent with this Agreement. The Operations Agreement will consist of specific terms addressing the following:

a. District Powers

The Operations Agreement will provide that the District has the sole power to: (1) review, modify, approve, or disapprove uses of the Licenses proposed by the City, provided that the District's determinations as to such proposed uses will be based solely on whether the use will interfere with the District's use of the Channels or Right-of-Ways, or with other District purposes allowed by the District's enabling act or California Irrigation District Law, and that the District will not unreasonably withhold its consent to the City's use of the Licenses; and (2) determine surplus conveyance capacity in the Channels available for use by the City under the Licenses. The Operations Agreement will provide a process by which the District may require that the City modify or terminate a particular use where that use has interfered with, and is

likely to continue interfering with, the District's use of the Channels or Right-of-Ways, or with other District purposes allowed by the District's enabling act or the California Irrigation District Law.

b. Terms

The Operations Agreement will (1) create a process the District will use to exercise these powers, which process will involve a mechanism ensuring meaningful consultation with the City; (2) identify, to the extent feasible, the kinds of activities and physical modifications that would interfere with the District's use of the Channels or Right-of-Ways; (3) describe, to the extent feasible, the conditions affecting conveyance capacity of the Channels; (4) establish, to the extent feasible, the conditions under which the District could seek to terminate or modify a previously approved use that has interfered with, and is likely to continue interfering with, the District's use of the Channels or Right-of-Ways; and (5) set forth the parties' remedies for breach of the parties' obligations under this Agreement or the Licenses, including the circumstances under which the Licenses would be revocable.

c. Operations Committee

The Operations Agreement will provide for the creation of an Operations Committee comprised of representatives from the District and representatives from the City. At least one representative from the City and the District shall be a member of their respective governing boards. The Operations Committee may include other members by mutual agreement of the City and the District.

d. Powers and Duties of Operations Committee

The Operations Agreement will define the various powers and duties of the Operations Committee and the process for exercising those powers and duties, including but not limited to the following:

i. Cost Allocation for License Uses

Provide that the Operations Committee has the power to determine the amount(s) the City is required to reimburse the District and the Company for operations and maintenance costs associated with the uses proposed and implemented by the City pursuant to the Licenses.

ii. Location and Design of Cameron Creek Check Structures

Provide that the Operations Committee has the responsibility to determine the location and design of the Check Structures, provided that the location and design chosen will be beneficial to both the District and the City.

iii. Location and Design of Recharge Facility (ies)

Provide that the Operations Committee has the responsibility to determine the location and design of the Recharge Facility(ies), provided that the location and design chosen will be near one or more of the Channels and jointly beneficial to the District and the City.

iv. Operations Committee Processes

The Operations Agreement will create and specify the processes the Operations Committee will use to fulfill the responsibilities set forth in this section (C)(4).

5. Purchase of Surface Water from the District

The parties will meet and confer regarding the potential for the City or its franchisee through the City to purchase surface water from the District. The parties recognize the importance of continuing the importation of surface water from outside the District into the region as a means to prevent groundwater overdraft, that increasing cost of these imported water supplies raises doubts about the feasibility of their use for agricultural irrigation, and that future growth in the City will create additional demands for a stable, long-term municipal water supply. The parties acknowledge that the Agreement to discuss the City's purchase of surface water from the District does not imply any commitment by the District to modify sales of water from any source to customers for agricultural irrigation.

D. Condition Precedent

The terms and conditions of this Agreement are conditioned upon the execution of the agreement between the City and Kaweah Delta WCD referenced in recital L above and the adoption of a connection fee by the City required by such agreement.

E. General Provisions

1. Representations and Warranties of Authority

Each party represents to all other parties that such party has the full power and

authority to enter into this Agreement, that the execution and delivery thereof will not violate any agreement to which such party is a party or by which such party is bound, and that this Agreement, as executed and delivered, constitutes a valid and binding obligation of such party, enforceable in accordance with its terms. The corporate, partnership, and association signatories to this Agreement expressly warrant that they have been authorized by their respective company, partnership, or association entities to execute this Agreement and to bind them to the terms and provisions hereof. Any public agency signatory to this Agreement represents and warrants that the Agreement is executed in compliance with a resolution of the governing entity of the public agency, duly adopted by the governing entity and transcribed in full in the minutes of the governing entity. Any individual signing this Agreement on behalf of a public agency represents that she/he has full authority to do so.

2. Duty to Cooperate

Each party shall cooperate so as to facilitate the other party's efforts to carry out its obligations under this Agreement.

3. Successors and Transferees

The obligations and benefits of this Agreement do not run with the land, and are personal to the City and the District and are not assignable or transferable.

4. Entire Agreement

This Agreement constitutes the entire agreement between the parties, and it is expressly understood and agreed that the Agreement has been freely and voluntarily entered into by the parties with the advice of counsel, who have explained the legal effect of this Agreement. The terms of this Agreement are contractual and not mere recitals. The parties further acknowledge that no warranties, representations or inducements not contained in this Agreement have been made on any subject in connection with this Agreement, and that they have not been induced to execute this Agreement by reason of non-disclosure or suppression of any fact. This Agreement may not be altered, modified or otherwise changed in any respect except by writing, duly executed by the parties or their authorized representatives. This Agreement is fully integrated.

5. Construction

The parties acknowledge that each party and its counsel have reviewed and

revised this Agreement and that no rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall be employed in the interpretation of this Agreement.

6. Severability

In the event any of the terms, conditions or covenants contained in this Agreement is held to be invalid, any such invalidity shall not affect any other terms, conditions or covenants contained herein which shall remain in full force and effect.

7. Governing Law

California law shall govern the interpretation and enforcement of this Agreement.

8. Remedies

Any motion or other action by the parties to enforce this Agreement shall be filed or otherwise brought and adjudicated in the Tulare County Superior Court. The Tulare County Superior Court shall maintain and reserve jurisdiction of this action for the purpose of enforcing the terms of this Agreement as a judgment or order of the Court. Nothing this paragraph shall be interpreted in a manner to preclude whatever rights the parties may have to appeal rulings of the Tulare County Superior Court. The parties otherwise retain the full range of legal and equitable remedies to enforce the terms of this Agreement, including injunctive relief and specific performance, to ensure the parties comply with their commitments under this Agreement. In any action to enforce this Agreement, each party shall be responsible for its own attorneys' fees and costs. The parties shall meet and confer and attempt to resolve their differences informally before commencing any action to enforce this Agreement.

9. Further Assurances

In addition to the documents and instruments to be delivered as herein provided, each of the parties shall, from time to time at the request of the other parties, execute and deliver to the other parties such other instruments of transfer, conveyance and assignment and shall take such other action as may be required to more effectively carry out the terms of this Agreement.

10. Time of the Essence

Time is expressly declared to be of the essence of this Agreement and of every

provision hereof in which time is an element.

11. Captions

Paragraph titles or captions contained herein are inserted as a matter of convenience and for reference, and in no way define, limit, extend or describe the scope of this Agreement or any provision thereof.

12. Notices

Where required by this Agreement, notice shall be provided by regular mail or overnight delivery, and shall be considered made when deposited in U.S. or express mail.

13. Counterparts

The parties may execute this agreement in counterparts. The counterparts, if any, constitute a single agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement to be effective as of the date and year last below written.

Date: September 26, 2001

City of Visalia

By: _____
Name: Steve Salomon
Title: City Manager

Attested by: _____
Deputy City Clerk

Date: September 11, 2001

Tulare Irrigation District

By: _____
Name: David G. Bixler
President, Board of Directors

By: _____
Name: Gerald C. Hill, Jr.
Title: General Manager

Approved as to form and content.

Date: September 13, 2000

Kimble, MacMichael & Upton

By: _____
Name: Tyler Tharpe
Kimble, MacMichael & Upton

Date: September 19, 2000

City of Visalia

By: _____
Name: Daniel M. Dooley
Dooley and Herr, LLP

F:\Client Files\Visalia, City of, 700\702-00 PUBLIC WORKS
\702-08 Vs. Tulare Irrigation District\TID agreement.doc

ATTACHMENT 3 – WORK PLAN

APPENDIX B

HEC-RAS Model Reconnaissance Study on Packwood Creek

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

WATER & WASTEWATER
MUNICIPAL INFRASTRUCTURE
LAND DEVELOPMENT
AGRICULTURE SERVICES
DAIRY SERVICES
LAND SURVEYING & GIS
PLANNING & ENVIRONMENTAL
DISTRICT MANAGEMENT

FRESNO • CLOVIS • VISALIA • BAKERSFIELD

2505 Alluvial Avenue
Clovis, CA 93611-9166
(559) 326-1100 • FAX (559) 326-1090
www.ppeng.com

MEMORANDUM

To: Larry Dotson, PE

From: Richard Moss, PE, Randy Hopkins, PE

Subject: Packwood and Cameron Creeks Pool and Basin Reconnaissance Study

Date: August 10, 2010

BACKGROUND

The Kaweah Delta Water Conservation District (KDWCD) is working with the City of Visalia, CalWater and Tulare Irrigation District to develop a groundwater recharge program in the Visalia region. As part of this effort the agencies are considering using Packwood and Cameron creeks to convey water from the Kaweah or St. Johns rivers (originating from either the Kaweah River or CVP Friant-Kern Canal) to one or more basins for groundwater recharge. In-channel check structures could also be used to store water in the creeks to increase recharge.

A hydraulics and capacity analysis was previously performed on both Packwood and Cameron creeks along their alignments near and through the City of Visalia. A HEC-RAS model was developed for each creek to determine anticipated water surface elevations at various flow rates. In conjunction with the HEC-RAS models, profiles of each creek were developed to show potential capacity and freeboard issues at various flow rates.

PURPOSE AND SCOPE

KDWCD and the City of Visalia are considering the use of these two creeks for groundwater recharge and/or conveying surface water to recharge basins located along the creek alignments. By using existing check structures or constructing new ones at strategic locations along the creeks, pools could be developed to temporarily store water and to allow it to percolate into the aquifer or to allow the water to be diverted into adjacent basins for recharge.

A pool capacity analysis was performed for several pool alternatives along each creek alignment. Potential pool locations were identified that maximize the pool depth and length of pool upstream of the check structure. For each pool alternative, a conceptual opinion of probable construction cost was developed to weigh the cost and benefit of each pool alternative. The data used for the analysis was based on work developed from the previous hydraulic capacity analysis. In addition, existing and new basins were considered for recharge outside of the creek channels, and estimates of recharge capacity were determined.

ANALYSES

The analyses utilized the profiles developed from the previous topographic survey and HEC-RAS modeling. In addition, all estimates of recharge rates assume, for the limited purposes of this study, a continuous percolation rate of one-half foot per day and that all percolation occurs at the floor of the channel or basin, not on the embankments. This percolation rate is only an estimate to provide a sense of relative benefits between alternatives studied and should not be used for any other purpose until verified through actual field tests and studies. The pools, check structures, and recharge basins considered for this study along each creek are shown in the attached creek plan and profile drawings.

Pool Location Selection

The portions of each creek modeled in HEC-RAS were reviewed for suitability for water storage pools. Check structures were assumed to be required to create the pools. For the purposes of this study, "check structures" could refer to new concrete structures, existing concrete structures, temporary earthen dams, or existing bridges or culverts with new or existing board guides. It was assumed that the check structures should be located in areas easily accessed by District or City staff for operations and maintenance purposes. Other considerations for locating the check structures were the available channel freeboard, high water levels determined from the HEC-RAS model, depth of channel upstream of the potential check structure and the proximity of the site to provide benefits to the City's groundwater.

To determine estimated pool volumes, channel cross sections from the HEC-RAS model were reviewed along with pool water surface elevations. Pool water surface elevations were selected to maintain at least one-foot of freeboard (when possible) in the channel. Channel cross-sectional areas were estimated every 1,000 feet along each pool, with most pools being approximately 6,000 to 8,000 feet long.

Seven potential pools were identified for Packwood Creek and four were identified for Cameron Creek. See the attached pool volume calculations for each creek. The pools identified in this study are summarized in the tables below:

Packwood Creek Pool Summary

Location of Check (station)	*Type of Check*	*Pool Water Surface Elev. (feet)*	*Length of Pool (feet)*	*Volume of Pool (acre-feet)*	*Est. Potential Monthly Recharge (acre-feet)*
6+00	(E) Check	306	6,400	11.9	37
56+00	(E) Check	313	8,300	19.0	34
143+00	New Check of Earthen Dam	321	5,200	7.7	20

208+00	New Check or Earthen Dam	330	7,500	13.2	27
280+00	New Check or Earthen Dam	336	5,500	9.7	20
300+00	New Check or Earthen Dam	340	7,000	15.2	24
376+00	New Check or Earthen Dam	348	6,500	15.0	26

Cameron Creek Pool Summary

Location of Check (station)	*Type of Check*	*Pool Water Surface Elev. (feet)*	*Length of Pool (feet)*	*Volume of Pool (acre-feet)*	*Est. Potential Monthly Recharge (acre-feet)*
142+00	New Check or Earthen Dam	328.5	3,800	5.8	21
203+00	New Check or Earthen Dam	336	6,900	11.3	50
280+00	New Check or Earthen Dam	344	7,000	12.2	44
325+00	New Check or Earthen Dam	349	4,500	13.1	24

Basin Location Selection

In addition to utilizing pools within the creek channels, basins near the creeks were also considered for recharge. A check structure would again be required to back water up to be diverted into conveyance facilities leading to the basins. Several existing basins (shown in light blue) along the Packwood Creek alignment that may be utilized for recharge, while it appears Cameron Creek has no existing adjacent basins. For purposes of estimating costs, it was assumed that a new connection facility between a creek and basin would be required, even if there is an existing connection facility, due to capacity limitations or original intended use. Several existing basins currently used as parks (shown in green) within the City of Visalia are either adjacent to or near Packwood Creek. However, these were not considered for recharge in all cases because of their current use as parks.

Packwood Creek Basin Summary

Location of Basin (station)	*Type (Name) of Basin*	*Approx. Basin Size (acres)*	*Est. Potential Monthly Recharge (acre-feet)*
56+00	Existing ("Police Station Basin")	7.2	110
71+00	Existing ("Food-4-Less" or "State" Basin)	1.4	20
106+00	New ("Stonebrook Park")	5	75
208+00	New	Up to 17	Up to 255
280+00	Existing basin/orchard	14	210
320+00	Existing ("Dooley Basin")	5.7	85
380+00	Existing/New (including "Blain Basin")	7.5 (existing) up to 100	110 up to 1,400
440+00	Existing ("Oaks Basin")	28	Up to 420

Cameron Creek Basin Summary

Location of Basin (station)	*Type (Name) of Basin*	*Approx. Basin Size (acres)*	*Est. Potential Monthly Recharge (acre-feet)*
325+00	New	Up to 80	Up to 1,200

For the purposes of this study, it was assumed new basins would only be constructed on undeveloped land of "significant" size.

<u>Packwood Creek</u>

There is a storm drain line that leads from the Stonebrook Park drainage facilities to Packwood Creek. It should be fairly easy to tie into this line and divert water from Packwood Creek into Stonebrook Park. The park would need to be reconfigured to allow a significant portion of the park to be flooded in the summertime. Clearly an effort would need to be made to mitigate the loss of park land. Some mitigation could be as park improvements incorporating the regular presence of water as an added park feature.

The new potential Packwood Creek basin at station 208+00 listed above is located on a large parcel near an existing mobile home park and railroad tracks which was previously a site of an olive processing plan. The owner of this parcel already has plans to develop this property but may be willing to consider a sale alternative in this down development economy. He has not been contacted.

The potential to expand the existing Blain Basins up to 100 acres has greater potential given the City of Visalia already owns this property. It is slated to be developed into a regional sports park, but given its prime location from a groundwater recharge standpoint, consideration should be given to using it as a recharge site, at least for interim use. It is also well located for potential use for storm water layoff for either Packwood Creek or Mill Creek.

Cameron Creek

Data from the topographic survey indicates that Cameron Creek is shallower than Packwood Creek, often making it more difficult to form a pool of significant volume using a check structure. However, the portion of Cameron Creek considered for this study is primarily within rural agricultural areas, allowing flexibility in selecting locations for siting and sizing recharge basins. Ideally, the connection facility between the creek and any recharge basin would be immediately upstream of a check structure to maximize water depth in the basin. General areas to consider recharge basins along Cameron Creek include immediately east of Lovers Lane to near station 330+00 just downstream of the creek's headgate. Those areas would also allow for deeper pools when backed up with a new check structure.

A new basin location was selected near a new check structure (near station 325+00) that would put the additional recharge site in good proximity to the City's current urban boundary. No contact with the current landowner has been made.

SUMMARY

Based on the available data and information, conceptual opinions of construction costs were developed for each check structure and pool option considered in this study (see the attached cost breakdowns for further details). A summary of pool improvement alternatives are shown in the tables below for each creek.

Packwood Creek Pool Costs

Location of Check (station)	*Volume of Pool (acre-feet)*	*Est. Check & Pool Improvement Costs (Permanent)*	*Est. Check & Pool Improvement Costs (Temporary)*
6+00	11.9	$3,000	n/a
56+00	19.0	$3,000	n/a
143+00	7.7	$58,000	$25,000
208+00	13.2	$187,000	$24,000
280+00	9.7	$203,000	$24,000
300+00	15.2	$178,000	$18,000
376+00	15.0	$173,000	$10,000

Cameron Creek Pool Costs

Location of Check (station)	*Volume of Pool (acre-feet)*	*Est. Check & Pool Improvement Costs (Permanent)*	*Est. Check & Pool Improvement Costs (Temporary)*
142+00	5.8	$9,000	n/a
208+00	11.3	$55,000	$22,000
280+00	12.2	$48,000	$14,000
325+00	13.1	$145,000	$7,000

"Permanent" check and pool improvements include the construction of a permanent standalone concrete check structure with provisions for board guides. "Temporary" check and pool improvements include the construction of an earthen dam with a corrugated metal pipe (CMP) water control structure located within the dam. This control structure would likely consist of a large diameter CMP vertical riser half pipe with board guides, with a horizontal outlet pipe that would have the capability to convey nominal creeks flows without removing the dam. An example of such a structure is shown in **Figure 1** below.

Figure 1 – CMP Half Pipe Structure

In addition, it is estimated that most tie-in facilities used for connecting a creek to an adjacent basin would likely have construction costs in the range of $100,000 to $150,000, depending on size and capacity requirements.

NEXT STEPS

Additional work to further investigate the feasibility of creek and/or basin recharge activities includes:

- Performing geotechnical, insitu seepage, and/or flow measurement tests to verify the percolation rates within the creek channels and basins considered in this study in order to refine estimates of the amount of potential recharge capacity of the creeks and basins considered in this study;

- Refine construction estimates for check structures and basin tie-ins and prioritize projects to pursue and construct.

Additional topics to be explored include the need to meet the future conveyance demands of Tulare Irrigation District for these creeks and to assist the City of Visalia in utilizing these creeks as storm water control facilities:

- Reviewing how these creeks can best be used to allow Tulare Irrigation District to meet their future conveyance demands and identify necessary improvements. Some of this is expected to be accomplished as part of the Tulare Irrigation District's System Optimization Review Study currently underway;

- Reviewing how these creeks can best be integrated in the City of Visalia's storm water master plan.

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

Kaweah Delta Water Conservation District
Packwood and Cameron Creeks Reconaissance Study
Creek Pool Volume Estimates

JOB #: 1225 0901
COMP. BY: ASC
CHKD. BY:
DATE: 8/11/2010

Packwood Creek						
Check Sta:	**6+00**					
	Water surface elev:		306	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	639	300	184			
	1,000	300.4	185	73696	1.7	
	2,000	300.6	105	145174	3.3	
	3,000	301.4	106	105788	2.4	
	4,000	302.5	69	87349	2.0	
	5,000	303	58	63500	1.5	
	6,000	304.8	15	36783	0.8	
End	7,000			7548	0.2	
			Total	519838	**11.9**	
Check Sta:	**56+00**					
	Water surface elev:		313	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	5,500	304.3	353			
	6,000	304.8	230	116518	2.7	
	7,000	305.8	177	203517	4.7	
	8,000	306.7	146	161615	3.7	
	9,000	307.6	102	124153	2.9	
	10,000	308.9	74	88164	2.0	
	11,000	309.8	49	61541	1.4	
	12,000	310.5	29	39159	0.9	
	13,000	311.4	21	24979	0.6	
End	13,800			8278	0.2	
			Total	827924	**19.0**	
Check Sta:	**143+00**					
	Water surface elev:		321	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	14,500	314.3	120			
	15,000	315.6	105	78830	1.8	
	16,000	317.3	93	98950	2.3	
	17,000	316.9	77	85139	2.0	
	18,000	318.9	25	51204	1.2	
	19,000	320.1	12	18341	0.4	
End	19,700			4089	0.1	
			Total	336553	**7.7**	

PROVOST & PRITCHARD
EST. 1969
CONSULTING GROUP
An Employee Owned Company

Kaweah Delta Water Conservation District
Packwood and Cameron Creeks Reconaissance Study

Creek Pool Volume Estimates

JOB #: 1225 0901
COMP. BY: ASC
CHKD. BY:
DATE: 8/11/2010

Check Sta:	**208+00**					
	Water surface elev:		330	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	20,501	321.65	194			
	21,000	322	199	39375	0.9	
	22,000	322.5	157	178374	4.1	
	23,000	324.1	129	143137	3.3	
	24,000	326.5	49	89144	2.0	
	25,000	327	46	47666	1.1	
	26,000	328.3	40	42753	1.0	
	27,000	328.9	15	27092	0.6	
End	28,000			7304	0.2	
			Total	574844	**13.2**	
Check Sta:	**280+00**					
	Water surface elev:		336	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	28,000	330	164			
	29,000	330.4	135	149779	3.4	
	30,000	331.4	91	112817	2.6	
	31,000	331.8	65	77803	1.8	
	32,000	332.6	44	54743	1.3	
	33,000	335.3	7	25644	0.6	
End	33,500			1725	0.0	
			Total	422512	**9.7**	
Check Sta:	**300+00**					
	Water surface elev:		340	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	30,000	331.45	234			
	31,000	331.8	187	210886	4.8	
	32,000	332.6	151	169217	3.9	
	33,000	335.3	81	116098	2.7	
	34,000	337.1	56	68685	1.6	
	35,000	337.65	42	48915	1.1	
	36,000	337.95	26	33974	0.8	
End	37,000			13217	0.3	
			Total	660992	**15.2**	

PROVOST & PRITCHARD CONSULTING GROUP
EST. 1969
An Employee Owned Company

Kaweah Delta Water Conservation District
Packwood and Cameron Creeks Reconaissance Study

Creek Pool Volume Estimates

JOB #: 1225 0901
COMP. BY: ASC
CHKD. BY:
DATE: 8/11/2010

Check Sta:	**376+00**					
	Water surface elev:		348	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	37,501	340	182			
	38,000	340.75	244	106404	2.4	
	39,000	341.75	147	195585	4.5	
	40,000	342.5	119	133179	3.1	
	41,000	342.3	87	103253	2.4	
	42,000	344.75	43	65250	1.5	
	43,000	345.55	26	34887	0.8	
End	44,000			13242	0.3	
			Total	651799	**15.0**	
Cameron Creek						
Check Sta:	**142+00**					
	Water surface elev:		328.5	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	14,000	321.5	191			
	15,000	324.2	87	111219	2.6	
	16,000	325.9	60	73349	1.7	
	17,000	326.8	40	49903	1.1	
End	17,800			16065	0.4	
			Total	250536	**5.8**	
Check Sta:	**203+00**					
	Water surface elev:		336	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	20,000	330.1	178			
	21,000	331.6	140	111121	2.6	
	22,000	332	108	123661	2.8	
	23,000	333	59	83230	1.9	
	24,000	334	66	62625	1.4	
	25,000	334.1	48	57106	1.3	
	26,000	334.6	32	39763	0.9	
End	26,900			14266	0.3	
			Total	491773	**11.3**	

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

Kaweah Delta Water Conservation District
Packwood and Cameron Creeks Reconaissance Study

Creek Pool Volume Estimates

JOB #: 1225 0901
COMP. BY: ASC
CHKD. BY:
DATE: 8/11/2010

Check Sta:	**280+00**					
	Water surface elev:		344	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	28,037	337.5	233			
	28,993	339.14	151	183808	4.2	
	30,000	339.9	103	128243	2.9	
	31,000	340.05	70	86611	2.0	
	32,000	341.55	51	60232	1.4	
	33,000	342.2	36	43139	1.0	
	34,000	343.5	10	22689	0.5	
End	35,000			4914	0.1	
			Total	529635	**12.2**	
Check Sta:	**325+00**					
	Water surface elev:		349	ft		
	Sta	**Floor Elev**	**Area**	**Volume (CF)**	**Volume (AF)**	
	32,335	341.2	228			
	33,000	342.2	199	141926	3.3	
	34,000	343.5	156	177517	4.1	
	35,000	343.9	126	140950	3.2	
	36,000	346.4	50	87839	2.0	
End	36,854			21399	0.5	
			Total	569630	**13.1**	

PROVOST & PRITCHARD CONSULTING GROUP

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

KAWEAH DELTA WATER CONSERVATION DISTRICT
PACKWOOD AND CAMERON CREEKS RECONAISSANCE STUDY
PACKWOOD CREEK CHECK STRUCTURES AND POND INTERTIES
8/10/2010

CONCEPTUAL

Item No.	Item Description	Estimated Quantity	Unit	Unit Price	Amount
Station 6+00 Check Improvements (11.9 AF)					
1	Raise left bank to maintain freeboard (150 LF)	200	CY	$15	$3,000
				Total	$3,000
Station 56+00 Check Improvements (19.0 AF)					
2	Raise both banks to maintain freeboard (100 LF)	200	CY	$15	$3,000
				Total	$3,000
Station 143+00 (West St.) Check Improvements (7.7 AF)					
	Earth Dam Option				
3	Raise both banks to maintain freeboard (600 LF)	1,200	CY	$15	$18,000
4	Construct earth dam (include overexcavation and scarification)	50	CY	$30	$1,500
5	Construct half pipe CMP riser	1	LS	$5,000	$5,000
				Total	$25,000
	Check Structure Option				
6	Raise both banks to maintain freeboard (600 LF)	1,200	CY	$15	$18,000
7	Modify West Street culvert with board guides	1	LS	$40,000	$40,000
				Total	$58,000
Station 208+00 Check Improvements (13.2 AF)					
	Earth Dam Option				
8	Raise right bank to maintain freeboard (600 LF)	1,100	CY	$15	$16,500
9	Construct earth dam (include overexcavation and scarification)	70	CY	$30	$2,100
10	Construct half pipe CMP riser	1	LS	$5,000	$5,000
				Total	$24,000
	Check Structure Option				
11	Raise right bank to maintain freeboard (600 LF)	1,100	CY	$15	$16,500
12	Construct new check structure (no gates)	1	LS	$150,000	$150,000
13	Channel improvements around structure (lining, rip rap, etc.)	1	LS	$20,000	$20,000
				Total	$187,000
	Optional for Basin Recharge				
14	Construct tie-in to proposed basin south of creek	1	LS	$110,000	$110,000

PROVOST& PRITCHARD CONSULTING GROUP

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

KAWEAH DELTA WATER CONSERVATION DISTRICT
PACKWOOD AND CAMERON CREEKS RECONAISSANCE STUDY
PACKWOOD CREEK CHECK STRUCTURES AND POND INTERTIES
8/10/2010

CONCEPTUAL

Item No.	Item Description	Estimated Quantity	Unit	Unit Price	Amount
Station 280+00 Check Improvements (9.7 AF)					
	Earth Dam Option				
15	Raise right bank to maintain freeboard (600 LF)	1,100	CY	$15	$16,500
16	Construct earth dam (include overexcavation and scarification)	70	CY	$30	$2,100
17	Construct half pipe CMP riser	1	LS	$5,000	$5,000
				Total	$24,000
	Check Structure Option				
18	Raise right bank to maintain freeboard (1100 LF)	2,200	CY	$15	$33,000
19	Construct new check structure (no gates)	1	LS	$150,000	$150,000
20	Channel improvements around structure (lining, rip rap, etc.)	1	LS	$20,000	$20,000
				Total	$203,000
	Optional for Basin Recharge				
21	Construct tie-in to existing orchard/basin east of creek	1	LS	$110,000	$110,000
Station 300+00 Check Improvements (15.2 AF)					
	Earth Dam Option				
22	Raise both banks to maintain freeboard (450 LF)	700	CY	$15	$10,500
23	Construct earth dam (include overexcavation and scarification)	70	CY	$30	$2,100
24	Construct half pipe CMP riser	1	LS	$5,000	$5,000
				Total	$18,000
	Check Structure Option				
25	Raise left bank to maintain freeboard (450 LF)	500	CY	$15	$7,500
26	Construct new check structure (no gates)	1	LS	$150,000	$150,000
27	Channel improvements around structure (lining, rip rap, etc.)	1	LS	$20,000	$20,000
				Total	$178,000

PROVOST & PRITCHARD CONSULTING GROUP

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

KAWEAH DELTA WATER CONSERVATION DISTRICT
PACKWOOD AND CAMERON CREEKS RECONAISSANCE STUDY
PACKWOOD CREEK CHECK STRUCTURES AND POND INTERTIES
8/10/2010

CONCEPTUAL

Item No.	Item Description	Estimated Quantity	Unit	Unit Price	Amount
Station 376+00 Check Improvements (15.0 AF)					
	Earth Dam Option				
28	Raise both banks to maintain freeboard (150 LF)	200	CY	$15	$3,000
29	Construct earth dam (include overexcavation and scarification)	70	CY	$30	$2,100
30	Construct half pipe CMP riser	1	LS	$5,000	$5,000
				Total	$10,000
	Check Structure Option				
31	Raise both banks to maintain freeboard (150 LF)	200	CY	$15	$3,000
32	Construct new check structure (no gates)	1	LS	$150,000	$150,000
33	Channel improvements around structure (lining, rip rap, etc.)	1	LS	$20,000	$20,000
				Total	$173,000
	Optional for Basin Recharge				
34	Construct tie-in to existing basin north of creek	1	LS	$110,000	$110,000
35	Construct tie-in to existing basin south of creek	1	LS	$110,000	$110,000
36	Construct tie-in to proposed basins north of creek	1	LS	$110,000	$110,000
37	Construct tie-in to proposed basins south of creek	1	LS	$110,000	$110,000
				Total	$440,000

NOTE(S):

Excludes mobilization/demobilization, bonds, insurance, etc.

Excludes costs for proposed basin construction.

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

KAWEAH DELTA WATER CONSERVATION DISTRICT
PACKWOOD AND CAMERON CREEKS RECONAISSANCE STUDY
CAMERON CREEK CHECK STRUCTURES AND POND INTERTIES
8/10/2010

CONCEPTUAL

Item No.	Item Description	Estimated Quantity	Unit	Unit Price	Amount
Station 142+00 Check Improvements (5.8 AF)					
1	Raise left bank to maintain freeboard (500 LF)	600	CY	$15	$9,000
				Total	$9,000
Station 208+00 Check Improvements (11.3 AF)					
	Earth Dam Option				
2	Raise both banks to maintain freeboard (800 LF)	1,000	CY	$15	$15,000
3	Construct earth dam (include overexcavation and scarification)	50	CY	$30	$1,500
4	Construct half pipe CMP riser	1	LS	$5,000	$5,000
				Total	$22,000
	Check Structure Option				
5	Raise banks to maintain freeboard (800 LF)	1,000	CY	$15	$15,000
6	Modify Lovers Lane culvert with board guides	1	LS	$40,000	$40,000
				Total	$55,000
Station 280+00 Check Improvements (12.2 AF)					
	Earth Dam Option				
7	Raise right bank to maintain freeboard (600 LF)	500	CY	$15	$7,500
8	Construct earth dam (include overexcavation and scarification)	50	CY	$30	$1,500
9	Construct half pipe CMP riser	1	LS	$5,000	$5,000
				Total	$14,000
	Check Structure Option				
10	Raise right bank to maintain freeboard (600 LF)	500	CY	$15	$7,500
11	Modify Road 148 culvert with board guides	1	LS	$40,000	$40,000
				Total	$48,000

PROVOST & PRITCHARD CONSULTING GROUP

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

KAWEAH DELTA WATER CONSERVATION DISTRICT
PACKWOOD AND CAMERON CREEKS RECONAISSANCE STUDY
CAMERON CREEK CHECK STRUCTURES AND POND INTERTIES
8/10/2010

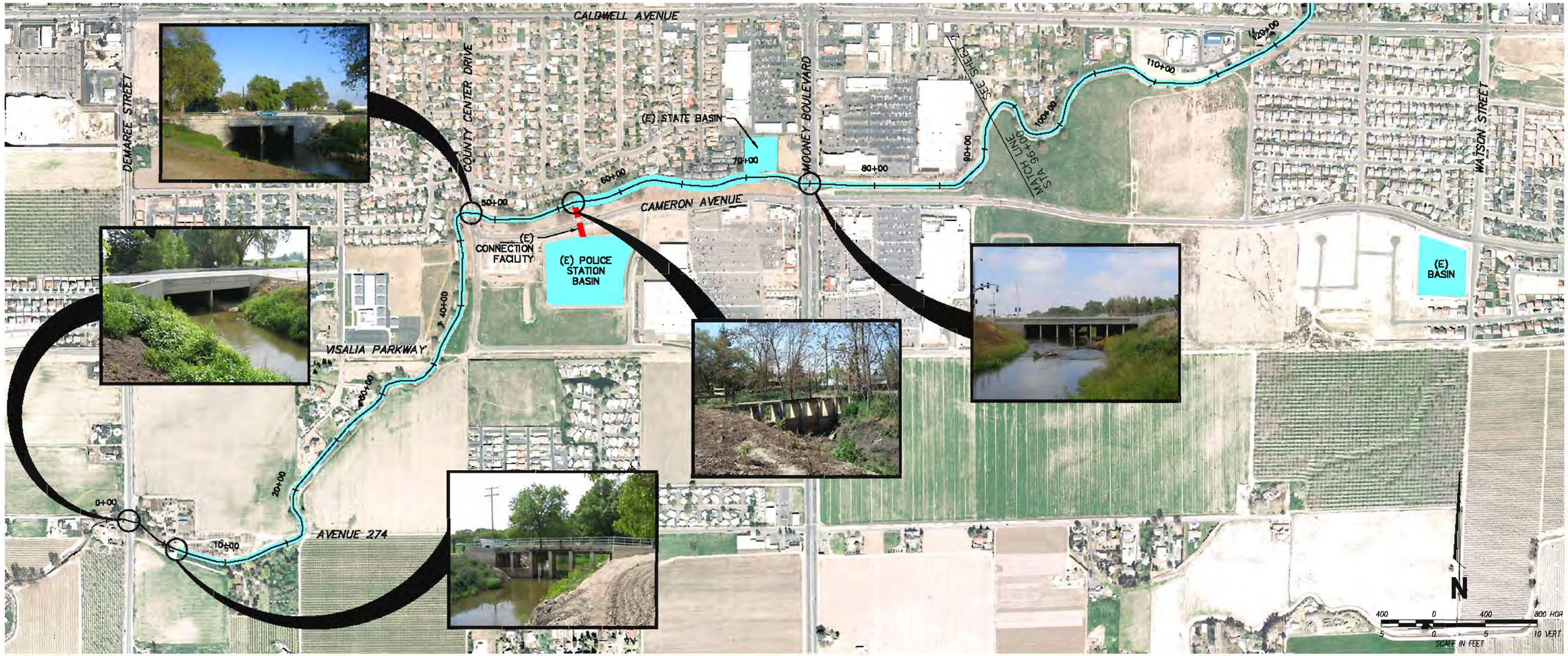
CONCEPTUAL

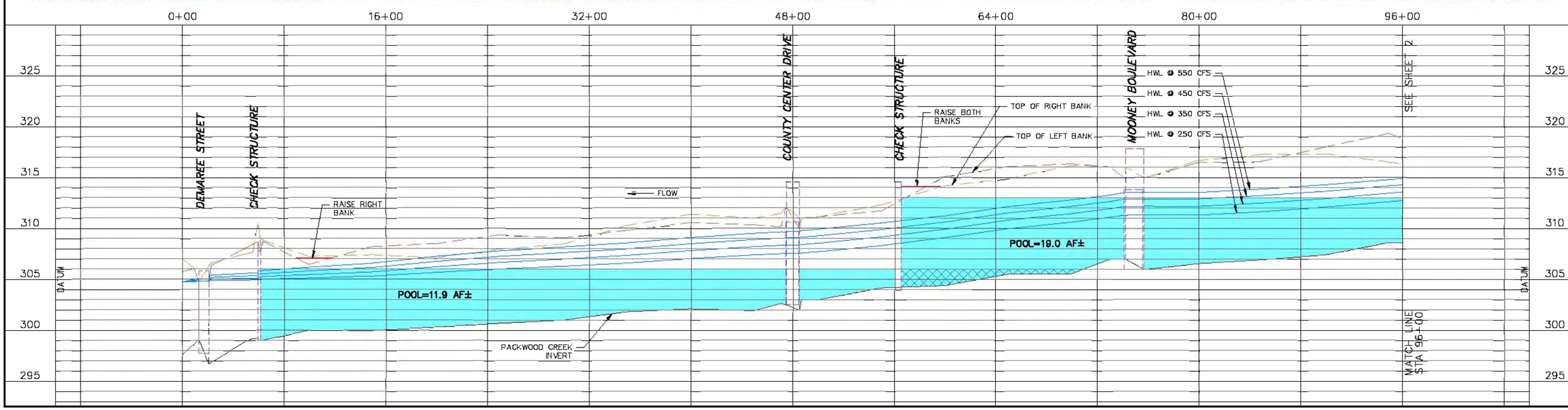
Item No.	Item Description	Estimated Quantity	Unit	Unit Price	Amount
Station 325+00 Check Improvements (13.1 AF)					
	Earth Dam Option				
12	Construct earth dam (include overexcavation and scarification)	70	CY	$30	$2,100
13	Construct half pipe CMP riser	1	LS	$5,000	$5,000
				Total	$7,000
	Check Structure Option				
14	Construct new check structure (no gates)	1	LS	$150,000	$125,000
15	Channel improvements around structure (lining, rip rap, etc.)	1	LS	$20,000	$20,000
				Total	$145,000
	Optional for Basin Recharge				
16	Construct tie-in to proposed basin south of creek	1	LS	$250,000	$250,000

NOTE(S):

Excludes mobilization/demobilization, bonds, insurance, etc.

Excludes costs for proposed basin construction.





COPYRIGHT 2010 by PROVOST & PRITCHARD
ALL RIGHTS RESERVED
The firm of Provost & Pritchard Engineering Group, Inc. expressly reserves its common law copyright and other property rights in these plans. These plans are not to be reproduced, changed, or copied in any form or manner whatsoever, nor are they to be assigned to any third party without first obtaining the written permission and consent of Provost & Pritchard Engineering Group, Inc. In the event of unauthorized reuse of these plans by a third party, the third party shall hold the firm of Provost & Pritchard Engineering Group, Inc. harmless for any liability resulting from such reuse and shall bear the cost of Provost & Pritchard Engineering Group, Inc.'s legal fees associated with defending and enforcing these rights.

No.	REVISION	BY	DATE

08/10/2010

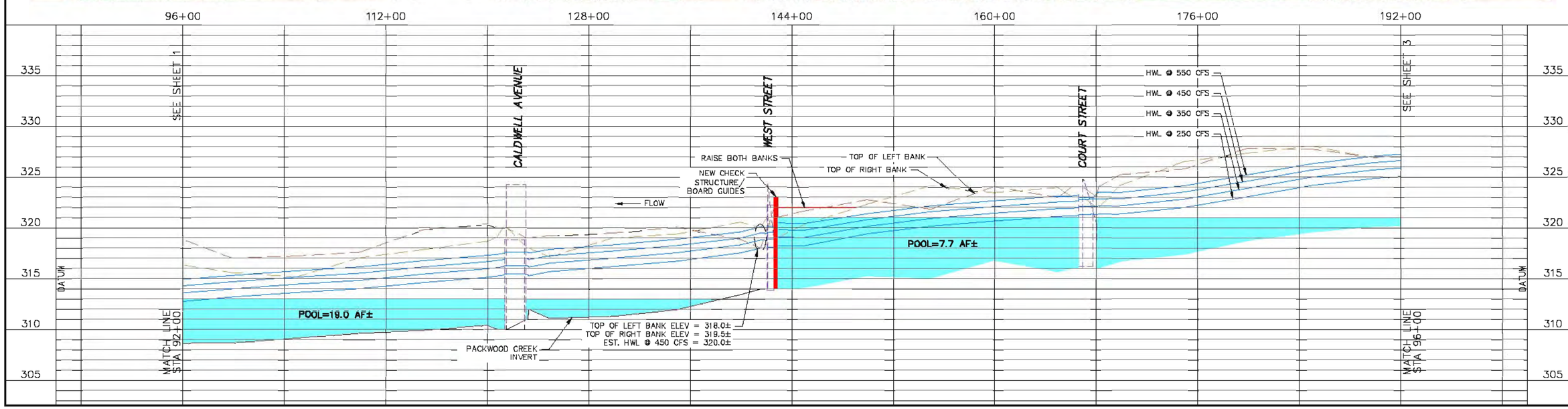
PACKWOOD CREEK
HYDRAULIC STUDY
KAWEAH DELTA WATER CONSERVATION DISTRICT
TULARE COUNTY

PACKWOOD CREEK
PLAN & PROFILE 1

PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
2506 ALLIANCE AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/299-1100 FAX 559/299-1080
www.provpr.com

DESIGN ENGINEER:
LICENSE NO:
DRAFTED BY: VSL
CHECKED BY ASC
SCALE: AS SHOWN
DATE: 08/10/2010
JOB NO: 122510V1
DWG. NO
SHEET 1 OF 5

8/11/2010 6:19 AM U:\Clients\Kawaeah Delta WCD - 1225\122510V01-SUR\SHEET SETS\Packwood Creek\Packwood_P&P 1.dwg -Adam Closs



COPYRIGHT 2010 by PROVOST & PRITCHARD
ALL RIGHTS RESERVED
The firm of Provost & Pritchard Engineering Group, Inc. expressly reserves its common law copyright and other property rights in these plans. These plans are not to be reproduced, changed, or copied in any form or manner whatsoever, nor are they to be assigned to any third party without first obtaining the written permission and consent of Provost & Pritchard Engineering Group, Inc. In the event of unauthorized reuse of these plans by a third party, the third party shall hold the firm of Provost & Pritchard Engineering Group, Inc. harmless, and further agrees to defend and indemnify Provost & Pritchard Engineering Group, Inc. and shall bear the cost of Provost & Pritchard Engineering Group, Inc.'s legal fees associated with defending and enforcing these rights.

No.	REVISION	BY	DATE

08/10/2010

PACKWOOD CREEK
HYDRAULIC STUDY
KAWEAH DELTA WATER CONSERVATION DISTRICT
TULARE COUNTY

PACKWOOD CREEK
PLAN & PROFILE 2

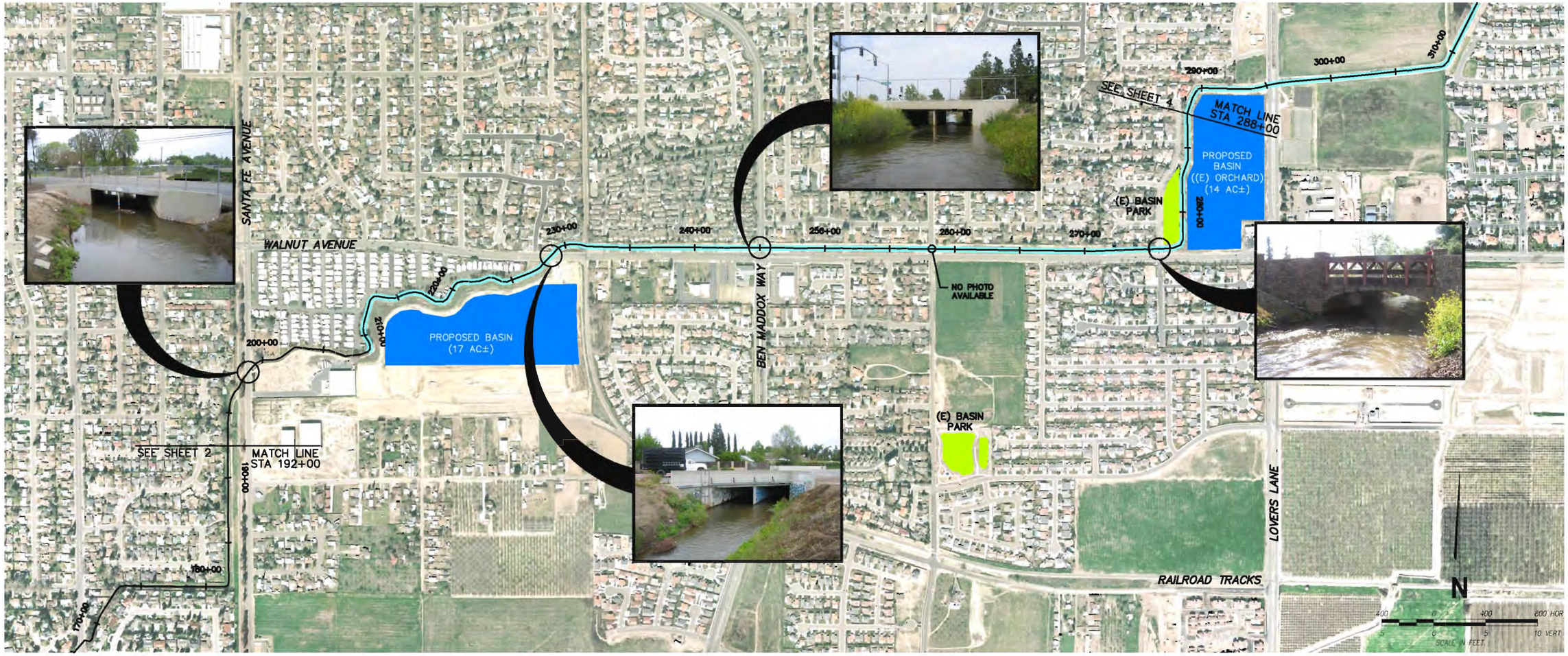
PROVOST & PRITCHARD
CONSULTING ENGINEERS
An Employee Owned Company
3506 ALLUVIAL AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/325-1100 FAX 559/325-1080
www.pandp.com

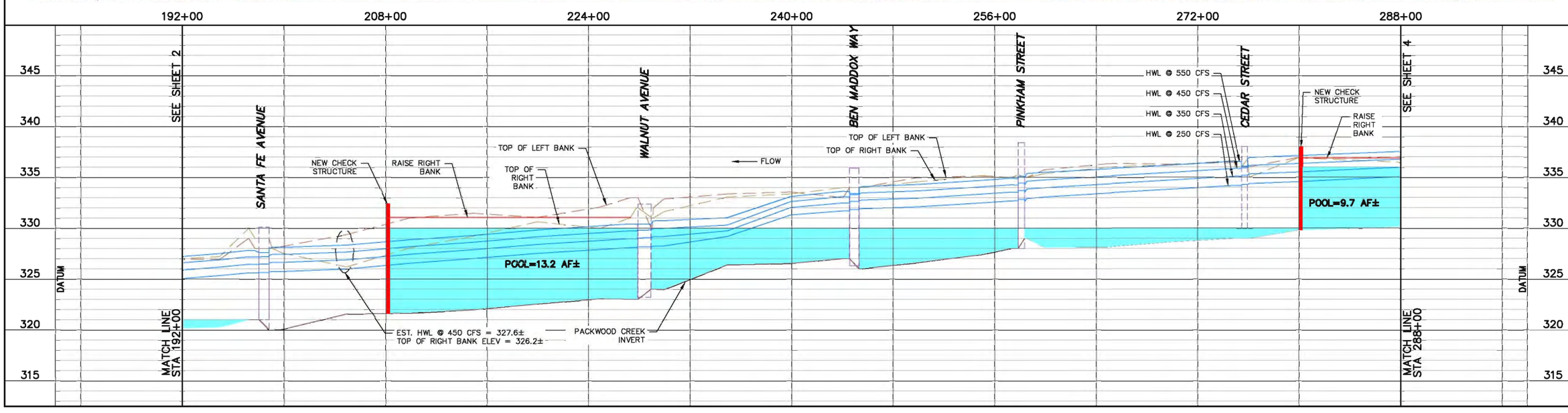
DESIGN ENGINEER:
LICENSE NO:

DRAFTED BY: VSL	CHECKED BY ASC

SCALE: AS SHOWN
DATE: 08/10/2010
JOB NO: 122510V1
DWG. NO
SHEET 2 OF 5

8/11/2010 6:20 AM V:\Clients\Kaweah Delta WCD - 1225\1225060I-SUR\SHEET SETS\Packwood Creek\Packwood_P&P 2.dwg -Adam Close





COPYRIGHT 2010 by PROVOST & PRITCHARD ENGINEERING GROUP, INC. ALL RIGHTS RESERVED
The firm of Provost & Pritchard Engineering Group, Inc. expressly reserves its common law copyright and other property rights in these plans. These plans are not to be reproduced, changed, or copied in any form or manner whatsoever, nor are they to be assigned to any third party without first obtaining the written permission and consent of Provost & Pritchard Engineering Group, Inc. In the event of unauthorized reuse of these plans by a third party, the third party shall hold the firm of Provost & Pritchard Engineering Group, Inc. harmless, and shall indemnify the firm of Provost & Pritchard Engineering Group, Inc. and shall be liable for all legal fees associated with defending the firm's rights.

No.	REVISION	BY	DATE
			08/10/2010

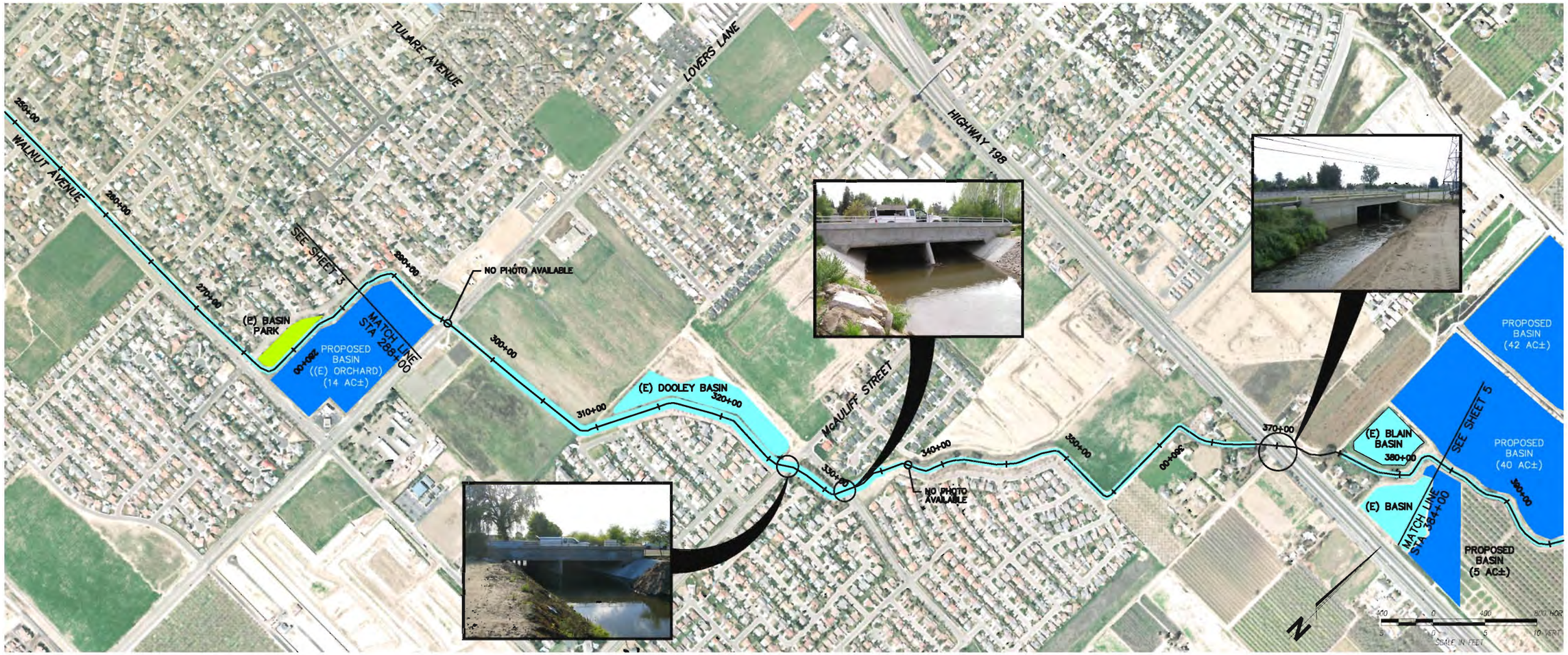
PACKWOOD CREEK
HYDRAULIC STUDY
KAWEAH DELTA WATER CONSERVATION DISTRICT
TULARE COUNTY

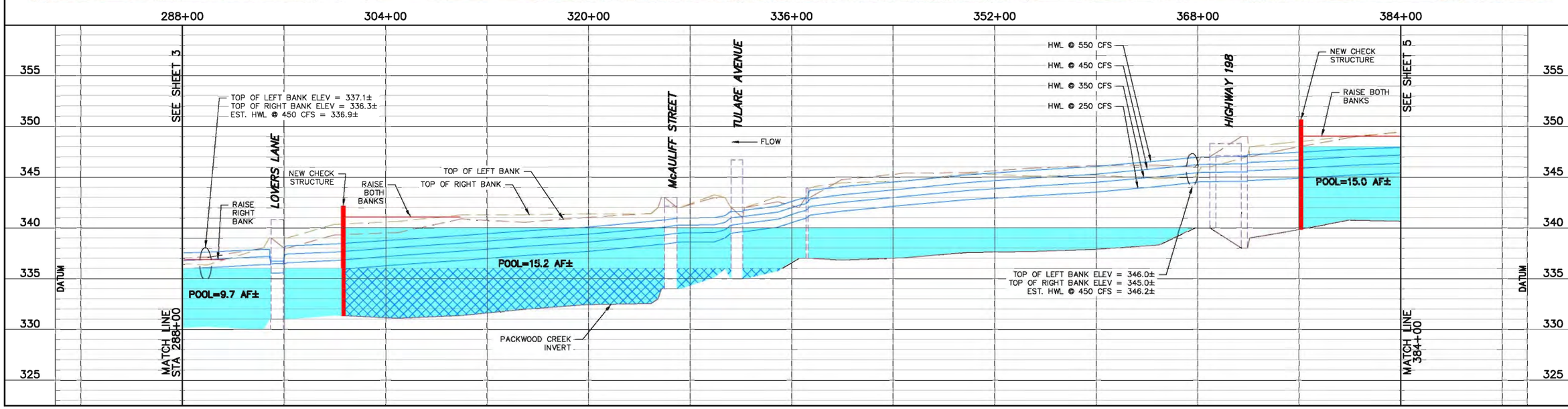
PACKWOOD CREEK
PLAN & PROFILE 3

EST 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
2505 ALLUVIAL AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/326-1100 FAX 559/326-1090
www.provpri.com

DESIGN ENGINEER:
LICENSE NO:
DRAFTED BY: VSL
CHECKED BY: ASC
SCALE: AS SHOWN
DATE: 08/10/2010
JOB NO: 122510V1
DWG. NO:
SHEET 3 OF 5

8/11/2010 9:22 AM V:\Clients\Kaweah Delta WCD - 1225\12250901-SUR\SHEET SETS\Packwood Creek\Packwood_P&P 3.dwg - Adam Cloes





COPYRIGHT 2010 by PROVOST & PRITCHARD
ALL RIGHTS RESERVED
The firm of Provost & Pritchard Engineering Group, Inc. expressly reserves its common law copyright and other property rights in these plans. These plans are not to be reproduced, changed, or copied in any form or manner whatsoever, nor are they to be assigned to any third party without first obtaining the written permission and consent of Provost & Pritchard Engineering Group, Inc. In the event of unauthorized reuse of these plans by a third party, the third party shall hold the firm of Provost & Pritchard Engineering Group, Inc. harmless, and shall indemnify the firm of Provost & Pritchard Engineering Group, Inc. for any and all costs and fees associated with defending and enforcing these rights.

No.	REVISION	BY	DATE
	08/10/2010		

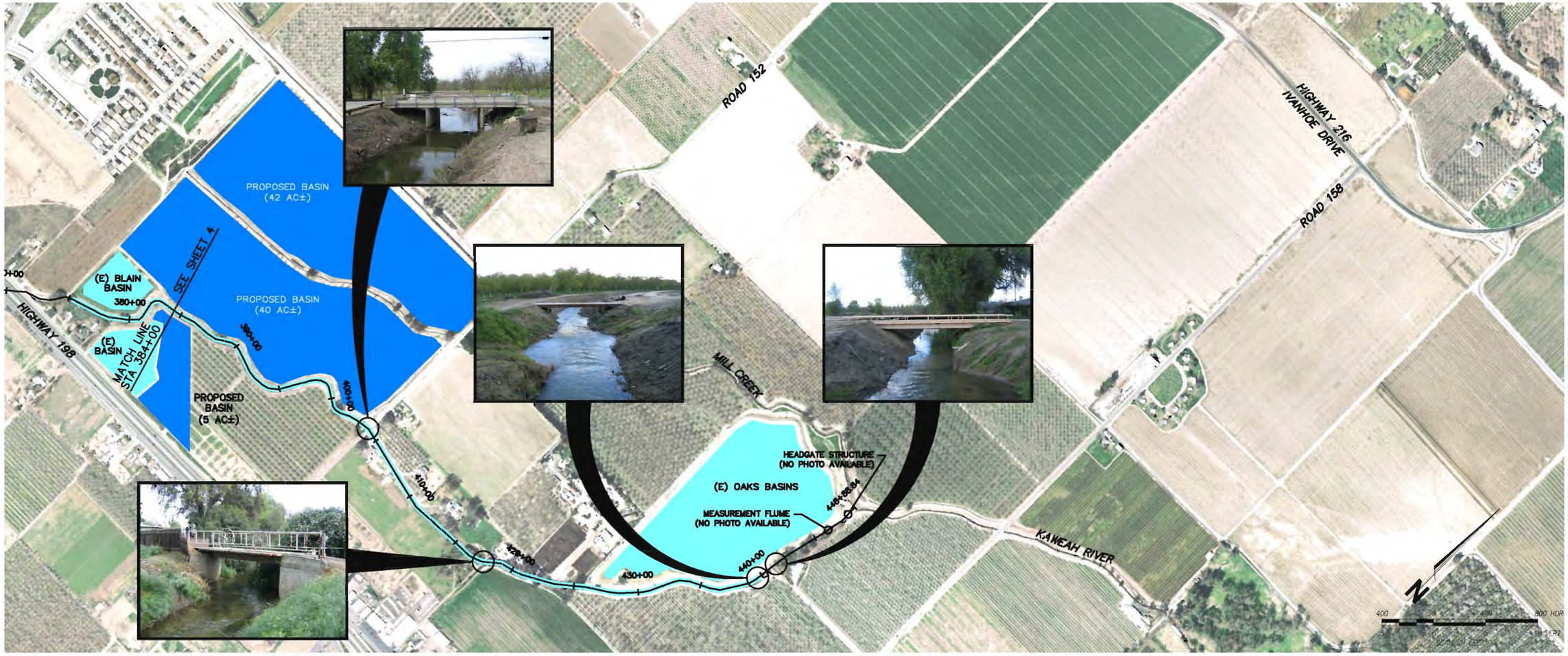
PACKWOOD CREEK
HYDRAULIC STUDY
KAWEAH DELTA WATER CONSERVATION DISTRICT
TULARE COUNTY

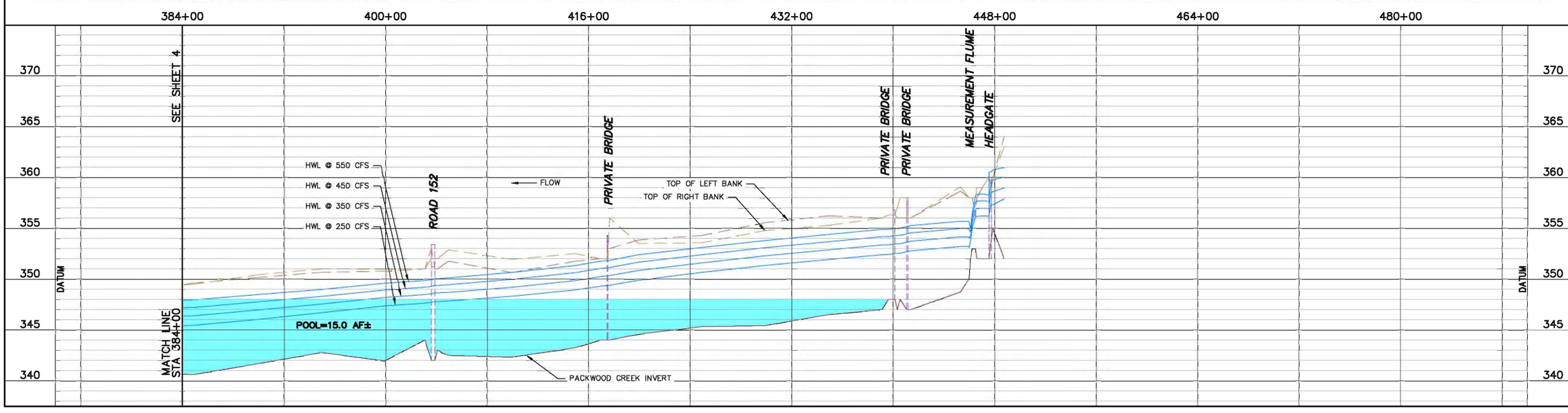
PACKWOOD CREEK
PLAN & PROFILE 4

EST 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
2505 ALLUVIAL AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/326-1100 FAX 559/326-1090
www.provpri.com

DESIGN ENGINEER:
LICENSE NO:
DRAFTED BY: VSL
CHECKED BY: ASC
SCALE: AS SHOWN
DATE: 08/10/2010
JOB NO: 122510V1
DWG. NO:
SHEET 4 OF 5

8/11/2010 9:23 AM V:\Clients\Kaweah Delta WCD - 1225\122509D1-SUR\SHEET SETS\Packwood Creek\Packwood_P&P 4.dwg -Adam Claes





COPYRIGHT 2010 by PROVOST & PRITCHARD ALL RIGHTS RESERVED
The firm of Provost & Pritchard Engineering Group, Inc. expressly reserves its common law copyright and other property rights in these plans. These plans are not to be reproduced, changed, or copied in any form or manner whatsoever, nor are they to be assigned to any third party without first obtaining the written permission and consent of Provost & Pritchard Engineering Group, Inc. In the event of unauthorized reuse of these plans by a third party, the third party shall hold the firm of Provost & Pritchard Engineering Group, Inc. harmless. In addition, the third party shall indemnify Provost & Pritchard Engineering Group, Inc. and shall be liable for all legal costs and fees associated with defending the firm of Provost & Pritchard Engineering Group, Inc.'s legal fees associated with defending and enforcing these rights.

No.	REVISION	BY	DATE
			08/10/2010

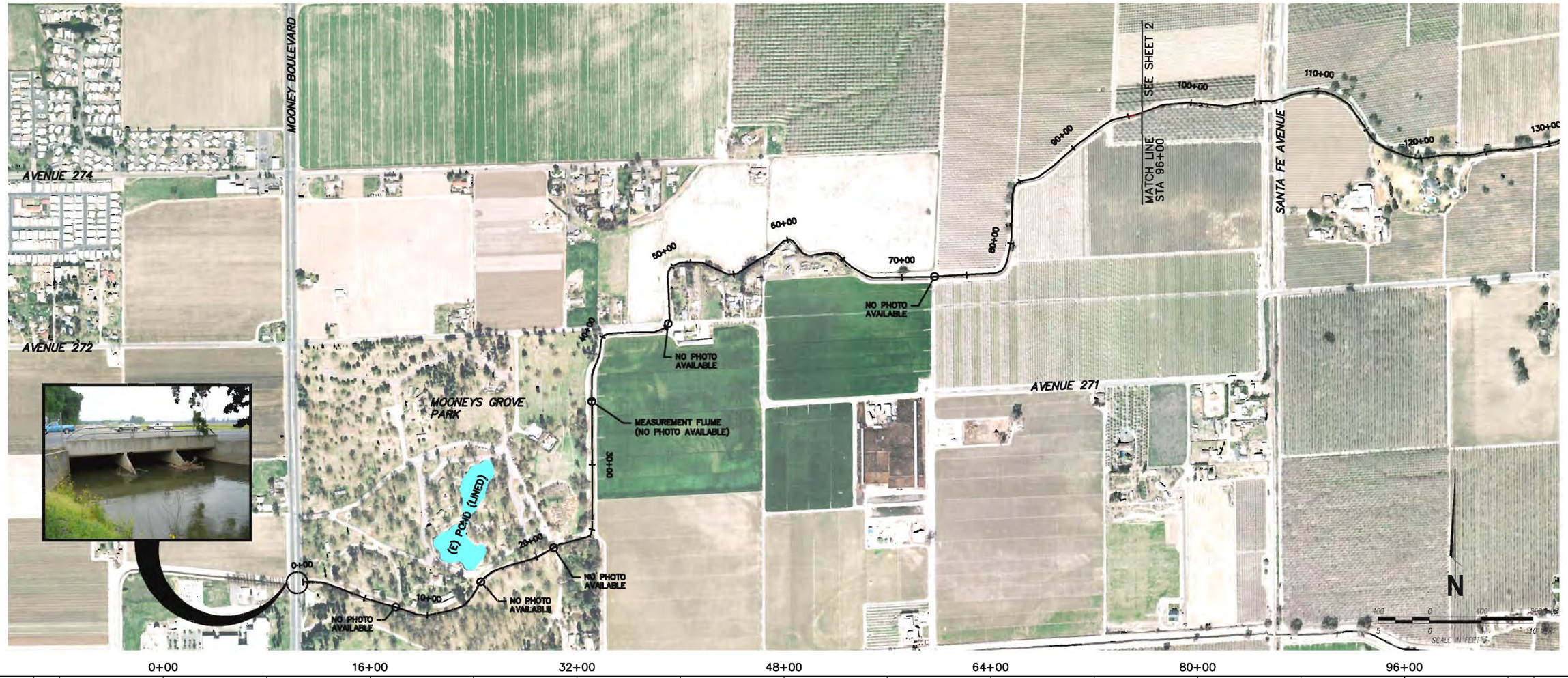
PACKWOOD CREEK
HYDRAULIC STUDY
KAWEAH DELTA WATER CONSERVATION DISTRICT
TULARE COUNTY

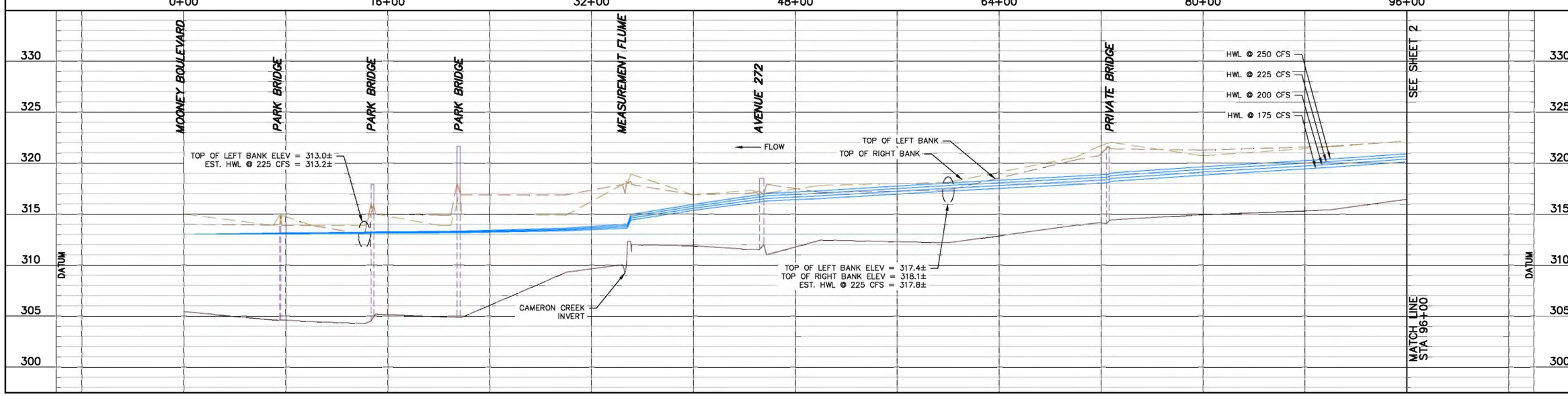
PACKWOOD CREEK
PLAN & PROFILE 5

EST 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
2505 ALLUVIAL AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/326-1100 FAX 559/326-1090
www.provpri.com

DESIGN ENGINEER:
LICENSE NO:
DRAFTED BY: VSL
CHECKED BY: ASC
SCALE: ASH SHOWN
DATE: 08/10/2010
JOB NO: 122510V1
DWG. NO:
SHEET 5 OF 5

8/11/2010 9:24 AM V:\Clients\Kaweah Delta WCD - 1225\122510V1-SUR\SHEET SETS\Packwood Creek\Packwood_P&P 5.dwg - Adam Cless





COPYRIGHT 2010 by PROVOST & PRITCHARD
ALL RIGHTS RESERVED
The firm of Provost & Pritchard Engineering Group, Inc. expressly reserves its common law copyright and other property rights in these plans. These plans are not to be reproduced, changed, or copied in any form or manner whatsoever, nor are they to be assigned to any third party without first obtaining the written permission and consent of Provost & Pritchard Engineering Group, Inc. In the event of unauthorized reuse of these plans by a third party, the third party shall hold the firm of Provost & Pritchard Engineering Group, Inc. harmless, and shall indemnify the firm of Provost & Pritchard Engineering Group, Inc. and shall be liable for all of Provost & Pritchard Engineering Group, Inc.'s legal fees associated with defending and enforcing these rights.

No.	REVISION	BY	DATE
	08/10/2010		

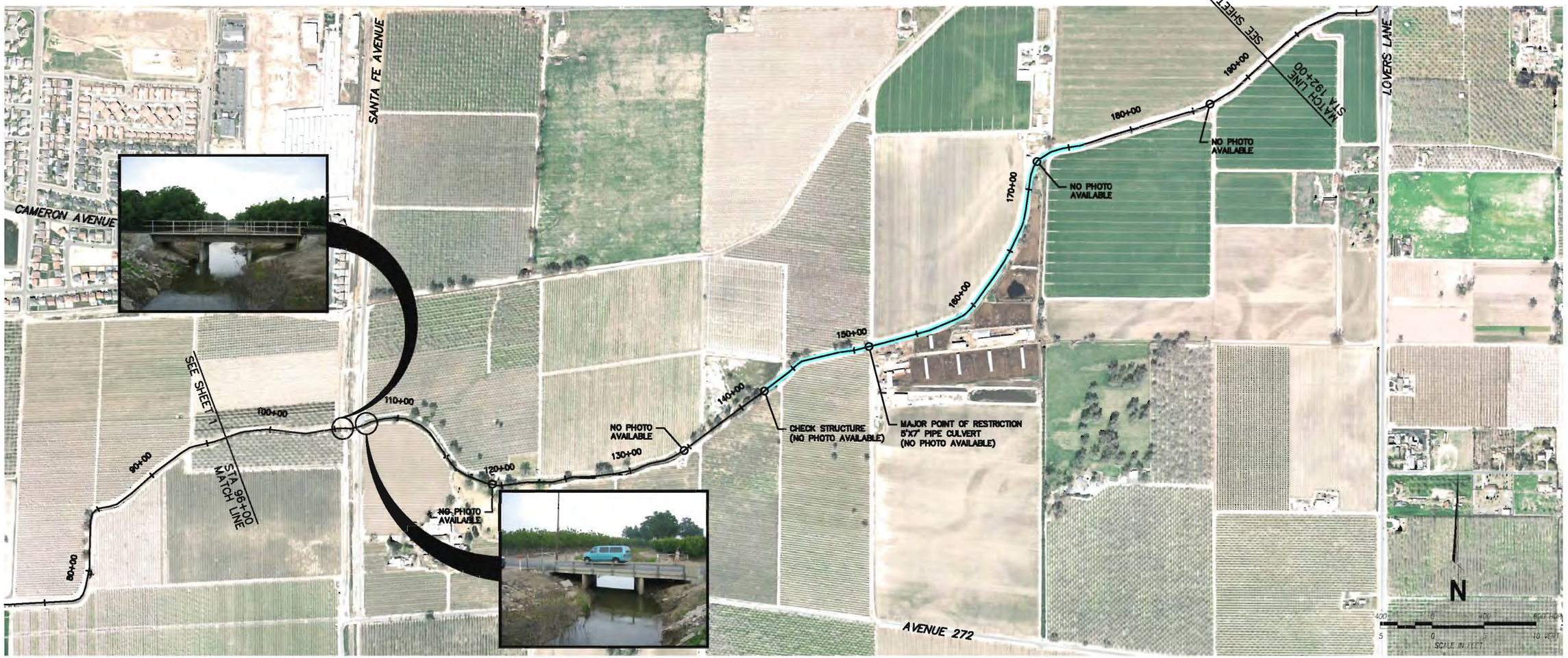
CAMERON CREEK
HYDRAULIC STUDY
KAWEAH DELTA WATER CONSERVATION DISTRICT
TULARE COUNTY

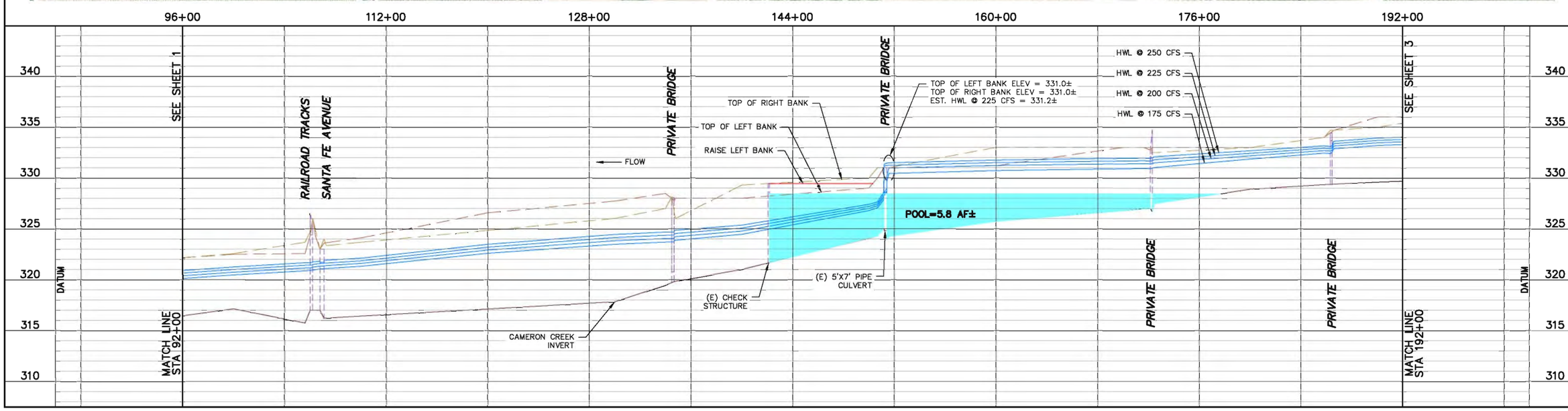
CAMERON CREEK
PLAN & PROFILE 1

EST 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
2505 ALLUVIAL AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/326-1100 FAX 559/326-1090
www.provpri.com

DESIGN ENGINEER:
LICENSE NO:
DRAFTED BY: VSL
CHECKED BY: ASC
SCALE: AS SHOWN
DATE: 08/10/2010
JOB NO: 122510V1
DWG. NO:
SHEET 1 OF 4

8/11/2010 10:09 AM v:\Clients\kaweah delta wcd - 1225\12250901-sur\sheet sets\cameron creek\P&P 1.dwg -Adam Cass





COPYRIGHT 2010 by PROVOST & PRITCHARD ALL RIGHTS RESERVED
The firm of Provost & Pritchard Engineering Group, Inc. expressly reserves its common law copyright and other property rights in these plans. These plans are not to be reproduced, changed, or copied in any form or manner whatsoever, nor are they to be assigned to any third party without first obtaining the written permission and consent of Provost & Pritchard Engineering Group, Inc. In the event of unauthorized reuse of these plans by a third party, the third party shall hold the firm of Provost & Pritchard harmless, and indemnify the firm for any and all liability, losses, or damages, including but not limited to, court costs, and attorney's fees incurred by the firm of Provost & Pritchard Engineering Group, Inc. in defending and enforcing these rights.

No.	REVISION	BY	DATE
	08/10/2010		

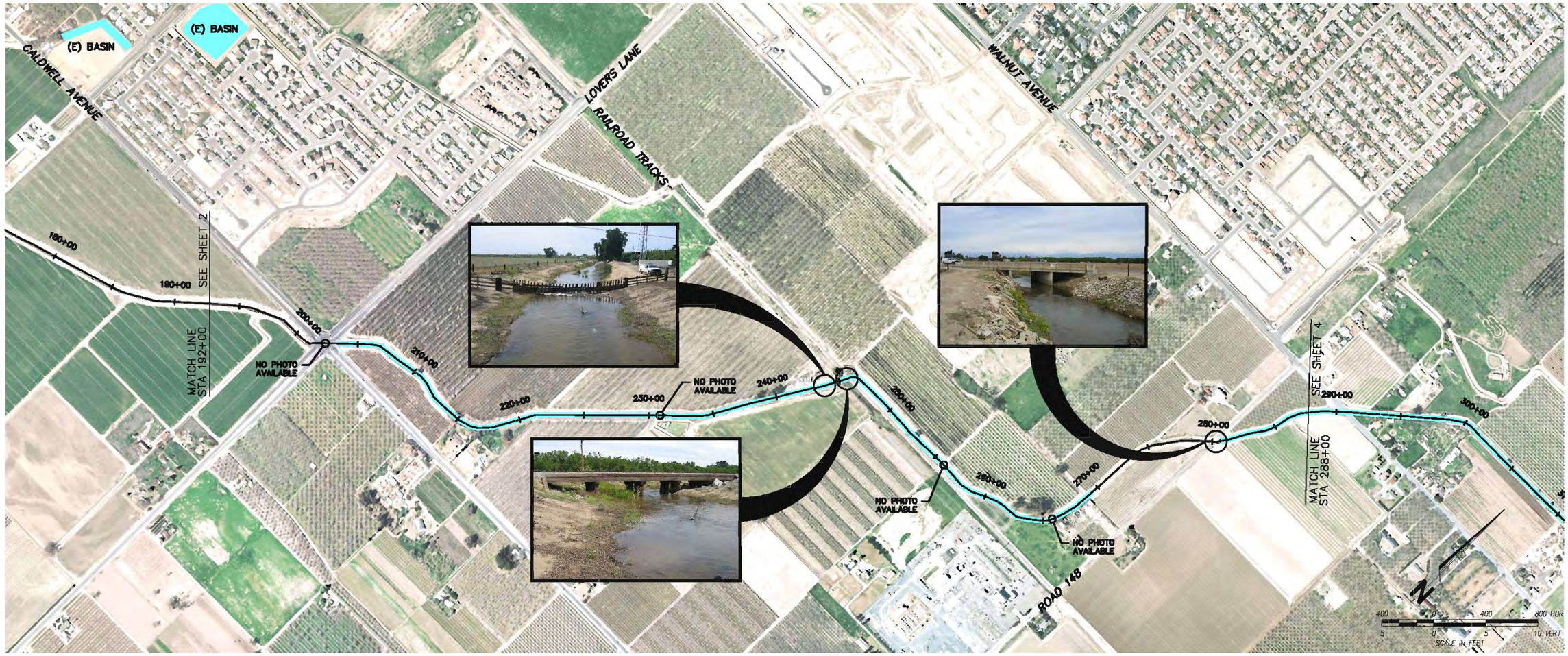
CAMERON CREEK
HYDRAULIC STUDY
KAWEAH DELTA WATER CONSERVATION DISTRICT
TULARE COUNTY

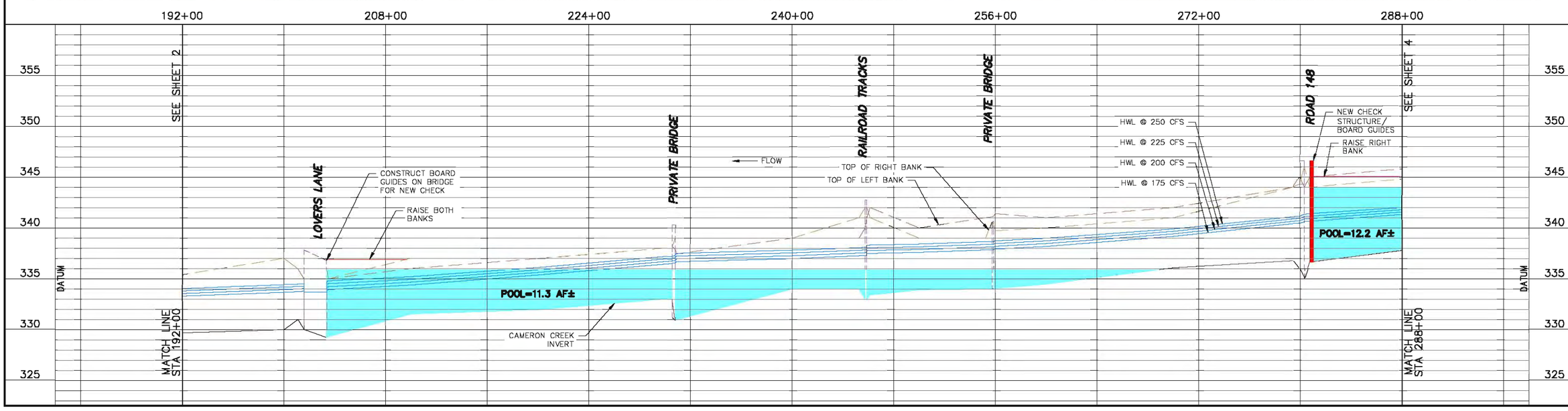
CAMERON CREEK
PLAN & PROFILE 2

EST 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
2505 ALLUVIAL AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/326-1100 FAX 559/326-1090
www.provpri.com

DESIGN ENGINEER:
LICENSE NO:
DRAFTED BY: VSL
CHECKED BY: ASC
SCALE: AS SHOWN
DATE: 08/10/2010
JOB NO: 122510V1
DWG. NO:
SHEET 2 OF 4

8/11/2010 10:11 AM v:\Clients\kaweah delta wcd - 1225\122510V1-sur\sheet sets\cameron creek\1 P&P 2.dwg -Adam Claes





COPYRIGHT 2010 by PROVOST & PRITCHARD
ENGINEERING GROUP, INC. & PRITCHARD ENGINEERING GROUP, INC. expressly reserves its common law copyright and other property rights in these plans. These plans are not to be reproduced, changed or copied in any form or manner whatsoever, nor are they to be assigned to any third party without first obtaining the written permission and consent of Provost & Pritchard Engineering Group, Inc. In the event of unauthorized reuse of these plans by a third party, the third party shall hold the firm of Provost & Pritchard Engineering Group, Inc. harmless, and shall indemnify the firm of Provost & Pritchard Engineering Group, Inc.'s legal fees associated with defending and enforcing these rights.

No.	REVISION	BY	DATE
	08/10/2010		

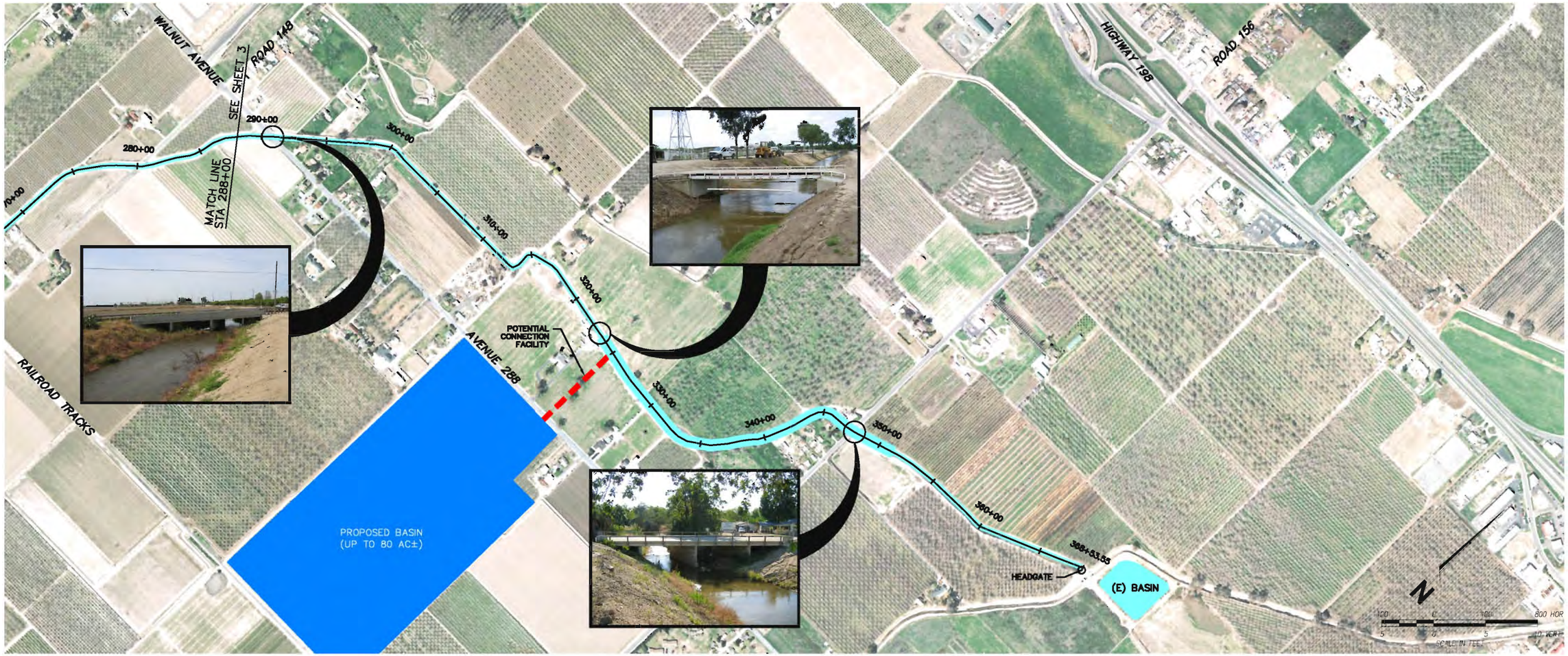
CAMERON CREEK
HYDRAULIC STUDY
KAWEAH DELTA WATER CONSERVATION DISTRICT
TULARE COUNTY

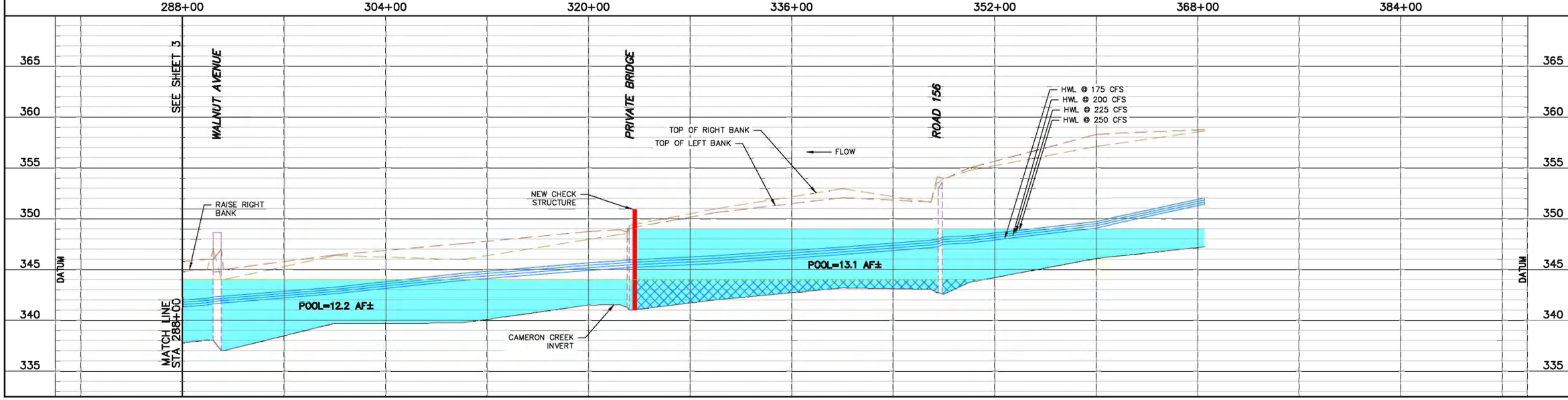
CAMERON CREEK
PLAN & PROFILE 3

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
2529 N. ALUVIAL AVE.
CLOVIS, CALIFORNIA 93611-9166
559/326-1100 FAX 559/326-1090
www.pprcg.com

DESIGN ENGINEER:
LICENSE NO:
DRAFTED BY: VSL
CHECKED BY: ASC
SCALE: AS SHOWN
DATE: 08/10/2010
JOB NO: 122510V1
DWG. NO:
SHEET 3 OF 4

8/11/2010 10:13 AM v:\Clients\kaweah delta wcd - 1225\122510V1-sur\sheet sets\cameron creek\1 P&P 3.dwg -Adam Cloes





COPYRIGHT 2010 by PROVOST & PRITCHARD
ALL RIGHTS RESERVED
The firm of Provost & Pritchard Engineering Group, Inc. expressly reserves its common law copyright and other property rights in these plans. These plans are not to be reproduced, changed, or copied in any form or manner whatsoever, nor are they to be assigned to any third party without first obtaining the written permission and consent of Provost & Pritchard Engineering Group, Inc. In the event of unauthorized reuse of these plans by a third party, the third party shall hold the firm of Provost & Pritchard Engineering Group, Inc. harmless, and shall indemnify the firm of Provost & Pritchard Engineering Group, Inc.'s legal fees associated with defending and enforcing these rights.

No.	REVISION	BY	DATE
	08/10/2010		

CAMERON CREEK
HYDRAULIC STUDY
KAWEAH DELTA WATER CONSERVATION DISTRICT
TULARE COUNTY

CAMERON CREEK
PLAN & PROFILE 4

EST 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
2505 ALLUVIAL AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/326-1100 FAX 559/326-1090
www.provpr.com

DESIGN ENGINEER:
LICENSE NO:

DRAFTED BY: VSL	CHECKED BY: ASC

SCALE: AS SHOWN
DATE: 08/10/2010
JOB NO: 122510V1
DWG. NO:
SHEET 4 OF 4

8/11/2010 10:14 AM v:\Clients\kaweah delta wcd - 1229\12250901-sur\sheet sets\cameron creek\1 P&P 4.dwg -Adam Cloes

ATTACHMENT 3 – WORK PLAN

APPENDIX C

Kaweah Delta WCD 2012 Water Energy & Efficiency Grant for Packwood Creek Recharge Project

Grant Application Package

Opportunity Title: WaterSMART: Water and Energy Efficiency Grants for FY 2
Offering Agency: Bureau of Reclamation - Denver Office
CFDA Number: 15.507
CFDA Description: WaterSMART (Sustaining and Manage America's Resources f
Opportunity Number: R12SF80049
Competition ID: R12SF80049
Opportunity Open Date: 11/07/2011
Opportunity Close Date: 01/19/2012
Agency Contact:
Michelle Maher
Grants Officer
E-mail: mmaher@usbr.gov
Phone: 303-445-2025

This electronic grants application is intended to be used to apply for the specific Federal funding opportunity referenced here.

If the Federal funding opportunity listed is not the opportunity for which you want to apply, close this application package by clicking on the "Cancel" button at the top of this screen. You will then need to locate the correct Federal funding opportunity, download its application and then apply.

This opportunity is only open to organizations, applicants who are submitting grant applications on behalf of a company, state, local or tribal government, academia, or other type of organization.

*** Application Filing Name:** KDWCD: Packwood Creek Water Cons. Prj.

Mandatory Documents

Move Form to Complete

Move Form to Delete

Mandatory Documents for Submission

Application for Federal Assistance (SF-424)

Optional Documents

Attachments
Budget Information for Non-Construction Program
Assurances for Non-Construction Programs (SF-42
Disclosure of Lobbying Activities (SF-LLL)

Move Form to Submission List

Move Form to Delete

Optional Documents for Submission

Budget Information for Construction Programs (S
Assurances for Construction Programs (SF-424D)

Instructions

1 **Enter a name for the application in the Application Filing Name field.**

- This application can be completed in its entirety offline; however, you will need to login to the Grants.gov website during the submission process.
- You can save your application at any time by clicking the "Save" button at the top of your screen.
- The "Save & Submit" button will not be functional until all required data fields in the application are completed and you clicked on the "Check Package for Errors" button and confirmed all data required data fields are completed.

2 **Open and complete all of the documents listed in the "Mandatory Documents" box. Complete the SF-424 form first.**

- It is recommended that the SF-424 form be the first form completed for the application package. Data entered on the SF-424 will populate data fields in other mandatory and optional forms and the user cannot enter data in these fields.

- The forms listed in the "Mandatory Documents" box and "Optional Documents" may be predefined forms, such as SF-424, forms where a document needs to be attached, such as the Project Narrative or a combination of both. "Mandatory Documents" are required for this application. "Optional Documents" can be used to provide additional support for this application or may be required for specific types of grant activity. Reference the application package instructions for more information regarding "Optional Documents".

- To open and complete a form, simply click on the form's name to select the item and then click on the => button. This will move the document to the appropriate "Documents for Submission" box and the form will be automatically added to your application package. To view the form, scroll down the screen or select the form name and click on the "Open Form" button to begin completing the required data fields. To remove a form/document from the "Documents for Submission" box, click the document name to select it, and then click the <= button. This will return the form/document to the "Mandatory Documents" or "Optional Documents" box.

- All documents listed in the "Mandatory Documents" box must be moved to the "Mandatory Documents for Submission" box. When you open a required form, the fields which must be completed are highlighted in yellow with a red border. Optional fields and completed fields are displayed in white. If you enter invalid or incomplete information in a field, you will receive an error message.

3 **Click the "Save & Submit" button to submit your application to Grants.gov.**

- Once you have properly completed all required documents and attached any required or optional documentation, save the completed application by clicking on the "Save" button.
- Click on the "Check Package for Errors" button to ensure that you have completed all required data fields. Correct any errors or if none are found, save the application package.
- The "Save & Submit" button will become active; click on the "Save & Submit" button to begin the application submission process.
- You will be taken to the applicant login page to enter your Grants.gov username and password. Follow all onscreen instructions for submission.

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

* 3. Date Received: Completed by Grants.gov upon submission.

4. Applicant Identifier:

5a. Federal Entity Identifier:

* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: Kaweah Delta Water Conservation District

* b. Employer/Taxpayer Identification Number (EIN/TIN): 94-2146824

* c. Organizational DUNS: 115086431

d. Address:

* Street1: 2975 N. Farmersville Blvd.
Street2:
* City: Farmersville
County: Tulare
* State: CA: California
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 93223

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: Mr.
* First Name: Larry
Middle Name:
* Last Name: Dotson
Suffix:

Title: Senior District Engineer

Organizational Affiliation:

* Telephone Number: (559) 747-5601
Fax Number: (559)747-1989

* Email: ldotson@kdwcd.com

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

9. Type of Applicant 1: Select Applicant Type:

D: Special District Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Bureau of Reclamation - Denver Office

11. Catalog of Federal Domestic Assistance Number:

15.507

CFDA Title:

WaterSMART (Sustaining and Manage America's Resources for Tomorrow)

*** 12. Funding Opportunity Number:**

R12SF80049

* Title:

WaterSMART: Water and Energy Efficiency Grants for FY 2012

13. Competition Identification Number:

R12SF80049

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Tulare County; City of Visalia

*** 15. Descriptive Title of Applicant's Project:**

Kaweah Delta Water Conservation District's
Packwood Creek Water Conservation Project

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

16. Congressional Districts Of:

* a. Applicant: 20, 21
* b. Program/Project: 20, 21

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 10/01/2012
* b. End Date: 09/30/2014

18. Estimated Funding ($):

* a. Federal	800,000.00
* b. Applicant	731,877.00
* c. State	78,989.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	1,610,866.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- [ ] a. This application was made available to the State under the Executive Order 12372 Process for review on .
- [ ] b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- [x] c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

- [ ] Yes
- [x] No

Explanation

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

- [x] ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Mr.
* First Name: Larry
Middle Name:
* Last Name: Dotson
Suffix:

* Title: Senior District Engineer

* Telephone Number: (559) 747-5601
Fax Number: (559) 747-1989

* Email: ldotson@kdwcd.com

* Signature of Authorized Representative:
* Date Signed: 1/18/2012

Application for Federal Assistance SF-424 Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

ASSURANCES - CONSTRUCTION PROGRAMS

OMB Number: 4040-0009
Expiration Date: 06/30/2014

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant:, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards of merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29) U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statue(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statue(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.

14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq).

18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

* SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	* TITLE
	Senior District Engineer
* APPLICANT ORGANIZATION	* DATE SUBMITTED
Kaweah Delta Water Conservation District	1/18/2012

KAWEAH DELTA WATER CONSERVATION DISTRICT

PACKWOOD CREEK WATER CONSERVATION PROJECT

TULARE COUNTY, CA

APPLICATION SUBMITTED TO THE
UNITED STATES BUREAU OF RECLAMATION
FOR A
WaterSMART: WATER AND ENERGY EFFICIENCY GRANT

(FUNDING OPPORTUNITY ANNOUNCEMENT NO. R12SF80049)

Project Manager: Larry Dotson, Senior District Engineer
2975 N. Farmersville Blvd.
Farmersville, CA 93223
Phone: (559) 747-5601
Fax: (559) 747-1989
E-mail: ldotson@kdwcd.com

January 2012

TABLE OF CONTENTS

TECHNICAL PROPOSAL **1**

1 . EXECUTIVE SUMMARY **1**
(A) GENERAL PROJECT INFORMATION 1
(B) PROJECT SUMMARY 1
(C) PROJECT DURATION AND ESTIMATED COMPLETION DATE 1
2 . BACKGROUND DATA **3**
(A) GEOGRAPHIC LOCATION 3
(B) WATER SUPPLY 3
(C) WATER DELIVERY SYSTEM 6
(D) ENERGY 7
(E) PAST WORKING RELATIONSHIPS WITH RECLAMATION 7
3 . TECHNICAL PROJECT DESCRIPTION **9**
4 . EVALUATION CRITERIA **12**
(A) WATER CONSERVATION 12
(B) ENERGY-WATER NEXUS 16
(C) BENEFITS TO ENDANGERED SPECIES 17
(D) WATER MARKETING 18
(E) OTHER CONTRIBUTIONS TO WATER SUPPLY SUSTAINABILITY 21
(F) IMPLEMENTATION AND RESULTS 24
(G) CONNECTION TO RECLAMATION PROJECT ACTIVITIES 29

ENVIRONMENTAL COMPLIANCE **30**

REQUIRED PERMITS OR APPROVALS **32**

FUNDING PLAN AND LETTERS OF COMMITMENT **33**

OFFICIAL RESOLUTION **35**

BUDGET PROPOSAL **36**

BUDGET NARRATIVE **37**

APPENDICES

A. RESOLUTION
B. PROJECT COST SUMMARIES
C. DETAILED PROJECT SCHEDULE
D. FINANCIAL INFORMATION
E. BENEFIT CALCULATIONS
F. LETTERS OF SUPPORT
G. OAKES BASIN BASIS OF DESIGN
(Full document available upon request)
H. PACKWOOD STRUCTURE PRELIMINARY PLAN
I. MAPS OF WATER PURVEYORS WITHIN KDWCD
J. PACKWOOD CREEK HYDRAULIC STUDY MEMO
(Full document available upon request)
K. DISTRICT'S WATER MANAGEMENT PLAN
(Full document available upon request)
L. DISTRICT'S GROUNDWATER MANAGEMENT PLAN
(Full document available upon request)

TECHNICAL PROPOSAL

1 . Executive Summary

(a) General Project Information

Date: January 19, 2012
Applicant Name: Kaweah Delta Water Conservation District
City, County and State: City of Farmersville, County of Tulare, California

(b) Project Summary

The Kaweah Delta Water Conservation District's (Kaweah Delta WCD, KDWCD or District) Packwood Creek Water Conservation Project (Project) is primarily a water conservation project (Task A) that will utilize an upstream regulation basin (Oakes Basin) to store and regulate surplus waters into Packwood Creek, where 5 automated check structures in the Creek will maintain high water levels and maximize storage/recharge capabilities. SCADA improvements of remote monitoring of level and flow at these facilities will allow the District to operate as a cohesive unit, maximizing the water conservation and management potential. It is expected that the project could recharge 1,465 AF//yr, and will better manage 29,360 AF/yr. With this Project, KDWCD will be able to foster water marketing (Task D) between the City of Visalia and Tulare Irrigation District. An agreement between the two entities will allow for the City of Visalia to deliver tertiary treated wastewater to Tulare ID in exchange for Uncontrolled Season Water delivered back to City of Visalia from Tulare ID at a rate of 1 AF of uncontrolled water for every 2 AF of tertiary treated water delivered. When not being utilized by the above arrangement, KDWCD could utilize the Project to recharge surplus Kaweah River water, or facilitate transfers to the City of Visalia from Friant Division CVP water users as well as Kaweah and St. Johns Rivers water users. Habitat improvements (Task C) will be accomplished by restoring Valley Oak Riparian Forest; up to an additional 230 plantings are proposed between Oak Trees and native plants. Utilizing this site, it will ensure that this habitat remains preserved and under the control of KDWCD, be provided ample water supply, and provide favorable habitat for threatened and/or endangered and other wildlife into the foreseeable future. Additionally, the Project would increase renewable energy production at a hydroelectric facility jointly owned by the KDWCD at Terminus Dam (Task B).

(c) Project Duration and Estimated Completion Date

Project design is expected to be complete by December, 2012. CEQA will be completed by September 2012, followed by NEPA (December, 2012). The District expects to address CEQA with a Mitigated Negative Declaration (MND), and NEPA with a Finding of No Significant Impact (FONSI). Permitting is likely to be accomplished by December, 2012 as well. The Project will then be advertised for qualified contractors to bid on. Construction will be broken into two phases, to balance out fund distribution from Reclamation, and not exceed the $750,000 maximum distribution of Funding Group II. Assuming a normal water year, Phase 1 is planned to begin in April, 2013,

lasting roughly 3 months, to be completed by July, 2013. Phase 2 is planned to begin in April, 2014, lasting roughly 3 months, to be completed by July, 2014.This schedule will provide a 4 month buffer to be complete by the end of Reclamation's Fiscal Year 2014, September, 2014.

TECHNICAL PROPOSAL

2 . Background Data

(a) Geographic Location

Kaweah Delta Water Conservation District (Kaweah Delta WCD, KDWCD or District) was formed in 1927 under the provisions of the Water Conservation District Act of 1927 for the purpose of conserving and storing waters of the Kaweah River, protecting lands from flood damage and for conserving and protecting the underground waters of the Kaweah Delta. The District encompasses approximately 340,000 acres within Tulare and Kings County, California, and is situated in the south-central portion of the San Joaquin Valley of California, approximately 50 miles southeast of the City of Fresno and approximately 65 miles northwest of the City of Bakersfield. A location map for the District is included as **Figure 1** and a location map for the Project is included as **Figure 2**.

(b) Water Supply

While districts within Kaweah Delta WCD may have large entitlements to surface water through the Kaweah River or the Friant Division of the CVP, KDWCD has very little entitlement in comparison to the irrigated acreage within their District. From Kaweah River entitlements the District has an average annual entitlement of 23,406 AF/yr. Recently the District also received the assignment of a Friant Division, CVP Class 1 and Class 2 water service contract of 1.2 TAF and 7.4 TAF, respectively. Since receiving their CVP contract in 2010, the District has received 41,377 AF/yr on an average annual basis from the Friant Division, CVP.

A majority of the lands within KDWCD are delivered water by water agencies or ditch companies (see **Appendix L** for a copy of the District's Groundwater Management Plan). On an average annual basis, approximately 650 TAF of surface water is delivered within KDWCD. Roughly 102 TAF of that water is imported from either the Friant Division of the CVP or the Kings River, with the remainder coming from the Kaweah River.

The water demand within the District can be attributed to both agricultural and municipal users. The District's average annual agricultural demand is currently 809 TAF (558 TAF groundwater and 251 TAF surface water). Municipal demand is approximately 53 TAF (groundwater only). Given the recent increase in multiple cropping within the District and the growth of the communities of Visalia and Tulare it is possible that water demand within the District could increase by over 2% (or 16 TAF) in the next five years.

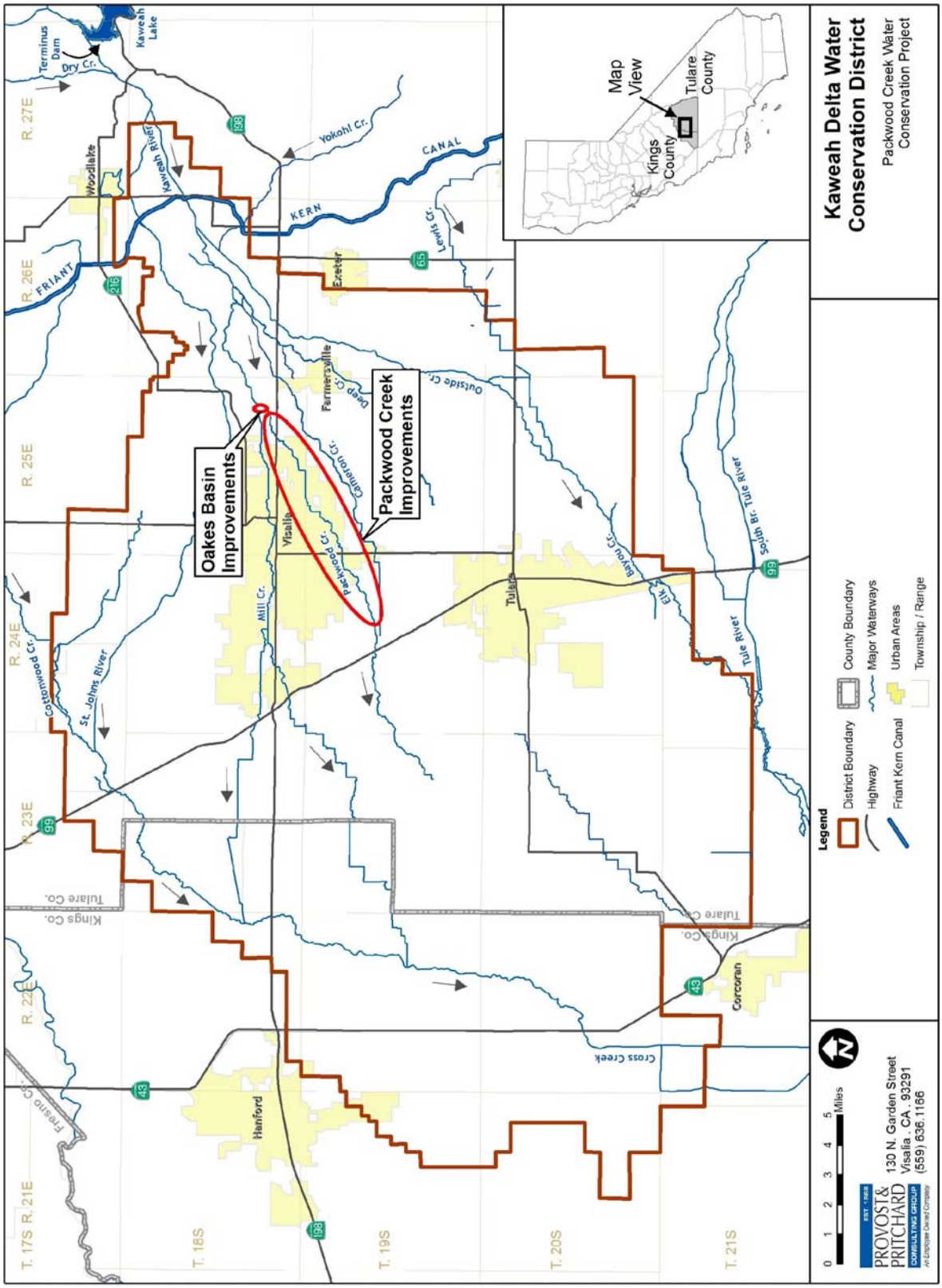


Figure 1: Kaweah Delta WCD Location Map

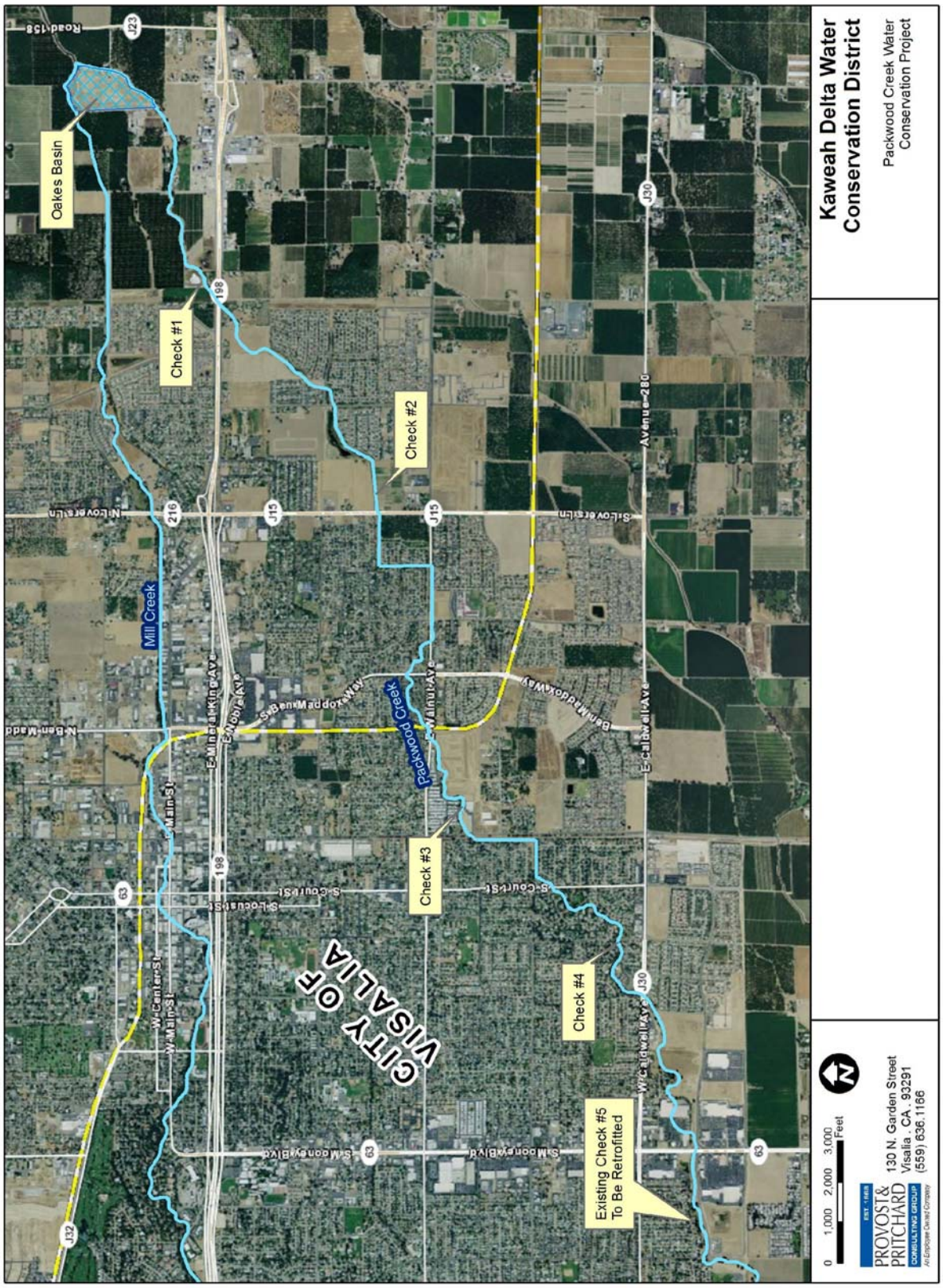


Figure 2: Project Location Map

(c) Water Delivery System

The District is a Water Conservation District whose primary purpose is management of water resources. However, the District does not deliver surface water to growers; as it controls very limited surface water resources. Rather it delivers water to water right holders (private ditch companies and other districts within its boundary) and/or delivers the water it controls to local basins, channels and streams for groundwater recharge. The District's delivery system includes approximately 209 miles of natural creek and river channels, and the District also owns over 40 recharge basins that encompass more than 5,000 acres. These facilities allow the District to effectively manage their available water resources.

Numerous public and private entities (including KDWCD) are water right holders within the Kaweah River Basin and divert water for irrigation from the Kaweah River and its distributaries. These entities cooperatively manage the water supplies and water rights through an association called The Kaweah and St. Johns Rivers Association. Through an agreement with the Association, the KDWCD staff serves as staff to the Association in the performance of watermaster duties, including administration of agreements and record keeping. About 250,000 acres (about 73%) within the KDWCD have access to surface water supplies from the river system. Because of the erratic nature of flow in the Kaweah River, which varies substantially in magnitude from month to month and from year to year, nearly all of these lands obtain supplemental irrigation supply from groundwater. All municipal and industrial water uses within the KDWCD are supplied from groundwater.

Terminus Dam and Reservoir, located on the Kaweah River about 3½ miles to the east of the KDWCD easterly boundary, was completed in 1961 by the U.S. Army Corps of Engineers. This project was constructed for purposes of flood control on the Kaweah River and to provide storage and river re-regulation for irrigation purposes. The original dam was an earthfilled structure about 250 feet in height, and had an initial reservoir capacity of about 150,000 acre-feet. KDWCD had a contract with the United States (Reclamation) for the original Terminus Dam construction which included repayment for the portion of the project costs allocated to water conservation purposes. That contract has been paid off, however the District does have a contract with Reclamation for operations and maintenance of the Dam. Lake Kaweah, created by Terminus Dam, has recently been enlarged, with storage now increased to approximately 183,000 acre-feet. The enlargement is estimated to provide an additional 8,500 acre-feet per year of irrigation water supply to the KDWCD service area (see Revised Decision Document, U.S. Army Corps of Engineers, 1999).

As previously mentioned, the District's distribution facilities are over 200 miles of natural creek and river channels (**Figure 1**). **Table 1** lists the diversion points associated with the District's conveyance system. However, since the system is made up of natural channels, **Table 1** lists the locations where these channels converge and diverge, or where waters are stored and diverted through significant reservoirs.

Table 1 KDWCD Conveyance Facilities

	Diversion Points	Description
1	Terminus Dam	Kaweah River
2	St. Johns River/Cross Creek	Cottonwood Creek (Tributary)
3	Kaweah River	St. Johns and Lower Kaweah River
4	Lower Kaweah River	Mill Creek, Packwood Creek, Cameron Creek, Deep Creek, Outside Creek, and Elk Bayou Creek
5	Kaweah River	Dry Creek (Tributary)
6	Outside Creek	Yokohl Creek and Lewis Creek (Tributary)

(d) Energy

KDWCD is a participant in the Kaweah River Power Authority (KRPA) which generates hydroelectric power through the 20 MW power plant located at Terminus Dam on the Kaweah River. Power from this plant is sold to Southern California Edison Co. (SCE). In addition, several small scale solar sites are located within the District to power various low energy demand equipment. Electricity in KDWCD is principally supplied by SCE, a large utility with diversified generation facilities.

The District's primary purpose of groundwater recharge has slowed the decline of groundwater. This has provided energy savings to groundwater pumpers in the District, as a result of maintaining higher groundwater levels for lower lifting requirements for pumping.

(e) Past Working Relationships with Reclamation

KDWCD has been a historical short-term water contractor (1955 to 1978) within the Friant Division of the Central Valley Project (CVP). The District also has a history of receiving and executing temporary contracts on a year-by-year basis and taking delivery of the Friant Division supplies if they are available. The District has demonstrated a long-term diversion history of CVP water averaging approximately 28,800 acre-feet/year (1955-1998).

In 1993, the District began the Kaweah River Corridor Enhancement Study with funding from Reclamation. The purpose of this study was to evaluate the feasibility of integrating the management of water resources – including surface water, storm water and groundwater – with the management of biological resources – including habitats and the species that depend on those habitats – in the 23,000 acre Kaweah River delta. Phase 1 of the study involved identifying and assessing sites that could meet the District's water and biological resource objectives. During Phase 2, the recommended sites from Phase 1 were evaluated for hydrogeologic and hydrologic capacity, habitat restoration potential, economic and site acquisition concerns, environmental compliance issues, water rights, and costs. Phase 1 and 2 of this study were funded by the Bureau and the District is currently working on Phase 3 which is the development of a Habitat Conservation Plan/Natural Community Conservation Plan.

In 2010, KDWCD became a long-term CVP contractor in the Friant Division. This assignment was accomplished through a resource exchange with Ivanhoe Irrigation District (IID), where KDWCD provided local surface water to IID and defined storage in Terminus Reservoir, and in exchange received entitlement to 1,200 AF of Class 1 water and 7,400 AF of Class 2 water. As part of having this contract, the District is required to have a Water Management Plan (WMP). This document was completed in November of 2010 and accepted by the USBR in January of 2011.

Most recently the District was successful in applying for a FY2011 WaterSMART: Water and Energy Efficiency Grant. The $918,500 provided by Reclamation will be used to develop, the Paregien Basin, a $1,850,000 project for water recharge and regulation with ancillary benefit for habitat, energy, and flood control.

3 . Technical Project Description

Major project tasks include the following:

Task 1 – Project Administration: Overall Project coordination. Communication and contract management with USBR. Request budget and contract revisions, if needed. Manage subconsultants. Organize and attend progress meetings with USBR and stakeholders. Preparation of semi-annual progress reports and a final report.

Task 2 – Environmental and Permitting: Prior to the construction efforts, the District will need to obtain a 1602 Permit through the California Department of Fish and Game and a 404 permit through the Army Corps of Engineers; comply with the California Environmental Policy Act (CEQA), through what is anticipated to be a mitigated negative declaration; and provide the information necessary to Reclamation in complying with the National Environmental Policy Act (NEPA).

In addition to the above mentioned environmental and permitting documents, the District will need to apply for and obtain a Storm Water Pollution Prevention Plan (SWPPP) through the State Water Resources Control Board and a Dust Control Plan (DCP) through the California Air Resources Board. All of these documents are standard in the area for any large construction effort where heavy machinery is necessary.

Task 3 – Engineering/Inspection/Construction Staking: The two components of the Packwood Creek Water Conservation Project are at different design levels. Currently the Oakes Basin habitat improvement portion of the Project is at a 30% design level, and the Packwood Creek improvement portion can be categorized as a conceptual (10%) design (refer to **Appendix G** and **Appendix H** for Project preliminary plans). Surveying, as well as, preparation of final construction plans and specifications for earthwork, structures, habitat features and miscellaneous facilities are underway and are scheduled to be completed by December, 2012. Also, contract documents and bid solicitation documents will be developed for the Project. As part of the Project's design, easements will be acquired for each site.

The District's engineering consultant will provide construction inspection and staking services. These services are anticipated to be on-going throughout the Project's construction. In addition to those services, the consulting engineer will also provide miscellaneous engineering services if needed, should any changes occur to the Project's design during construction.

Task 4 – Construction of Facilities: The construction is anticipated to be completed through two, competitively bid contracts. The first contract will be for the improvements at Oakes Basin; drilling a supply well and installing an irrigation system. The second contract will be for Packwood Creek improvements; the construction of four new automated check structures, the retrofitting of an existing check structure with an automated gate, and miscellaneous earthwork.

Once all of the proposed facilities are constructed, a SCADA system will be developed, installed and integrated, so that the five automated check structures in Packwood Creek and the Oakes Basin site are incorporated into the existing SCADA network of the project proponents. This will allow for the remote monitoring of flow rates and water levels.

Project Background and Description: One of the main purposes of the Kaweah Delta Water Conservation District is to promote groundwater recharge within its boundary. In 2001, as a result of an agreement between KDWCD and City of Visalia (COV), the Visalia Water Management Committee (Committee) was formed. COV and KDWCD are voting members, and TID attends and participates in quarterly Committee meetings. COV held a Proposition 218 election to raise assessments of landowners within the COV boundary. Through this election, $100,000/year (adjusted to CPI) is acquired by COV, and utilized by the Committee, to maintain and enhance groundwater levels in and around the COV. The Committee acquires surface water for groundwater recharge, and identifies and implements projects to increase groundwater recharge potential. The Packwood Creek Water Conservation Project has been identified by the Committee as a project that will efficiently and advantageously recharge groundwater, since this location is up-gradient of COV, meaning groundwater flows toward the COV, maximizing their use and minimizing water loss outside of KDWCD boundary; KDWCD's main purpose.

With the implementation of this Project, KDWCD will facilitate a transfer of water from Tulare Irrigation District (TID) to the COV; both agencies being within the KDWCD boundary. With the current addition to the Visalia Water Conservation Plant (WCP), effluent tertiary treated water will be delivered from the WCP to a TID irrigation ditch. As part of this exchange, TID is expected to return wet year water to the COV for the purpose of recharging their municipal supply. The terms of this agreement is that for every 2 AF of tertiary treated water delivered to TID, TID will return 1 AF of wet year water.

One issue of returning wet year water is the timing and quantity of the water. TID can make the water available, but COV is limited on locations to recharge. For this reason the Packwood Creek Water Conservation Project will utilize an upstream basin (Oakes Basin) to store surplus waters to be regulated into Packwood Creek. Packwood Creek improvements will consist of five automated check structures in Packwood Creek; four of these check structures will be new, and one will be retrofitted. The locations of these check structures were identified in a previous study as locations that will optimize storage, wetted perimeter, and thus increase recharge capacity. Automating the structures will allow for the high water level to be maintained over various flow rates. To tie-in the existing Oakes Basin, SCADA improvements will be necessary to remotely monitor water levels and flows from Oakes Basin into Packwood Creek toward maximizing deliveries. The automated check structures will also be remotely monitored through SCADA.

The Project is expected to have two main benefits. The first is a water supply benefit that will be attained through the conservation of unstorable storm and flood waters. The groundwater recharged through the Project will increase the reliability of groundwater resources in the area and will in part mitigate the overdraft of COV. The second is a habitat improvement benefit that will be attained through restoration of Valley Oak Riparian Forest Habitat in the perimeter of Oakes Basin.

Project Schedule: Project design is expected to be complete by December, 2012. CEQA will be completed by September 2012, followed by NEPA (December, 2012). The District expects to address CEQA with a Mitigated Negative Declaration (MND), and NEPA with a Finding of No Significant Impact (FONSI). Permitting is likely to be accomplished by December, 2012 as well. The Project will then be advertised for qualified contractors to bid on. Construction will be broken into two phases, to balance out fund distribution from Reclamation, and not exceed the $750,000 maximum distribution of Funding Group II. Assuming a normal water year, Phase 1 is planned to begin in April, 2013, lasting roughly 3 months, to be completed by July, 2013. Phase 2 is planned to begin in April, 2014, lasting roughly 3 months, to be completed by July, 2014. This schedule will provide a 4 month buffer to be complete by the end of Reclamation's Fiscal Year 2014, September, 2014.

Project Benefits: Project benefits will include the following:

- Water conservation
- Groundwater recharge
- Storm and flood water capture
- Increase in groundwater levels
- Improvement in groundwater quality
- Preservation of groundwater resources
- Improved water reliability
- Improved water management
- Increased energy efficiency at nearby wells
- Wildlife habitat enhancement
- Water marketing

Funding: Funds will be provided by KDWCD on behalf of the Committee, as well as funding though California's Proposition 84 IRWM Grant. The dollars not contributed by federal funds or by way of in-kind contributions will be made with money available from the Committee's fund. KDWCD's cost share will represent 50.3% of the total estimated Project cost. See **Appendix D** for a copy of Committee's updated funding report.

4 . Evaluation Criteria

(a) Water Conservation

Subcriteria No. 1: (a) Quantifiable Water Savings. Describe the amount of water to be saved.

A majority of the lands within KDWCD are delivered water by member water agencies or ditch companies (see **Appendix I** for maps showing water management entities within the KDWCD boundary). The District receives surface waters from the Kaweah and St. Johns Rivers, and the Friant Division of the CVP, and manages deliveries to water right holders within KDWCD boundary through their system of natural creeks and channels. Water from the Kaweah and St. Johns Rivers is diverted at several locations downstream of Terminus Dam. Water from the CVP is conveyed to the District from Millerton Lake behind Friant Dam through the Friant-Kern Canal and is contracted through the Bureau. The District's total average annual water supply from all sources is approximately 64,783 AF/yr. This average annual surface water supply value was estimated by combining the average Kaweah River and St. Johns River entitlement between 1965 and 2002 (23,406 AF), and the average annual supply from the District's Friant Division, CVP contract supply since acquiring in 2010 (41,377 AF). The 41,377 AF of Friant Division, CVP supply includes a large quantity of uncontrolled season water, which is not typical. Expected future average annual CVP supply can be estimated by using the Class 1 contract supply and assuming 89% average annual delivery and Class 2 contract supply and assuming 20% average annual delivery, for a calculated CVP supply of 2,548 AF/yr.

The proposed Project is located on Packwood Creek, a distributary of the Lower Kaweah River. While the District will own and operate the proposed facilities, other water purveyors' water will be conveyed to Packwood Creek via Oakes Basin. The terms of the transfer that KDWCD will facilitate with the proposed improvements, is that Tulare Irrigation District (TID) will return 1 AF of uncontrolled season water to City of Visalia (COV) for every 2 AF of tertiary treated wastewater TID accepts from COV. The COV is expected to deliver 8,500 AF/yr to TID. This means that TID is obligated to return 4,250 AF/yr. However the proposed facility is only expected to recharge 1,465 AF/yr (See benefit estimate, **Appendix E**). Uncontrolled season water is a condition of release where districts can acquire amounts of Class 2 water in excess of their contract maximum due to efforts by the Bureau to avoid floodwater declarations and maximize the surface water deliveries to long-term contractors. By TID delivering COV uncontrolled season water, water is conserved since this creates an increase in surface water delivered within the KDCWD boundary (**Figure 3**).

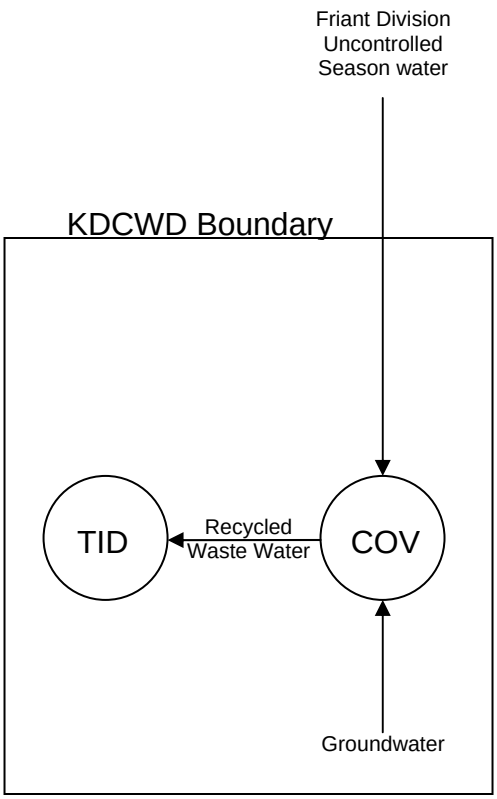


Figure 3. TID and COV Exchange Water Balance

In addition to the arrangement above, KDWCD has access to other surplus water available to conserve at the site. This includes KDWCD's entitlement beyond historic diversion from their Kaweah River rights that could be used to conserve additional available surface waters through groundwater recharge. Also, KDWCD's Friant Division, CVP contract allows the District access to uncontrolled season waters that could be recharged in this new facility when other supplies are not in use.

Subcriteria No. 1: (b) Improved Water Management. Describe the amount of water better managed.

This Project includes automated control gate operation, SCADA, and water level sensors for improved flow measurement. All water passing through will be better regulated and better managed by this facility. Also, since more than just KDWCD supply is delivered through Packwood Creek, the water better managed may exceed KDWCD's average annual supply. With the improvements, Packwood Creek could be in operation at anytime during the year. Whether it is TID redirecting water in summer months to meet peak irrigation demands, KDWCD recharging surplus water, COV disposing of storm water, or the conservation/marketing efforts of this grant application; all of which will be better managed.

SCADA at the Packwood Creek and Oakes Basin sites will significantly improve the amount of remote information available to KDWCD, TID, and COV staff. Timely decisions can then be made in flood events with accurate information on current conditions. The existing system has no remote information in the Project area causing District staff to make decisions about safe diversions based on estimated flows that were often set hours before and miles away from the Project site.

The Packwood Creek Water Conservation Project will significantly improve the metering of flows through Packwood Creek in the Project area as the 5 new automated gates are equipped with metering equipment. These facilities will provide information that can be analyzed to determine the seepage losses in the Packwood Creek in this area, and thereby significantly improve water management.

The automated gates will allow the District to use existing basins to maximize recharge area and avoid spills during off-hours by creating a more flexible and reliable system through the regulation capabilities from the Oakes Basin.

The Packwood Creek Water Conservation Project is a groundwater recharge project on the east side of KDWCD in an area that has the ability to benefit both the unconfined and confined groundwater aquifers in the west of the District. If the Project site were located in other areas in the District, it would only have the ability to potentially benefit one of these aquifers. The Project site's location maximizes benefit to the largest number of groundwater users and thereby improves KDWCD's water management.

Between the years of 1980 and 2007, the Average Maximum Daily Flow in Packwood Creek was 105 CFS. The duration of flow in Packwood Creek during this period was 4.7 month, on an average annual basis. Based on this historical data, an average of 29,360 AF/year passes down Packwood Creek, and will all be better managed by the improvements of the Packwood Creek Water Conservation Project. This is approximately 45% (29,360/64,783) of the District's average annual supplies.

Subcriteria No. 2: Percentage of Total Supply. Describe the percentage of total water conserved.

The Project will conserve an estimated 1,465 AF/year (**Appendix E**). This represents 1,465/64,783 = 2.3% of the total water supply the District delivers in an average year. However, when compared to the District's expected total Federal contract entitlement through the CVP, the total water conserved is 1,465/2,548 = 57.5% of the total CVP water supply.

The average annual water supply for the local river system (23,406 AF/yr) is based on average entitlements from 1965 to 2002. Since receiving their CVP contract in 2010, the District has received 41,377 AF/yr on an average annual basis from the Friant Division, CVP. Summing these two supplies equates to 64,783 AF/yr average annual

supply.

It should be noted that this short term CVP data accounts for a large amount of Section 215 (floodwater) that is not typically available. It is expected that future long term data would be 89% of their Class 1 water and 20% of their Class 2 water available on an average annual basis. This equates to 2,548 AF of average annual CVP supply.

Subcriteria No. 3: Reasonableness of Cost

The total cost of the Project is $1,610,866. The average annual amount of water conserved and better managed from the Project is approximately 1,465 AF, and 29,360 per year, respectively.

The Project costs used are based on actual recent project costs from completed similar District projects. A detailed estimate of probable Project costs is summarized in **Appendix B**. An average life expectancy of the facilities is estimated at 30 years. This is based on a combination of District experience, manufacturer's information, and life expectancies listed in *Design and Operation of Farm Irrigation Systems*, ASAE Monograph No. 3, 1981 (pg 58).

$$\frac{\$1{,}610{,}866}{1{,}465 \text{ Acre-Feet Conserved} \times 30 \text{ Years}} = \$36.65/\text{Acre-Foot}$$

$$\frac{\$1{,}610{,}866}{29{,}360 \text{ Acre-Feet Better Managed} \times 30 \text{ Years}} = \$1.82/\text{Acre-Foot}$$

Some benefits gained from this Project are:

- Expanded groundwater recharge capabilities;
- Conservation of storm and flood waters, and excess supplies;
- Automation of a control gate with telemetry equipment for offsite monitoring;
- Flow control for the Project facilities;
- Reduction of operation spills and fluctuations;
- Improved water control technology through telemetry and gate control;
- Timely and accurate data for water management decisions;
- Collaboration with other local agencies regarding water management decisions.

(b) Energy-Water Nexus

Subcriteria No. 1: Implementing Renewable Energy Projects Related to Water Management and Delivery

The Kaweah Delta WCD is currently active in renewable energy development in rural areas, as is evident by their involvement in the Kaweah River Power Authority (a joint-powers authority the District partners in with the Tulare Irrigation District) since 1982. In 1992, the KRPA hydroelectric plant went online, capable of supplying 17 megawatts of energy to Southern California Edison.

The Packwood Creek Water Conservation Project will provide a new downstream storage/regulation/recharge capacity for use in the effort to maximize power generation through KRPA's hydroelectric plant at Terminus Dam by releasing stored waters during peak generation times, while maintaining growers' ability to schedule irrigation water supplies through the use of regulating reservoirs between the dam and the growers.

Subcriteria No. 2: Increasing Energy Efficiency in Water Management

Increased Groundwater Levels. The Project will recharge groundwater resources with surplus surface water supplies in an attempt to reduce the energy consumed by the residents of the COV which pumps groundwater resources from COV owned groundwater wells. The reduction of electrical demand from groundwater use will benefit users statewide and will require less power to be produced thereby making available sources of energy more renewable than without the Project. According to UC Davis's Tulare County Cooperative Extension, a $0.15 savings for each foot of lift they save for each acre-foot pumped, can be realized. So, raising the water level from 100' below ground surface (bgs) to 85' bgs, while pumping 145 AF/day, will save $326.75/day. This all assumes a $0.10/kWh energy rate.

Floodwater Pumping Energy Offset. Packwood Creek Water Conservation Project will allow KDWCD to deliver wet year waters and accomplish groundwater recharge with supplies that previously would have caused flooding in the Tulare Lake bed. The delivery of this water to Oakes Basin and Packwood Creek will be by gravity, and therefore no energy for the conveyance would be required. This is in contrast to the situation if the flood water is allowed to flow to the Tulare Lakebed. When the Tulare Lakebed is flooded, large areas of bermed farm ground are flooded and then the stored waters are pumped back out later in the year for use as irrigation supplies. The soils in the area are not very permeable and in some cases it takes up to three years to dry these flooded areas back out, but the reuse of the flood water is very energy intensive. Delivery of the flood water to the Project would reduce overall energy consumption by a avoiding a portion of the energy used to reuse floodwater.

Small Scale Solar. It is proposed that automated gates and SCADA sites be equipped with solar panels to operate the gates, power radio communications, and PLC function.

(c) Benefits to Endangered Species

The Packwood Creek Water Conservation Project will develop a long-term project that preserves a property and establishes Valley Oak Riparian Forest habitat that supports local endangered species. The 42-acre Oakes Basin site is located within the historic Kaweah River Delta. In the mid 1800's the Kaweah River Delta supported the largest stand of valley oak (*Quercus lobata*) riparian forest in the world (McClaron 1983). The vast majority of this habitat type has since been eliminated as a result of conversion to agriculture. A significant component of the Packwood Creek Water Conservation Project includes the restoration of Valley Oak Riparian Forest.

The Oakes Basin is a project that has been in development since the mid-1990s, by both the KDWCD and the COV. In 1999, along with plans to build the basin, additional plans and specifications were prepared for habitat restoration. The Basin was constructed in 2007, however the plantings and irrigation systems have yet to be installed.

Also, the Packwood Creek Water Conservation Project will enhance the endangered species habitat on the Project site through the Oak restoration and specific vegetation plantings that are planned. Also, the increased regularity of ponded water in Packwood Creek and in Oakes Basin should benefit local endangered species by providing food, water, and habitat to these and potentially other sensitive species. The Project will also likely be occupied by non-sensitive species, and thereby reduce competition for food, water and habitat with threatened species in surrounding areas, providing endangered species a chance to thrive.

KDWCD will prepare a California Environmental Quality Act (CEQA) Initial Study for the proposed Project. The study will address biological issues such as, it is believed that this site could provide potential habitat to the federally endangered and the state threatened as identified by the California Natural Diversity Database (CNDDB), some of which are listed below.

- San Joaquin kit fox (Vulpes macrotis mutica), which is State and Federally Endangered;
- Swainson's Hawk (Buteo swainsoni), which is State Threatened;
- Tipton Kangaroo Rat (Dipodomys Nitratoides Nitratoides) which is State and Federally Endangered;
- Great Valley, Valley Oak Riparian Forest;
- Valley Sacaton Grassland.

(d) Water Marketing

(1) Estimated amount of water to be marketed

KDWCD has existing water marketing arrangements with COV to cooperatively work towards a stable and reliable water supply for COV. In recent years, KDWCD has marketed or developed transfer agreements for significant amounts of surface water to COV through this partnership. The specter of declining groundwater levels could significantly impact COV's only source of reliable drinking water. The Packwood Creek Water Conservation Project would develop the facility that would continue to facilitate these water marketing arrangements.

The main transfer being fostered by KDWCD through this application is between TID and COV. Through the 2 AF to 1 AF exchange agreement between TID and COV, TID will return 1 AF to COV for every 2 AF that COV delivers to TID from their tertiary wastewater treatment plant. With the proposed project COV can recharge a maximum of 1,465 AF/yr. By way of the agreement, this will result in twice as much being market to TID from the tertiary treatment plant (2,930 AF/yr).

(2) A detailed description of the mechanism through which water will be marketed

As mentioned above, TID will return 1 AF for every 2 AF of tertiary treated wastewater they receive from COV. TID will return this water in the form of uncontrolled season water from the Friant Division of the CVP. This is water that normally would not enter the KDWCD boundary; generating in an increase of surface water inflow that will offset groundwater overdraft. However, being Uncontrolled Season Water, it is not available every year, meaning this facility is available to recharge additional groundwater through short term water markets with entities other than TID, as detailed below.

The District has access to Friant Division, CVP and Kaweah and St. Johns River surface water supplies. Surplus Friant Division, CVP surface water supplies are regularly marketed by long-term contracting districts to other contractors. Agreements to implement transfers would have a determined duration, timing and amount of transfer. Costs for these transactions would be negotiated between the parties and agreed to in a written agreement drafted by the legal counsel for the parties.

Kaweah River Basin IRWM Group Members. KDWCD is a participating member of the Kaweah River Basin Integrated Regional Water Management (IRWM) Group. The California Department of Water Resources (DWR) has conditionally accepted KDWCD's Integrated Regional Water Management Plan (IRWMP) for the Kaweah River Basin and approved the Kaweah River Basin IRWM Group through their regional acceptance process in 2009. The current members of the Kaweah River Basin IRWM Group are:

County of Tulare	Exeter Irrigation District
City of Visalia	City of Lindsay
Kaweah Delta WCD	Lakeside Irrigation Water District
Tulare Irrigation District	City of Tulare

Given the proximity of the regional partners in the Kaweah River Basin IRWM, it would be the District's desire to create a market for surplus water supplies from regional partners before others that might be interested.

Kaweah System Open-Market Transfers and Sales. KDWCD is a member of the Kaweah and St. Johns Rivers Association, an umbrella organization representing water right holders on the Kaweah and St. Johns Rivers. KDWCD meets regularly with the entities in the Kaweah and St. Johns Rivers Association, and could announce water marketing opportunities at these meetings. All of these entities, including KDWCD, use water from the Kaweah and St. Johns Rivers that is conveyed through the delivery system of natural creeks and rivers maintained by KDWCD. As a result, KDWCD could feasibly take river supply from any of these entities given suitable conditions to all parties involved.

Friant System Open-Market Transfers and Sales. KDWCD is a member of the Friant Water Authority (FWA), umbrella organization representing water agencies that contract for water on the Friant Division of the CVP. KDWCD meets regularly with these agencies at FWA meetings, and could announce water marketing opportunities at these meetings. All of these agencies, including KDWCD, use water from the San Joaquin River that is conveyed through the Friant-Kern and Madera Canal. As a result, KDWCD could feasibly purchase additional CVP water supply from any of these agencies.

(3) Number of users, types of water use, etc. in the water market

In its current arrangement, KDWCD, TID, and COV, will be involved to exchange COV tertiary wastewater for TID uncontrolled season water from the Friant Division, CVP. However, this Project will also increase space available for recharge to the multiple users of Kaweah and St. Johns River water within the District and also Friant Division, CVP water users. There are many districts within the Friant Division, CVP place-of-use (over 30 long-term water supply contractors) that this recharge capacity could be marketed to.

Currently, KDWCD provides 100 percent of its water supply to groundwater recharge. In general, KDWCD would prefer to market water to local agencies so it helps to address local water tensions and benefit local groundwater resources. As previously mentioned, KDWCD can exchange water with any of the other long-term contractors within the Friant Division of the CVP.

(4) Discuss any legal issues pertaining to water marketing

KDWCD will obtain all necessary agreements, approvals and permits prior to any marketing arrangements. These will be obtained from USBR, DWR, and other relevant agencies. Pertinent legal issues will include water transfer and exchange regulations, place of use restrictions for CVP water, Reclamation law regarding uses of water, such as on excess lands, recent "9d" contract modifications for Friant Division, CVP contractors and proper tracking and oversight of the water sources in the arrangements. The process of water marketing in the Friant Division is fairly straight forward in that the District and the buyer would have to comply with the Bureau's regulations on transfers and state and federal environmental laws. As the water marketed would only be transferred and no long-term ownership of the contract entitlement would change, there are no significant legal issues pertaining to the water marketing within the long-term Friant Division contractor group.

(5) Estimated duration of the water market

The arrangement between TID and COV is intended to last the life of the project, however the quantities agreed upon may change with time. The duration of other markets would likely be on a year-to-year basis, meaning that each year KDWCD and COV would evaluate the intended water supply situation based on the developing hydrology and search for water arrangements that would make full use of the recharge site assuming a reasonable cost.

(e) Other Contributions to Water Supply Sustainability

(1) Will the project make water available to address a specific concern?

The proposed Project will provide water to address the following, specific concerns:

San Joaquin River Restoration Impacts. These supplies would partially address water supply shortages due to San Joaquin River Restoration impacts and heightened competition for finite water supplies within the San Joaquin Valley given urban growth by importing additional water in wet years and recycling wastewater. Also, this will aid all CVP water users south of the Delta by decreasing competition for surface water through the satisfaction of the District's need during times from available flood and surplus water from the Kaweah and St. Johns River.

Groundwater Adjudication. With the implementation of California Senate Bill x7-6, districts are to monitor groundwater levels for the states, California Statewide Groundwater Elevation Monitoring (CASGEM) program. This has many water purveyors believing that this is the first sign of groundwater adjudication. By attempting to stabilize groundwater, it is hopeful that KDWCD can fend off adjudication.

Domestic Water Supply Reliability. COV domestic water supply will be made more reliable through the additional recharge created by this Project. Being this Project is in close proximity and upgradient of COV, they will benefit from a more stable water table, and in turn, lower pumping costs and avoided replacement costs.

Surface Water Storage. It has been postulated that future climate variability may bring about more rain flood periods and less storable snow melt for the San Joaquin Valley's watersheds. Larger rain events will require more groundwater banking capacity to capture such water that previously remained in foothill reservoirs (Lakes Millerton and Kaweah). This Project adds recharge basin capacity for the District and should thus aid in mitigating for adverse impacts due to climate variability.

Beneficial use of Floodwater. This Project will develop and maximize storage space that will allow KDWCD to deliver surplus and floodwater from the Kaweah and St. Johns Rivers and the Friant Division, CVP for beneficial use and thereby reduce the hazardous floodwater that eventually reaches the Tulare Lake Bottom which is currently farmed.