IVANHOE IRRIGATION DISTRICT

Control System Project – 68 Main

Tulare County, CA

APPLICATION SUBMITTED TO THE
UNITED STATES BUREAU OF RECLAMATION
FOR A
WaterSMART: WATER AND ENERGY EFFICIENCY GRANT
(FUNDING OPPORTUNITY ANNOUNCEMENT NO. R13SF80003)

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January 2013

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APPENDICIES

TECHNICAL PROPOSAL

1. Executive Summary

a. General Project Information

Date:	January 17, 2012
Applicant Name:	Ivanhoe Irrigation District
City, County and State:	Visalia, County of Tulare, California

b. Project Summary

The Ivanhoe Irrigation District's (District or IID) Control System Project – 68 Main (Project) is to install a control system and construct related physical improvements to the District distribution system's 68 Main Lateral. This Project will be an addition to the District's current efforts to modify existing structures, add new control structures and install a control system for the District's 69 Main. That project was based on the 2006 Rapid Appraisal Process (RAP) Report (Report) completed by Dr. Charles Burt, P.E. of the Irrigation Training and Research Center, San Luis Obispo, California for the District. The report states, "It is very difficult to operate this system, requiring four (4) operators just to stabilize relatively inflexible deliveries on 10,000 acres. As a comparison, a typical California irrigation district has one (1) operator for every 10,000 - 15,000 acres and is able to provide more flexibility than IID can." Further, the Report states, "IID would like to modernize its system so that the beneficial first-time usage of its water allocation is improved. For example, even though this is a deficit-irrigation district, farmers must irrigate for 24 hours at a time in new trees even though they may only need 12 hours of irrigation. Ironically, there is over-irrigation during individual irrigation events, even though overall, the farmers operate in a deficit mode." The Project embodies a strategy that will enable the District to reduce spills from ends of pipelines, substantially improve water delivery flexibility to farmers and simplify the operation of the distribution system. The Project will result in quantifiable and sustained water savings and improved water management. Phase I of the Project will modify the District's 68 Main by installing a new flow control structure located at the Friant-Kern Canal and automating the five (5) control in-line gate valves located at the Junction Boxes (JBs) on the 68 Main. This change will allow the mains to operate under downstream control, yet maintain the current pressure head in the remaining 68 Main sections and related laterals. The automation is principally to add on to the 69 Main Supervisory Control and Data Acquisition (SCADA) system. In addition to the five (5) control in-line gate valves, the SCADA system will be connected to other critical features such as the terminal reservoir, the main venture and the North Wutchumna Pumping Plant. The SCADA system will also include installation of an interface with the office base station and programming. The improvements to the JBs include installation of low flow bypasses and the installation of air vents. Please refer to **Appendix B** for the Engineer's Estimate of Total Probable Construction Cost and same Appendix for the total Project cost estimate for the 68 Main improvements.

c. Project Duration and Estimated Completion Date

The proposed Project schedule (See **Appendix C**) is based on an award date of July 1, 2013, as described in the funding opportunity announcement. The Project length, which includes completion of design and environmental documents in addition to the proposed construction activities is scheduled to complete within 24 months of the notice of award, with an estimated completion date of June 30, 2015.

2. Background Data

a. Geographic Location

The District is located northeast of the City of Visalia in the County of Tulare, State of California. The District Location Map is presented as Figure 1.

b. Water Supply

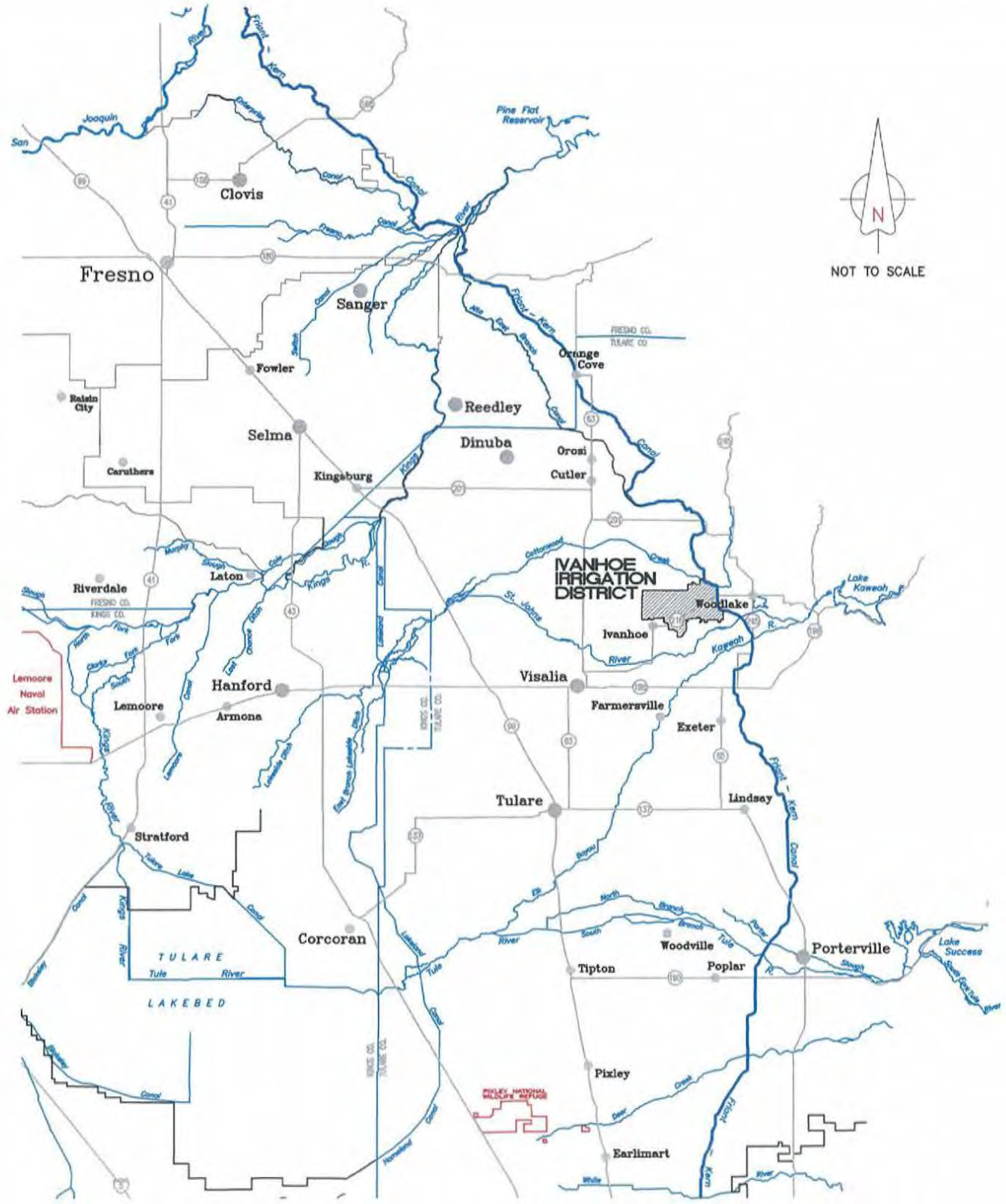
The District originally contracted with Reclamation for 7,700 acre-feet of Class 1 and 7,900 acre-feet of Class 2 surface water diverted from the Central Valley Project's Friant Division via the Friant-Kern Canal.

The District diverts supplemental surface water from the Kaweah River through the Wutchumna Ditch where the District takes its diversion and co-mingles the water with the CVP supply.

In 2010, the District finalized an exchange of water supply with the Kaweah Delta Water Conservation District (KDWCD). The primary objective for the District through the exchange was to secure and improve the dry year reliability of surface water to the District's growers. The District, through a partial assignment of 1,200 acre-feet per year of its Class 1 Friant-Division CVP contract water and 7,400 acre-feet per year of its Class 2 Friant-Division CVP contract water, received a portion of KDWCD's Longs Canal Company water (Kaweah River Supply), 2,500 acre-feet of storage behind Terminus Dam and a cash payment. The provision of 2,500 acre-feet of storage behind Terminus Dam in Lake Kaweah brings an element to the District that they previously did not have. The District has historically been unable to use its Wutchumna Water Company spring-time flows from the Kaweah River for delivery to its customers because the irrigation demand in the District typically is not sufficient to deliver all available flows. Through the exchange, the District will be able to store up to 2,500 acre-feet of those flows for delivery when demand for surface water is at its peak, resulting in less groundwater pumping in the District to meet irrigation demands.

The following is the District's average annual water supply:

- 6,500 Class 1 - Friant-Kern Canal (9(d) Repayment Contract)
- 500 Class 2 - Friant-Kern Canal (9(d) Repayment Contract)
- 4,500 Wutchumna Ditch Company (Stock Ownership)



LOCATION MAP
WATER SMART APPLICATION
IVANHOE IRRIGATION DISTRICT

L:\Ivanhoe Irrigation District\Water Smart Study\FIGURE 1 - LOCATION MAP.dwg

- 1,000 Long's Canal Company (Resource Exchange)
- 12,500 AF Total

c. Water Delivery System

The District water distribution/delivery facilities were constructed in the 1950's and are comprised of about 48 miles of pipeline ranging in sizes from 12 inches to 54 inches in diameter. There are four (4) booster pumping plants, three (3) groundwater recharge basins and 450 farm service outlets which are part of the distribution/delivery system. See **Appendix D** for the District Boundary and Distribution System Map. The distribution system was designed by the United States Bureau of Reclamation (USBR). According to the District's Water Management Plan, the distribution system facilities were transferred to the District for operation and maintenance purposes on March 1, 1956. The District has been a long-term contractor with the USBR since the 1950's.

d. Energy

The Project has the potential to save an estimated 234,667 kilowatt hours per year by reducing the amount of groundwater pumped. See **Appendix F**. Solar panels are also planned to be installed at remote sites where the threat of vandalism is low and the power requirements can be satisfied by this source.

e. Past Working Relationship with Reclamation

The District has a long working and contract relationship with Reclamation. The District was one of the initial long-term contractors for both a Class 1 and Class 2 supply from Reclamation's Friant Division and is now a permanent 9(d) contractor. The District contracted with Reclamation for the design, construction and financing of its distribution system with the debt service now being retired. The District is awaiting the transfer of title to the facilities. The District works closely with Reclamation on compliance issues such as water management and depth to groundwater reporting. The District is also the recipient of WaterSMART funding through the programs 2011 awards, with the project being the Control System Project – 69 Main which is the complement to this application.

3. Technical Project Description

Major Project tasks are summarized below. See also **Appendix B**, Estimate of Total Project Cost, for tasks.

Task 1-Environmental: Prepare environmental documentation necessary for California Environmental Quality Act (CEQA) Guidelines compliance. A Negative Declaration is anticipated to be the final CEQA determination given the Project description. The District will assist the United States Bureau of Reclamation (Reclamation) in their efforts to comply with the National Environmental Policy Act (NEPA).

Task 2- Engineering/Inspection: Preparation of Project Plans and Specifications for

the defined Project improvements will be completed and provide inspection and construction administration services.

Task 3- Construction: Construct proposed improvements. The construction efforts will be split into two (2) separate contracts.

Task 4- Project Administration: This Task includes efforts to collect both pre-project monitoring data and post-construction monitoring data. In addition, overall Project coordination activities will be performed, contract management with Reclamation will be conducted, and the preparation of semi-annual reports and the final Project report will be completed.

Project Benefits:

- Makes additional water available for crop irrigation purposes;
- Reduces groundwater pumping;
- Reduces operational costs; and
- Improves water supply flexibility.

Funding: The District will solely fund the dollars not contributed by federal funds. The District's cost share will represent 60.1% of the total estimated Project cost. See **Appendix G** for a copy of the District's financial information.

4. Evaluation Criteria

a. Water Conservation

Subcriterion No. A.1(a): Quantifiable and sustained Water Savings. Describe the amount of water saved.

The Proposed Project is expected to provide an improved level of water delivery flexibility by automating the inline flow control valves along the 68 Main and monitoring the terminal reservoir, the sub-laterals from the 68 Main and the North Wutchumna Pumping Plant. The quantifiable water savings is comprised of three (3) components: 1) reduction of water pumped due to better water delivery flexibility (413 AF); 2) elimination of water lost to over irrigation (413 AF), and 3) reduction of pumped water during frost protection periods (211 AF). See **Appendix F** for calculation.

The District's water delivery system currently requires the water to be delivered to a grower's turnout over a 24-hour period. The District's smaller parcels (20 acres or less) have a difficult time taking water over a 24-hour time period because smaller parcels have less flexibility to take a full 24 hour supply and put it to beneficial use. As a result, growers on the smaller parcels pump groundwater instead of taking delivery of surface water. The District overlies a groundwater basin that is in a chronic overdraft condition, thus the efforts are counterproductive.

An annual estimate of the amount of water pumped from parcels 20 acres and less, in size

serviced by the 68 Main is 340 AF. The Project's water delivery flexibility capabilities will encourage owners of smaller parcels to take delivery of surface water rather than pumping groundwater from the overdrafted basin. The cost to pump groundwater is estimated to be $40 per acre-foot. The cost of delivered water during the 2012 water year was $80.00 per acre-foot and may be reduced in the future due to accelerated capital debt reduction.

By automating the 68 Main distribution system, there will be an elimination of over irrigation. The current system also requires water be taken over a 24-hour time period. The improved flexibility to take surface water will result in growers being able to split a 24-hour supply thus reducing groundwater pumping and optimizing surface deliveries. **Appendix F** presents a calculation estimating the volume of water lost to over irrigation. The conserved water will first be made available to other growers in the District. The growers who take the conserved water will be able to turn off their pumps and therefore reduce the amount of groundwater pumped. The conserved water may also be made available to other Friant Division, CVP water contractors.

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

The District's 68 Main water deliveries account for about 6,742 AF of the District's total delivered water supply. By automating the 68 Main, the total water supply delivered through the 68 Main will be better managed.

$$\frac{\text{Estimated Amount of Water Better Managed}}{\text{Average Annual Water Supply}}$$

$$6{,}742 \text{ AF}/12{,}500 \text{ AF} = 53.94\%$$

Subcriterion No. A.2: Percentage of Total Supply.

The percentage of the total surface water supply conserved directly as a result of this project is estimated at 3.3. the conserved component as derived in **Appendix F** is 413 AF and the total annual surface water supply is 12,500 AF.

$$\frac{\text{Water Conserved}}{\text{Total Water Supply}} = \frac{413}{12{,}500} = 3.3\%$$

Subcriterion No. A.3: Reasonableness of Cost

The Project cost is based on consultations with construction contractors and fabricators familiar with the type of improvements proposed. The Improvement life is based on weighted average of the estimated life of each bid item. Please refer to **Appendix F**.

Reasonableness of cost is calculated below:

$$\frac{\text{Total Project Cost}}{\text{Acre-feet Conserved x Improvement Life}}$$

$752,500/(__413__AF x 38.1 years) = $47.82AF-Yrs.

Total Project Cost
Acre-feet Better Management x Improvement Life
$752,500 (6,742 AF x 38.1 Years) = $2.93/AF-Yrs.

b. Energy-Water Nexus

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

The Project does not directly implement a Renewable Energy Project.

Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

The Project has the potential to save an estimated 234,667 kilowatt hours per year by reducing the amount of groundwater pumped. See **Appendix F**. Solar panels are also planned to be installed at remote sites where the threat of vandalism is low and the power requirements can be satisfied by this source.

c. Benefits to Endangered Species

On first examination, the project is endangered species neutral. All of the construction components involve elements of the existing water distribution system. The majority of these elements are located immediately adjacent to County of Tulare road rights-of-ways. No additional habitat benefits are created.

d. Water Marketing

(1) Estimated amount of water to be marketed. 413 AF.

This amount of water is generated as a result of an individual irrigator receiving surface water for less time than the current minimum 24-hour period and therefore providing the opportunity for another irrigator to refrain from utilizing groundwater and, in-lieu, utilizing the remainder of the time frame that the surface water is available. The control system and SCADA system capabilities are the sole contributors to this capability. See **Appendix F** for calculation and basis.

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

The conserved water will be either marketed to other water users in the District service area or to other Friant Division, CVP contractors. The priority transfer will be to the Kaweah Delta Water Conservation District due to the shared groundwater basin benefits.

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

The number of users in terms of individual water users is only limited by the delivery facilities. The type of water use could be agriculture, municipal or industrial based on existing uses in the area surrounding the District.

(4) Discuss any legal issues pertaining to water marketing.

The District's Friant Division, CVP transfer abilities are, for the most part, limited to other federal contractors. The District's Kaweah River supplies made available through Wutchumna water and Longs Canal Companies stock ownership are limited to water users located in Tulare County and in proximity to available delivery channels.

(5) Estimate duration of the water market

The potential for water transfers and water markets vary with each water year. Due to limited carry-over for Friant-Kern Canal allocations and no carry-over capability for the Wutchumna Water Company and Longs Canal Company supplies,, the duration of the water market is limited to each irrigation season.

e. Other Contributions to Water Supply Sustainability

(1) Will the project address an adaptation strategy identified in a WaterSMART Basin Study?

A WaterSMART Basin Study has not been accomplished for the area in which the District is located. The Project does, however, address an adaptation strategy which is in the process of implementation within the Kaweah River Basin. The first step in the strategy, which is now implemented, is the automation of the measurement and control of releases from Terminus Reservoir into the Kaweah River and its distributaries. Features of the SCADA System implemented for the Kaweah River include flow measurement at various locations along the River and automated controls at major locations such as McKay Point and Rocky Ford.

The second implementation arena is that related to Wutchumna Ditch. The introduction of water supplies available to the District from the Kaweah River through stock ownership in the Wutchumna Water Company as well as the exchange supplies available from the Longs Canal Company are regulated through facilities of Wutchumna. Flow control and automation exist on said system at its point of diversion from the Kaweah River and steps are underway to automate additional elements of the system including releases from Bravo Lake which is a Wutchumna owned storage and re-regulation facility discharges from which are diverted by the District into both Lateral 68 and Lateral 69. The SCADA System Project for the District has as an overall goal the capability to monitor the flow rate and the control of same from discharge from Terminus Reservoir all the way to the individual grower deliveries.

(2) Will the project expedite future on-farm irrigation improvements, including future on farm improvements that may be eligible for NRCS funding?

At the current time, ordering and delivery procedures in place for the District are based on a minimum run time of 24 hours. As many of the on-farm deliveries are geared for 12-hour sets, individual growers must rotate their orders between two (2) sets in order to accommodate the District Rules and Regulations. The implementation of the Project will allow for initial steps to be taken to begin to address a delivery system with less than 24-hour set capability and hopefully eventually allow for conversion to an on-demand operational format. As the District's capability in this regard improves, modifications will need to follow at the on-farm level in order to achieve the water conservation efficiencies which will be available. Based on current NRCS funding program criteria, the improvements in vision to be employed on-farm are eligible for funding and, if program requirements remain unchanged, said improvements will continue to be eligible for funding in the future.

(3) Does the project include other benefits to water supply sustainability?

The implementation of the Project will allow for benefits to accrue to the arena of water supply sustainability. As the area of the state in which the District is located is experiencing a groundwater overdraft condition and every acre-foot of surface water supply is of significance. The more accurate grower water deliveries are and the closer which those deliveries are to plant demand optimizes the utilization of the available surface water supplies, enhancing the water supply sustainability of the District's surface sources.

f. Implementation and Results

Subcriterion No. F.1: Project Planning. Does the project have a Water Conservation Plan, System Optimization Review, and/or district or geographic area drought contingency plans in place? Does the project relate/have a nexus to an adaptation strategy developed as part of a WaterSMART Basin Study?

At the time this application was generated the update to the District's Water Management Plan was in the final review process with Reclamation's Sacramento office.

Provide the following information regarding project planning:

(1) Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Basin Study, or other planning efforts done to determine the priority of this project in relation to other potential projects.

The District, through its 5-Year Water Management Plan and the subsequent annual updates to said Plan identify planning efforts including funding and prioritizing for potential projects similar to the one proposed.

(2) Identify and describe any engineering or design work performed specifically in support of the proposed project.

The proposed Project is a continuation of the District's Control System Project – 69 Main, which is very similar in nature and has also received funding through Reclamation's 2011 WaterSMART Water and Energy Efficiency Grant Program. The proposed Project has very similar structures to that of the 69 Main project which will allow for the use of design work already completed under the 69 Main project to be incorporated into the proposed Project.

(3) Describe how the project conforms to and meets the goals of any applicable planning efforts, and identify any aspect of the project that implements a feature of an existing water plan(s).

The Project meets the goals of the 2003 adopted Water Management Plan and the current update to said Plan. In addition, several priority aspects of the Regional Groundwater Management Plan would be achieved with the implementation of the Project. These aspects relate specifically to improved management of surface waters, conservation of groundwater, recharge of groundwater and avoidance of adverse impacts such as subsidence.

Subcriterion No. F.2: Readiness to Proceed. Describe the implementation plan of the proposed project. Please include an estimate project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

All necessary environmental documents, design and development of bid ready Project documents can be completed before August, 2014. Please refer to the Project Schedule in **Appendix C**. No delays are expected as a result from environmental compliance issues. The improvements affect existing facilities.

Subcriterion No. F.3: Performance Measures Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (i.e., water saved, marketed, or better managed or energy saved).

Upon completion of the Project improvements, records will be developed to determine if the small (20 acres and less) water users will begin to take delivery of surface water as compared to the pre-improved facility. Further, records will be kept regarding water marketing opportunities made available and exercised both within and external to the District.

g. Additional Non-Federal Funding

There is not additional non-federal funding for this Project.

h. Connection to Reclamation Project Activities

The District is a long-term federal water contractor in the Friant Division of the Central Valley Project since 1949.

5. Performance Measures

The following performance measures are derived from the performance measure examples found at www.usbr.gov/waterSMART/grants:

1. System automation by means of installation of a SCADA system

a. Pre-project baseline data:

- Measure groundwater elevations;
- Collect data on diversions and deliveries to water users, making estimates if necessary;
- Estimate spillage based on existing data such as reservoir levels;
- Document employee time spent pre-project on monitoring and water control, make estimates, if necessary; and
- Document pre-project water transfers.

b. Post project methods for quantifying benefits of SCADA system projects:

- Compare groundwater elevations data before and after project implementation. Compare pre-project and post project groundwater elevations during frost protection events and during the regular irrigation season. Variables such as weather fluctuations and crop type will need to be accounted for;
- Track and record the diversions to water users and compare same to pre-project diversions. This would show results of improved management if yearly fluctuations in weather are accounted for;
- Report delivery improvements (i.e., changes in supply, duration, or frequency that are available to end users because of SCADA system construction and operation);
- Document other benefits such as less mileage by operators on dusty roads (which saves time and influences air quality) and less spillage to recharge reservoirs due to fluctuating water levels in 69 Main;
- Track reservoir levels using SCADA system records and compare to pre-project reservoir operations records; and

- Document and compare water transfer activity during pre-project conditions and post project conditions.

2. Water Markets

- Compare pre-project and post project depth to groundwater elevations taking into account weather induced fluctuations; and

- Compare pre-project and post project water transfers. Water transfers inside the District can be evaluated by comparing the number and acreage size of the water users for pre-project conditions and post project conditions. Water transfers outside of the District are recorded and maintained on an annual basis.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

(1) Will the project impact the surrounding environment (i.e., soil (dust) air, water (quality and quantity), animal habitat, etc.)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

There will be some excavation required to install the new 68 Main Lateral Control Structure and the Wutchumna Ditch Receiving Junction Box. Some trenching will be required for the SCADA system at various sites. Dust control and construction site storm management plans will need to be developed by the awarded contractor and approved.

(2) Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

Yes. Kit fox have a designated range just to the south of the Project area and Swainsons Hawk, which is a State listed species forage in the area. A biological survey has been budgeted for and the construction contract specifications will require the contractor to follow specific procedures if a construction site is found to have endangered or threatened species present.

(3) Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "waters of the United States?" If so, please describe and estimate any impacts the project may have.

No. There are not any designated wetland areas within the limits of any of the Project work sites.

(4) When was the water delivery system constructed?

The District's distribution system was constructed by Reclamation in 1953.

(5) Will the project result in any modification of, or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when the features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

The Project will not affect the form and function of any of the Junction Boxes, the North Wutchumna Pumping Plant and the regulation reservoir.

(6) Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

The National Register of Historic Places listing for Tulare County, California was checked. There was no reference for any of the District's facilities on said historic listing. We

believe the District has no buildings, structures or features that are eligible for listing on the National Register of Historic Places. The Project will not affect the form and function of the structures to be modified. A cultural resource/Historical Assessment survey will, however, be conducted on the structures affected by the Project, if the preliminary assessment warrants such investigation.

(7) Are there any known archeological sites in the proposed project area?

There are no known archeological sites in the Project area. The Project improvements will all be contained to an area which is covered by an easement dedicated to the distribution system and to the benefit of the United States. Within the boundaries of these easements, the original system was constructed with depths of soil disturbance occurring at that point in time significantly greater than will be required for the Project. At the current time, there are no anticipated areas of construction which will extend beyond the original construction boundaries. No archeological sites were identified, avoided or encountered in the construction of facilities to be augmented with the Project features.

(8) Will the project have a disproportionately high and adverse effect on low income or minority populations?

Other than the Project having both positive water supply and economic impacts on growers receiving District surface water supplies, there are no impacts on low income or minority populations associated with the Project. There are no stocks of housing or population concentrations within the Project area and the construction related activities will have specific criteria established to minimize environmental impacts on air and surface water quality. Therefore, other than the beneficial effects related to growers impacted by the features of the Project, no other populations are anticipated to be impacted in any manner, including low income and/or minority populations.

(9) Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

The limits of the Project construction activities are within the limits of the construction activities associated with the existing distribution system and related improvements. There are no identified sites related to tribal issues within the Project impact area. This includes both sacred sites or sites which have other historical significance to the Indian population which inhabited the area historically. The Project construction documents will, nevertheless, identify procedures which must be adhered to if identification occurs during construction of any tribal related artifacts or remains. The construction activities will be preceded by a thorough cultural resources process which will be designed to verify the absence of any sites for which access would be limited or prohibited.

(10) Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

The vast majority of the Project activities are located above-ground and do not involve land disturbance activities. For the few locations where structures must be altered and/or

constructed, said activities are taking place on lands which are maintained in a weed-free state, whether within the right-of-way of the Friant-Kern Canal or the right-of-ways for the District's distribution system. No expansion of the distribution system features is contemplated as an activity of this Project.

REQUIRED PERMITS OR APPROVALS

The District's ownership of its distribution system and associated right-of-way is held by the United States Department of the Interior, Bureau of Reclamation (Reclamation). The District has an operation and maintenance agreement with Reclamation, therefore a license agreement with USBR is not required, however, approval by Reclamation staff regarding the proposed changes to the distribution system will need to be obtained following completion of the draft-final Project Plans and Specifications. Additional permits and approvals are listed below.

County of Tulare Road Encroachment Permit:

The awarded contractor who will be constructing the structure and low-flow bypass improvements will be required to apply and obtain an encroachment permit from the County of Tulare due to the proximity of the distribution system to the county road right-of-way.

Dust Control Plan:

A Dust Control Plan will be needed for all earthwork removal and placement activities. The awarded contractor will be responsible for submitting an application for approval to the local Air Quality Control Board and must obtain said approval prior to construction activities taking place.

Storm Water Pollution Prevention Plan

A Storm Water Pollution Prevention Plan will be needed for all construction related activities. The awarded contractor will be responsible for submitting an application for approval and must obtain said approval prior to construction activities taking place.

FUNDING PLAN AND LETTER OF COMMITMENT

(1) How you will make your contribution to the cost-share requirement, such as monetary and/or in-kind contributions, and source funds contributed by the applicant (e.g., reserve account, tax revenue and/or assessments.

The District will make its contribution to the cost-share requirement from its Distribution System Replacement Fund. See **Appendix G** for the District's financial information.

(2) Describe any in-kind costs incurred before the anticipated project start date that you seek to include as project costs.

The District plans to complete design and initiate environmental compliances before October 1, 2011. See Project Schedule in **Appendix C**.

(3) Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.

There are no funding partners. All non-federal funds will be paid for by the District.

(4) Describe any other funding requested or received from other federal partners.

No other Federal funding requests have been made for the proposed work.

(5) Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.

The District has not submitted any other funding request for the Project.

Funding Sources	Funding Amount
Non-Federal Entities	
1. Ivanhoe Irrigation District	$452,500.00
2.	
3.	
Non-Federal Subtotal:	
Other Federal Entities	
1.	
2.	
3.	
Other Federal Subtotal:	$0.00
Requested Reclamation Funding:	$300,000.00
Total Project Funding:	$752,500.00

OFFICIAL RESOLUTION

Appendix A includes Resolution 2013-1 authorizing the preparation of this application and funding of the District's cost share as stated in the Project Funding Plan. Said resolution was adopted at the District's Board Meeting held on January 15, 2013.

PROJECT BUDGET PROPOSAL

Funding Source Table

Funding Sources	Percent of Total Project Cost	Total Cost by Source
Recipient Funding	60.1%	$452,500.00
Reclamation Funding	39.9%	300,000.00
Other Federal Funding	0.00%	0.00
Totals	100.00%	$752,500.00

Budget Proposal Table

Budget Item Description	Computation		Quantity Type (hours/days)	Total Cost
	$/Unit	Quantity		
Salaries and Wages - IID				
District Manager-Secretary	$48.46	15.5	Hours	$750.00
Fringe Benefits - IID				
District Manager-Secretary	$9.68	15.5	Hours	$150.00
Travel				
Equipment				
Supplies/Materials				
Office Supplies				
Contractual/Construction				
Control Structure/Bypasses	$348,000.00	1	Contract	$348,000.00
SCADA	$210,000.00	1	Contract	$210,000.00
Cultural Resources Survey	$5,000.00	1	Contract	$5,000.00
Biological Site Survey	$2,000.00	1	Contract	$2,000.00
Environmental, Engineering, Inspection, Project Reporting and Project Administration by Consultant	$100.05	1,196	Hours	$120,986.00
Environmental and Regulatory Compliance Costs		1.01%	Percentage	$7,600.00
Other				
Contingencies				
Control Structure/Bypasses		10%	Percentage	$34,800.00
SCADA		10%	Percentage	$21,000.00
Permit Fees	$2,214.00	1	Fee	$2,214.00
Total Direct Costs				$752,500.00
Indirect Costs – 0%				$0.00
Total Project Costs				**$752,500.00**

PROJECT BUDGET NARATIVE

Detailed cost estimates for the Project can be found in Appendix B.

Salaries and wages: The District will rely on consultants and contractors to accomplish the Project. The District's Manager-Secretary, Mr. Thomas Weddle, will provide the overall management of the Project. Salaries and fringe benefit are based on the 2012 proposed budget.

Fringe benefits: Fringe benefits include social security, pension plan, health plan and state compensation insurance and are accounted in the fringe benefit component.

Travel: The District does not plan to reimburse employees for travel because the amount of travel associated with the Project is not significant. The mileage shown in **Appendix B**, "Estimate of Total Project Cost" is for consultants and is accounted in the consultant's Environmental, Engineering, Inspection, etc. costs.

Equipment: It is anticipated that all the equipment that will be used in this Project will be supplied by the awarded contractors.

Supplies and materials: All material and supply costs associated with the Project are included in the contractual category. All material and supplies for each of the contracts will be included under their individual contracts. All office supplies associated with the District's Consultant Engineer will be covered under the contract with said Consultant.

Contractual/Construction: It is anticipated that the District will enter into two contracts in order to accomplish the construction portion of the Project, one to install the structural improvements and one to install the SCADA system improvements. See **Appendix B**, for Engineers Estimate of Probable Construction Costs. In addition, the District will enter into contract with its consultant engineer to finalize the Project design, assist Reclamation in the preparation of the NEPA document, prepare the appropriate CEQA documents, and provide construction inspection, administrative and Project performance duties.

Environmental and compliance costs: A portion of the budget was set aside for environmental and regulatory compliance. These costs were not included in the contractual category, since it is believed that they will be incurred by Reclamation staff. The total estimated costs are $7,600 which represents 1.01% of the total estimate Project cost.

Reporting: Reporting costs include the District's Consultant Engineer's time to prepare performance monitoring documents, quarterly reporting, semi-annual reporting and final report documents.

Other: A 10 percent contingency was applied for the construction of the Project primarily for uncertainty of costs at the time of construction, but also for uncertainty in quantities, neglected items and unforeseen circumstances. Contingency costs were only applied to the contractual construction efforts.

APPENDIX A

RESOLUTION

CONTROL SYSTEM PROJECT – 68 MAIN

IVANHOE IRRIGATION DISTRICT

BEFORE THE BOARD OF DIRECTORS
OF THE
IVANHOE IRRIGATION DISTRICT

IN THE MATTER OF THE WATERSMART WATER AND ENERGY EFFICIENCY GRANT PROGRAM FOR FY 2013.

RESOLUTION NO. 2013-1

Director Moss offered the following Resolution and moved for its adoption.

WHEREAS, the Ivanhoe Irrigation District (District) is obligated by law to manage and conserve water it receives from the Central Valley Project; and

WHEREAS, the Board of Directors of the District support the Project as described in the attached Project Description and the water management benefits provided thereby; and

WHEREAS, the District desires to apply for and secure funds that may be made available from the U.S. Bureau of Reclamation (Reclamation) through the WaterSMART Water and Energy Efficiency Grant Program for FY 2013 (Grant Program) for said Project; and

WHEREAS, the District has the capability to provide funding and in-kind contributions as specified in the Project Funding Plan; and

WHEREAS, the District pledges to cooperate with Reclamation in meeting deadlines established thereby for the purpose of entering into a Cooperative Agreement therewith.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Ivanhoe Irrigation District that it (a) has reviewed and supports the proposed Project and (b) that the District has in its possession sufficient funds and can furnish in-kind contributions to fulfill its funding requirements as identified in the Project Funding Plan.

BE IT FURTHER RESOLVED that, if selected by Reclamation for a grant from the Grant Program, the Secretary of the District is hereby authorized to execute a Cooperative Agreement therewith and the District shall cooperate with Reclamation to ensure execution of said Agreement.

THE FOREGOING RESOLUTION WAS ADOPTED at a regular meeting of the Board of Directors of the Ivanhoe Irrigation District held this 15th day of January, 2013, by the following votes:

AYES: Directors Caviglia, DeLeonardis, Moss, Phillips and Smith

NOES: none

ABSTAIN:

ABSENT: Directors Felts and Paregien

IVANHOE IRRIGATION DISTRICT

By: _____
Thomas G. Weddle, Secretary

SECRETARY'S CERTIFICATE

I, Thomas G. Weddle, hereby certifies that I am the acting Secretary of the Ivanhoe Irrigation District, that the foregoing resolution was duly adopted by the Board of Directors of said District at a regular meeting of said Board on the 15th day of January, 2013 and that said resolution has not been revoked or amended and remains in full force and effect.

DATED: January 15, 2013

Thomas G. Weddle, Secretary

APPENDIX B

PROJECT COST SUMMARIES

CONTROL SYSTEM PROJECT – 68 MAIN

IVANHOE IRRIGATION DISTRICT

APPENDIX B: ESTIMATE OF TOTAL PROJECT COST

Ivanhoe Irrigation District
Control System Project - 68 Main

		Consulting Labor Costs														Admin. Costs					Totals	
		Principal Engineer	Senior Engineer	Resident Inspector - Prevailing Wage	Drafting Technician	Stenographer	Wages	Benefits	Overhead Costs	Profit	Subtotal Consulting Labor Costs	Biological Survey	Cultural Resources Survey	Bureau of Reclamation	Estimated Construction Costs	Estimated SCADA Installation/Integration Costs	Mileage at $0.56/mi.	Printing & Postage	Permit Fees	IID - Secretary Manager	Contingencies	Total Consulting Hours	Total Cost
STAFF HOURS																							
Rate / Hour		$140	$102	$100	$82	$54	34.63%	8.45%	56.82%	0.10%											10%		
Task 1	**Environmental**																						
Task 1.1	Environmental Compliance (CEQA)	8	40	0	0	8	$1,950	$476	$3,200	$6	**$5,632**	$2,000	$0	$0	$0	$0	$30	$100	$2,214	$200	$0	**56**	**$10,176**
Task 1.2	Environmental Compliance (NEPA)	16	80	0	0	0	$3,602	$879	$5,909	$10	**$10,400**	$0	$5,000	$7,600	$0	$0	$30	$200	$0	$200	$0	**96**	**$23,430**
Task 1.3	Regional Water Quality Control Board: SWPPP	0	0	0	0	0	$0	$0	$0	$0	**$0**	$0	$0	$0	$3,000	$0	$0	$0	$0	$0	$300	**0**	**$3,300**
Task 1.4	Air Resources Control Board: DCP	0	0	0	0	0	$0	$0	$0	$0	**$0**	$0	$0	$0	$1,000	$0	$0	$0	$0	$0	$100	**0**	**$1,100**
																						Task 1 Total =	**$38,006**
Task 2	**Engineering/Inspection**																						
Task 2.1	Conceptual Design	20	40	0	80	8	$4,804	$1,172	$7,882	$14	**$13,872**	$0	$0	$0	$0	$0	$30	$100	$0	$0	$0	**148**	**$14,002**
Task 2.2	Final Design (Specifications and Plans)	20	80	0	100	12	$6,860	$1,674	$11,255	$20	**$19,808**	$0	$0	$0	$0	$0	$30	$200	$0	$0	$0	**212**	**$20,038**
Task 2.3	Project Bid and Award	20	20	0	0	16	$1,975	$482	$3,241	$6	**$5,704**	$0	$0	$0	$0	$0	$0	$50	$0	$0	$0	**56**	**$5,754**
Task 2.4	Construction Inspection/Miscellanious Engineering	20	40	300	16	0	$13,226	$3,227	$21,701	$38	**$38,192**	$0	$0	$0	$0	$0	$560	$0	$0	$0	$0	**376**	**$38,752**
																						Task 2 Total =	**$78,546**
Task 3	**Construction**																						
Task 3.1	68 Main Lateral Control Structure	0	0	0	0	0	$0	$0	$0	$0	**$0**	$0	$0	$0	$221,500	$0	$0	$0	$0	$0	$22,150	**0**	**$243,650**
Task 3.2	Wutchumna Ditch Receiving Junction Box	0	0	0	0	0	$0	$0	$0	$0	**$0**	$0	$0	$0	$60,000	$0	$0	$0	$0	$0	$6,000	**0**	**$66,000**
Task 3.3	Low-Flow Bypasses	0	0	0	0	0	$0	$0	$0	$0	**$0**	$0	$0	$0	$62,500	$0	$0	$0	$0	$0	$6,250	**0**	**$68,750**
Task 3.4	SCADA Installation and Integration	0	0	0	0	0	$0	$0	$0	$0	**$0**	$0	$0	$0	$210,000	$0	$0	$0	$0	$0	$21,000	**0**	**$231,000**
																						Task 3 Total =	**$609,400**
Task 4	**Project Administration**																						
Task 4.1	Monitor Water Savings	12	24	0	8	8	$1,806	$441	$2,964	$5	**$5,216**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**52**	**$5,216**
Task 4.2	Bureau Contract Negotiation	4	4	0	0	0	$335	$82	$550	$1	**$968**	$0	$0	$0	$0	$0	$0	$0	$0	$200	$0	**8**	**$1,168**
Task 4.3	Semi Annual Reports	12	60	0	0	0	$2,701	$659	$4,432	$8	**$7,800**	$0	$0	$0	$0	$0	$0	$0	$0	$200	$0	**72**	**$8,000**
Task 4.4	Draft Project Report	16	40	0	8	8	$2,565	$626	$4,209	$7	**$7,408**	$0	$0	$0	$0	$0	$0	$0	$0	$100	$0	**72**	**$7,508**
Task 4.5	Final Project Report	8	24	0	8	8	$1,612	$393	$2,646	$5	**$4,656**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**48**	**$4,656**
																						Task 4 Total =	**$26,548**
	Total Hours:	156	452	300	220	68																	
	Total Cost:	$21,840	$46,104	$30,000	$18,040	$3,672	$41,437	$10,111	$67,989	$120	**$119,656**	$2,000	$5,000	$7,600	$558,000	$0	$680	$650	$2,214	$900	$55,800	**1,196**	**$752,500**

TOTAL ESTIMATED PROJECT COST: **$752,500**

APPENDIX B
ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COST
CONTROL SYSTEM PROJECT - 68 MAIN
IVANHOE IRRIGATION DISTRICT

	ITEM DESCRIPTION	Units	Unit Price	Quantity	Total Amount	Contracts Structures	Contracts SCADA
	68 Main						
A.	68 Main Lateral Control Structure						
	Mobilization and Demobilization	Each	$ 2,900	1.0	$ 2,900	$ 2,900	
	Sheeting and Shoring	Each	$ 10,000	1.0	$ 10,000	$ 10,000	
	Clearing and Grubbing	Each	$ 8,000	1.0	$ 8,000	$ 8,000	
	F&I Trench Safety Plan	Each	$ 5,000	1.0	$ 5,000	$ 5,000	
	Site Work	Each	$ 10,000	1.0	$ 10,000	$ 10,000	
	Excavation/Earthwork	CY	$ 200	180.0	$ 36,000	$ 36,000	
	Demolition - Below Ground/Pipeline Tie-in	Each	$ 7,500	1.0	$ 7,500	$ 7,500	
	F&I Pipe (Various Diameters)	Each	$ 20,000	1.0	$ 20,000	$ 20,000	
	F&I Butterfly Valves (Various Diameters)	Each	$ 15,000	3.0	$ 45,000	$ 45,000	
	Construct Concrete Structure	CY	$ 1,000	60.0	$ 60,000	$ 60,000	
	Control Structure - Misc. Items and Appurtances, etc.	Each	$ 5,000	1.0	$ 5,000	$ 5,000	
	F&I Electrical and Controls	Each	$ 10,000	1.0	$ 10,000	$ 10,000	
	Perimeter Fencing	LF	$ 15	140.0	$ 2,100	$ 2,100	
B.	Wutchumna Ditch Receiving Junction Box						
	Concrete	CY	$ 2,200	25	$ 55,000	$ 55,000	
	Removal of old receiving junction box	Each	$ 5,000	1	$ 5,000	$ 5,000	
C.	Low-Flow Junction Box Bypasses						
	Steel Pipe with Flanges, welded in the field with Butterfly valve control.	Each	$ 12,500	5	$ 62,500	$ 62,500	
D.	SCADA (D)						
i	F & I PLC, radios, redundant sensors						
	JB site	Each	$ 22,800	5	$ 114,000		$ 114,000
	Reservoirs	Each	$ 11,400	1	$ 11,400		$ 11,400
	Proposed Control Structure	Each	$ 14,800	1	$ 14,800		$ 14,800
	Wutchumna Pumping Plant - North	Each	$ 14,800	1	$ 14,800		$ 14,800
ii	Specifications, Control logic PLC Programing	Each	$ 20,000	1	$ 20,000		$ 20,000
iv	Misc. (E)	Each	$ 5,000	7	$ 35,000		$ 35,000
			Total Cost		$ 554,000	$ 344,000	$ 210,000
				10%	$ 55,400	$ 34,400	$ 21,000
			Subtotal		$ 609,400	$ 378,400	$ 231,000

APPENDIX C

PROJECT SCHEDULE

CONTROL SYSTEM PROJECT – 68 MAIN

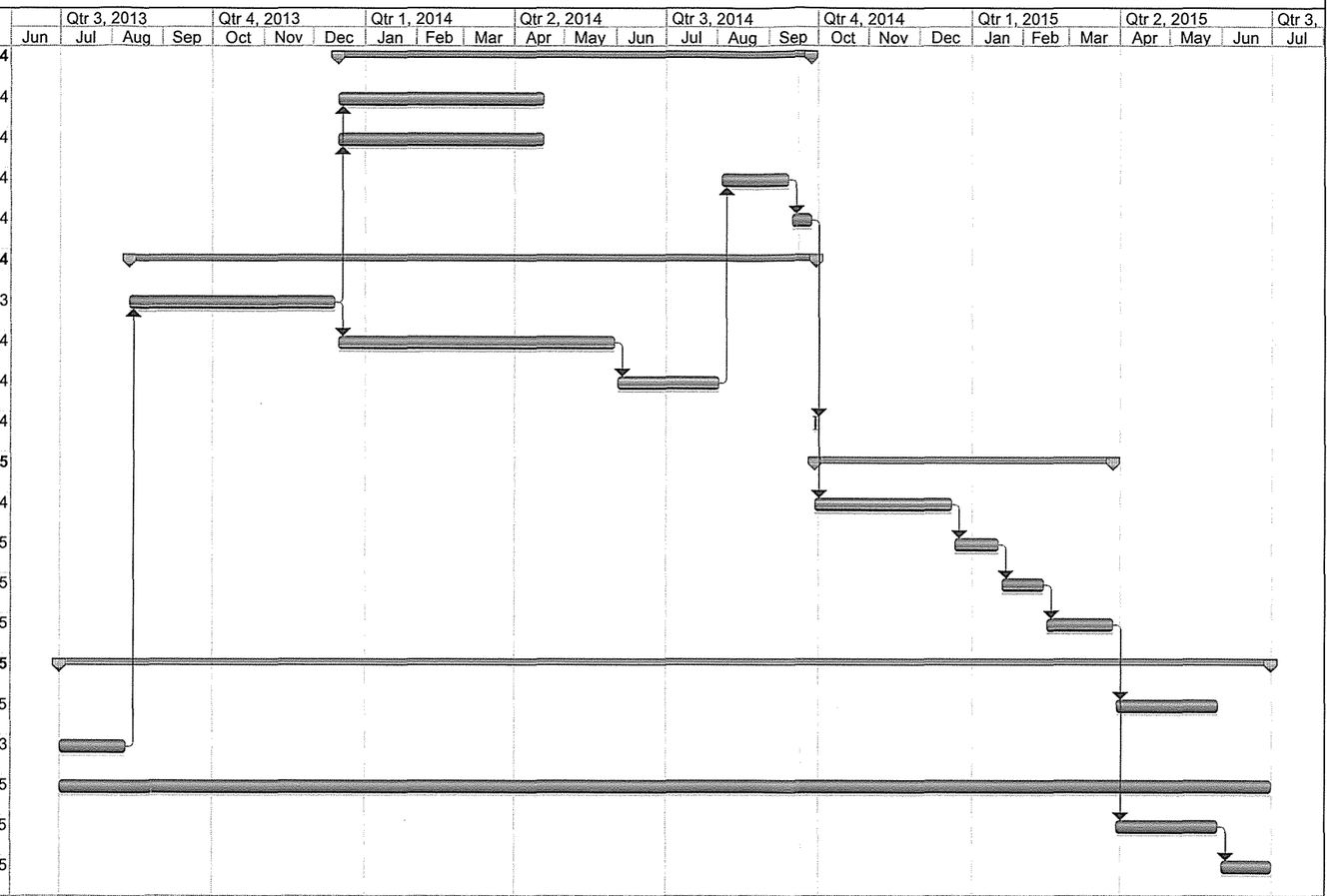
IVANHOE IRRIGATION DISTRICT

APPENDIX C: SCHEDULE

Ivanhoe Irrigation District

Control System Project - 68 Main

ID	Task Name	Duration	Start	Finish
1	**Task 1 - Environmental Documentation**	**205 days**	**Mon 12/16/13**	**Fri 9/26/14**
2	Task 1.1 Environmental Compliance (CEQA)	90 days	Mon 12/16/13	Fri 4/18/14
3	Task 1.2 Environmental Compliance (NEPA)	90 days	Mon 12/16/13	Fri 4/18/14
4	Task 1.3 Regional Water Quality Control Board: SWPPP	30 days	Mon 8/4/14	Fri 9/12/14
5	Task 1.4 Air Resouces Control Board: DCP	10 days	Mon 9/15/14	Fri 9/26/14
6	**Task 2 - Engineering/Inspection**	**296 days?**	**Mon 8/12/13**	**Mon 9/29/14**
7	Task 2.1 Conceptual Design	90 days	Mon 8/12/13	Fri 12/13/13
8	Task 2.2 Final Design (Specifications and Plans)	120 days	Mon 12/16/13	Fri 5/30/14
9	Task 2.3 Project Bid and Award	45 days	Mon 6/2/14	Fri 8/1/14
10	Task 2.4 Construction Inspection/Miscellanious Engineering	1 day?	Mon 9/29/14	Mon 9/29/14
11	**Task 3 - Construction**	**130 days**	**Mon 9/29/14**	**Fri 3/27/15**
12	Task 3.1 68 main Lateral Control Structure	60 days	Mon 9/29/14	Fri 12/19/14
13	Task 3.2 Wutchumna Ditch Receiving Junction Box	20 days	Mon 12/22/14	Fri 1/16/15
14	Task 3.3 Low-Flow Bypasses	20 days	Mon 1/19/15	Fri 2/13/15
15	Task 3.4 SCADA Installation and Integration	30 days	Mon 2/16/15	Fri 3/27/15
16	**Task 4 - Project Administration**	**522 days**	**Mon 7/1/13**	**Tue 6/30/15**
17	Task 4.1 Monitor Water Savings	45 days	Mon 3/30/15	Fri 5/29/15
18	Task 4.2 Bureau Contract Negotiation	30 days	Mon 7/1/13	Fri 8/9/13
19	Task 4.3 Semi Annual Reports	522 days	Mon 7/1/13	Tue 6/30/15
20	Task 4.4 Draft Project Report	45 days	Mon 3/30/15	Fri 5/29/15
21	Task 4.5 Final Project Report	22 days	Mon 6/1/15	Tue 6/30/15



APPENDIX D

DISTRIBUTION SYSTEM MAP

CONTROL SYSTEM PROJECT – 68 MAIN

IVANHOE IRRIGATION DISTRICT

R.25E.
R.26E.

AVE. 356
ROAD 172
RD 176
A.T.&S.F. R.R.
FRIANT-KERN CANAL
ROAD 188
ROAD 192
COTTONWOOD (ABANDONED) CREEK
20
21
AVE. 352
ROAD 152
ROAD 156
ROAD 160
ROAD 164
26
25
30
29
28
27
COTTONWOOD DITCH
MAIN LATERAL 68.9
J.B.
20" LINE
AVE. 344
HOLDING RESERVOIR
35
36
31
32
33
34
RECHARGE RESERVOIR NO. 1
MAIN LATERAL 69.8
68.9 PUMP PLANT
RECHARGE RESERVOIR NO. 2
24" LINE
AVE. 340
AVE. 336
69.8 PUMP PLANT
WUTCHUMNA DITCH
T.17S.
T.18S.
STATE HWY. 201
AVE. 332
RECHARGE RESERVOIR NO.3
2
6
5
4
3
ROAD 148
ROAD 152
ROAD 156
ROAD 158
ROAD 160
ROAD 164
ROAD 168
ROAD 180
ROAD 182
ROAD 184
ROAD 188
ROAD 196
AVE. 328
AVE. 326
AVE. 324
S.P. R.R.
7
8
N
NOT TO SCALE

BOUNDARY MAP AND DISTRIBUTION SYSTEM
WATER SMART APPLICATION
IVANHOE IRRIGATION UTILITY DISTRICT

L:\Ivanhoe Irrigation District\Water Smart Study\FIGURE 2 - BNDRY-DISTR MAP 68 MAIN.dwg

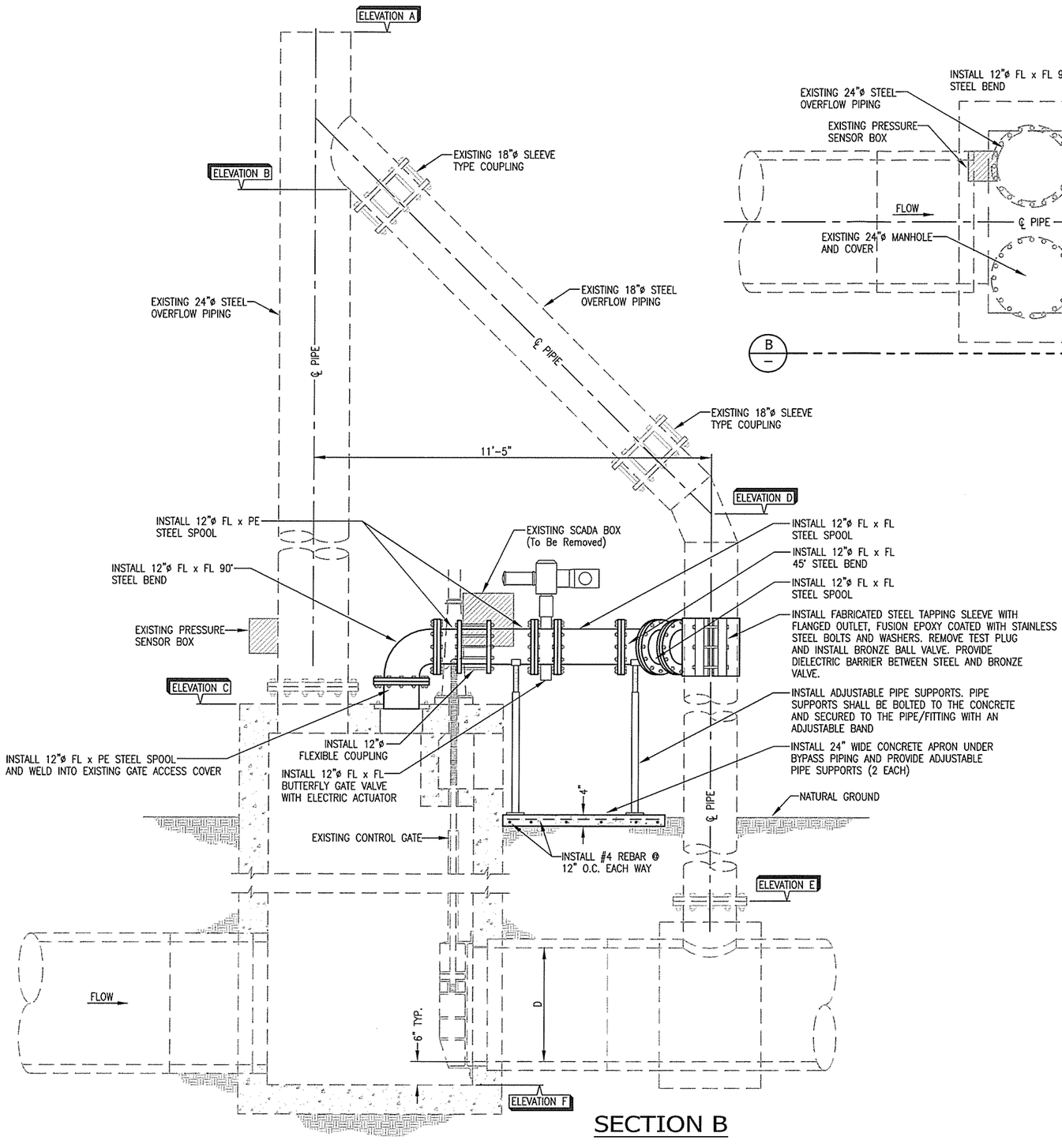
APPENDIX E

PRELIMINARY DRAWING OF

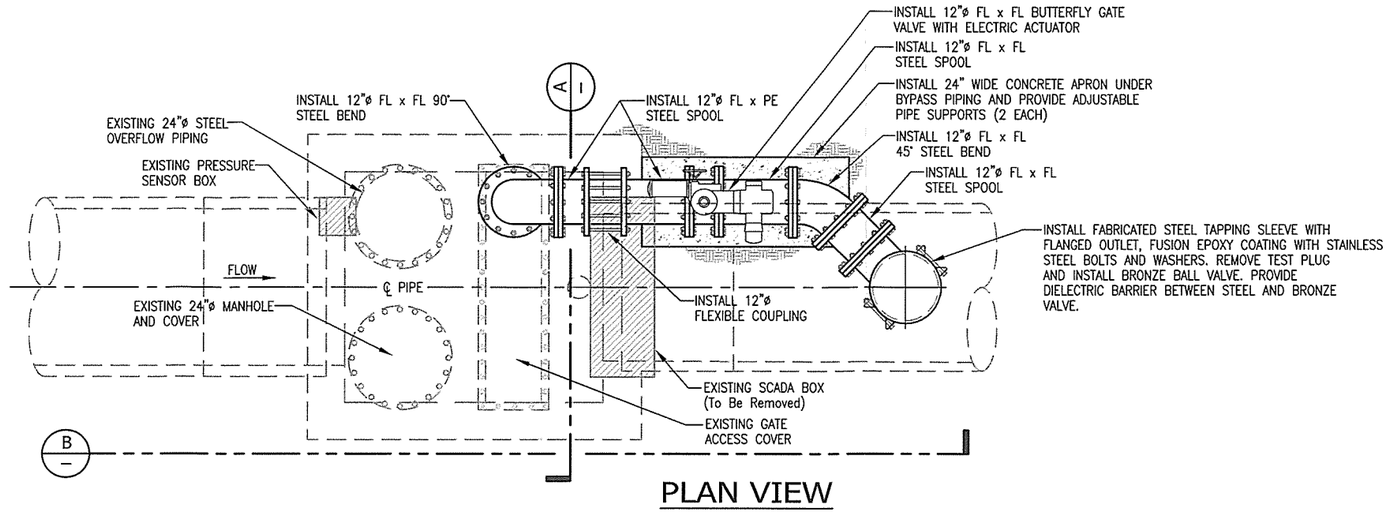
LOW-FLOW BYPASS

CONTROL SYSTEM PROJECT – 68 MAIN

IVANHOE IRRIGATION DISTRICT



SECTION B



PLAN VIEW

JUNCTION BOX BYPASS
CONTROL SYSTEM PROJECT - 69 MAIN
(STRUCTURE INSTALLATION PHASE)
IVANHOE IRRIGATION DISTRICT

NOTE:
DRAWING NOT TO SCALE

L:\829- IID - Control System Project - 69 Main\SHEET 6(JUNCTION BOX BYPASS).Dwg

KELLER/WEGLEY

APPENDIX F

CALCULATIONS

CONTROL SYSTEM PROJECT – 68 MAIN

IVANHOE IRRIGATION DISTRICT

APPENDIX F
WEIGHTED AVERAGE IMPROVEMENT LIFE
CONTROL SYSTEM PROJECT - 68MAIN
IVANHOE IRRIGATION DISTRICT

	ITEM DESCRIPTION	Estimated Cost	Useful Life	Cost x Useful Life
#	**69 Main**			
A.	68 Main Lateral Control Structure			
	Mobilization and Demobilization	2,900	60	174,000
	Sheeting and Shoring	10,000	60	600,000
	Clearing and Grubbing	8,000	60	480,000
	F&I Trench Safety Plan	5,000	60	300,000
	Site Work	10,000	60	600,000
	Excavation/Earthwork	36,000	60	2,160,000
	Demolition - Below Ground/Pipeline Tie-in	7,500	60	450,000
	F&I Pipe (Various Diameters)	20,000	50	1,000,000
	F&I Butterfly Valves (Various Diameters)	45,000	15	675,000
	Construct Concrete Structure	60,000	60	3,600,000
	Control Structure - Misc. Items and Appurtances, etc.	5,000	15	75,000
	F&I Electrical and Controls	10,000	15	150,000
	Perimeter Fencing	2,100	15	31,500
B.	Wutchumna Ditch Receiving Junction Box			
	Concrete	55,000	60	3,300,000
	Removal of old receiving junction box	5,000	60	300,000
C.	Low-Flow Junction Box Bypasses			
	Steel Pipe with Flanges, welded in the field with Butterfly valve control.	62,500	20	1,250,000
D.	SCADA (D)			
i	F & I PLC, radios, redundant sensors			
	JB site	22,800	15	342,000
	Reservoirs	11,400	15	171,000
	Proposed Control Structure	14,800	15	222,000
	Wutchumna Pumping Plant - North	14,800	15	222,000
ii	Specifications, Control logic PLC Programing	20,000	15	300,000
ii	Misc. (E)	5,000	15	75,000
	Total	432,800		16,477,500

Weighted Average Improvement Life	38.1

APPENDIX F
WATER CONSERVED CALCULATIONS
CONTROL SYSTEM PROJECT - 69 MAIN
INVANHOE IRRIGATION DISTRICT

No.	ITEM	UNITS	AMOUNT
	PARCEL INFORMATION - 69 MAIN		
1	Total Acerage	Acres	5,799
2	Estimated applied water	Acre-feet	13,048
3	Estimated surface water delivered	Acre-feet	6,742
4	Number of parcels 20 acres or less	Count	175
5	Average parcel size for parces 20 acres or less	Acres	8.9
6	Total Acreage for Parcels 20 acres or less	Acres	1,558
7	Number of parcels greater than 20 acres	Count	88
8	Average Parcel size for parcels greater than 20 acres	Acres	48.2
9	Total Acreage for parcels greater than 20 acres	Acres	4,242
10	Number of meters not in use	Count	17
A	GROUND WATER PUMPED:		
	Basis: It is assumed that the number of meters not in use are smaller acreage parcels and use 100% groundwater rather than purchase suface water with a mandatory 24 hour take.		
1	Number of connections with less than 20 acres and don't use District water	count	17
2	Total acreage for No. 1	acres	151
3	Estimated annual average applied water	AF/Y	2.25
4	Total annual groundwater pumped	AF/Y	340
B	WATER LOST TO OVER IRRIGATION		
	Basis: The parcels with 20 acres or less cannot accomondate a mandatory 24 hour take as a result, parcels turn off before 24 hours and the result is water lost to over irrigation.		
1	Total acreage less acreage not taking District surface water	acres	1,558
2	Delivery rate	gpm/AC	4
3	Estimated average irrigation time	hours	12
4	24 hours less No. 4	hours	12
5	Number of shut offs per irrigation season	count	30
7	Conversion factor (60 minutes/325,829 gal/AF)	min-AF gallons	0.00018
8	Estimated water lost due to spills	AF/Y	413
C I	GROUNDWATER PUMPED FOR FROST PROTECTION		
A	Basis: For frost protection, the 31 parcels that don't use district water utilize 100% ground water		
1	Number of connections with less than 20 acres and don't use District water	count	17
2	Total acreage for No. 1	acres	151
3	Delivery rate	gpm/AC	4
4	Estimated average irrigation time	hours	17
5	Number of frost applications	count	4
6	Conversion factor (60 minutes/325,829 gal/AF)	min-AF gallons	0.00018
7	Total annual groundwater pumped	AF/Y	8
CII	GROUNDWATER PUMPED FOR FROST PROTECTION		
	Basis: It is assumed that only 50% of the the District users will pump groundwater rather than taking surface water and the mandatory 24 hour take		
1	Total acreage less acreage not taking District surface water	acres	5,648
2	Delivery rate	gpm/AC	4
3	Estimated average irrigation time	hours	17
4	Number of frost applications	count	4
5	Conversion factor (60 minutes/325,829 gal/AF)	min-AF gallons	0.00018
6	Total annual groundwater pumped	AF/Y	283
	Direct amount of water conserved as a result of implementing Project (B)	AF/Y	413
	Amount of water marketed inside the district as a result of spill prevention or over watering (B)	AF/Y	413
	Amount of water not pumped from the groundwater as a result of implementing project (B+CI+CII)	AF/Y	704

APPENDIX F			
INCREASED ENERGY EFFICIENCY			
SYSTEM OPTIMIZATION PROJECT PHASE I			
INVANHOE IRRIGATION DISTRICT			
	ITEM	UNITS	AMOUNT
1	Reduction of water pumped	AF	291
2	Elimination of water lost to over irrigation	AF	413
3	Total water not pumped	TOTAL	704
4	Cost to pump groundwater	$/AF	40
5	Cost of pumping	$	$ 28,160
6	Average cost of power	$/KWH	$ 0.12
7	Power saved per year	KWH	234,667

APPENDIX G

DISTRICT FISCAL INFORMATION

CONTROL SYSTEM PROJECT – 68 MAIN

IVANHOE IRRIGATION DISTRICT

Sciacca & Company
CERTIFIED PUBLIC ACCOUNTANTS
2200 WEST MAIN STREET
POST OFFICE BOX 110 • VISALIA, CA 93279

SAM SCIACCA, CPA
FRED SCIACCA, CPA

DONALD WILLIAMS, CPA
DOUGLAS SOUZA, CPA

TELEPHONE (559) 733-5338
FAX (559) 733-0929

INDEPENDENT AUDITORS' REPORT

Board of Directors
Ivanhoe Irrigation District
Ivanhoe, California 93235

We have audited the accompanying Statement of Net Assets of the Ivanhoe Irrigation District ("District") as of December 31, 2011 and 2010, and the Statement of Revenues, Expenses and Changes in Net Assets, and the Statement of Cash Flows for the years then ended. These financial statements are the responsibility of the District's Management. Our responsibility is to express an opinion on these financial statements based upon our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America, and standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Controller General of the United States, and the State Controller's *Minimum Audit Requirements for California Special Districts*. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Ivanhoe Irrigation District as of December 31, 2011 and 2010, and the results of its operations and cash flows for the years then ended in conformity with accounting principals generally accepted in the United States of America as well as accounting systems prescribed by the State Controller and state regulations governing special districts.

Our audit was conducted for the purpose of forming an opinion on the financial statements taken as a whole. The additional accompanying Supplementary Information as listed in the Table of Contents is presented for purposes of additional analysis and is not a required part of the financial statements of the District. Such information has been subjected to the auditing procedures applied in the audit of the financial statements and, in our opinion is fairly presented in all material respects in relation to the financial statements taken as a whole.

As described in Note 2 to the financial statements, the District adopted Statement of Governmental Accounting Standards No. 34, *Basic Financial Statements – Management's Discussion and Analysis – for State and Local Governments*, as amended, which changed the presentation of the financial statements.

Sciacca & Company
CERTIFIED PUBLIC ACCOUNTANTS

Board of Directors
Ivanhoe Irrigation District

The Management's Discussion and Analysis included on pages 3 through 8 is not a required part of the basic financial statements, but is additional supplementary information required by the Governmental Accounting Standards Board. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the supplementary information. However, we did not audit the information and express no opinion on it.

Sciacca & Company

April 12, 2012

IVANHOE IRRIGATION DISTRICT
STATEMENT OF NET ASSETS
DECEMBER 31, 2011 AND 2010

	2011	2010
ASSETS		
Cash on Hand and in Banks	$ 1,976,826	$ 1,893,715
Assessments Receivable	25,303	31,057
Tulare County Tax Revenue Receivable (Credit)	(53,022)	(55,324)
Water Charges Receivable (Credit)	(34,955)	(25,871)
Standby Charges Receivable	53,711	64,809
Other Receivables	-	37,234
Inventory	1,686	1,686
Prepaid Expenses	39,428	40,352
Accrued Interest on Investments	14	17
Total Current Assets	2,008,991	1,987,675
Investments in Capital Assets, At Cost	2,959,201	2,968,219
Less: Allowance for Depreciation	2,807,884	2,801,118
	151,317	167,101
OTHER ASSETS		
Investment in Wutchumna Stock	163,500	163,500
Water Rights - 9(d) Contract	1,267,958	1,267,958
Total Assets	$ 3,591,766	$ 3,586,234
LIABILITIES		
Accounts Payable	$ 6,821	$ 6,074
Deferred Assessments and Charges	423,756	428,630
Total Liabilities	$ 430,577	$ 434,704
NET ASSETS		
Invested in Capital Assets, Net of Related Debt	$ 151,317	$ 167,101
Restricted		
Capital Repayment Fund	208,206	208,206
Water Shares Purchase Fund	448,261	448,261
New Construction Fund	448,261	448,261
Distribution System Replacement Fund	950,342	950,342
Unrestricted	954,802	929,359
TOTAL NET ASSETS	$ 3,161,189	$ 3,151,530

The accompanying notes are an integral part of these financial statements.

IVANHOE IRRIGATION DISTRICT - UPDATED THROUGH 12/31/2012						
2012 PROPOSED BUDGET						
	2011 Proposed Budget	2011 Actual Expenses	2012 Actual Budget	Actual 9 Month 2012 Expenses	Projected 2012 end of Year	2013 Proposed Budget
TRANSMISSION AND DISTRIBUTION						
Salaries	129,000	134,092	187,600	123,662	164,883	154,000
Social Security	9,900	10,258	14,350	9,460	12,613	14,350
Pension Plan	10,400	9,961	15,000	9,893	13,191	15,000
Health Plan	25,000	17,800	28,580	16,926	22,568	28,580
Utilities	45,000	53,393	54,000	35,116	46,821	54,000
Repair Materials	55,000	150,450	100,000	52,440	53,000	75,000
Mobile Equipment	12,000	19,910	14,000	20,516	23,000	14,000
Equipment Repairs and Maintenance	5,000	276	5,000	2,705	2,800	5,000
Vehicle Purchases				20,000	20,000	
Backhoe Purchase						78,000
Operating Expenses	10,000	4,626	10,000	12,411	14,000	15,000
Sub Total	**301,300**	**400,766**	**428,530**	**303,129**	**372,876**	**452,930**
ADMINISTRATIVE AND GENERAL						
Salaries (Rose/Lisa)	62,500	63,305	68,300	49,939	64,000	70,000
Salary (Manager) *Includes Benefits	67,000	57,952	64,000	43,832	58,443	64,000
Salary (Asst. Manager) *Includes Benefits	35,000					
Directors Fees	9,400	7,900	9,400	4,300	9,400	9,400
Social Security	9,200	9,277	9,815	6,628	8,837	9,815
Pension Plan	5,000	5,065	6,000	3,995	5,327	6,000
Health Plan	12,000	14,431	17,182	12,108	16,144	17,182
Health Plan - Retirees	15,000	18,042	18,620	13,012	17,349	18,620
Accounting	5,120	5,120	5,248	5,248	6,997	5,248
Legal	24,000	31,592	30,000	4,597	10,000	30,000
Engineering	10,000	0	14,000	0	0	25,000
Property Insurance	900	1,232	1,300	1,194	1,592	1,300
Liability Insurance & Bonds	12,000	9,722	13,000	13,243	17,657	16,000
State Compensation Insurance	12,500	8,243	13,500	10,582	14,109	15,000
Office Supplies/computer equipment	5,500	6,494	10,000	4,461	5,948	7,000
Software/upgrades	N/A		2,500	0	800	12,500
Dues	50,000	58,371	50,000	26,985	35,980	50,000
Telephone	4,000	4,347	4,200	3,939	5,252	5,300
Utilities	3,500	3,385	3,500	2,541	3,388	3,600
Travel	3,000	2,677	3,000	1,481	1,975	3,000
Other Expenses	1,000	2,605	2,000	6,055	6,500	5,000
Misc.	1,000	300	1,000	300	450	1,000
Sub Total	**347,620**	**310,060**	**346,565**	**214,440**	**290,149**	**374,965**
DEPRECIATION	20,000	17,592	20,000	17,592	17,592	20,000
WUTCHUMNA WATER COMPANY	25,000	22,397	25,000	21,994	23,000	25,000
FWA O&M PAYMENTS	54,000	48,980	55,000	39,106	43,342	55,000
LONGS CANAL	12,000	18,176	12,000	18,176	18,176	12,000
KAWEAH PURCHASES					190,000	120,000
TID CVP CONVERSION					114,000	30,000
SLDMWA	72,000	38,219	72,000	64,507	64,507	72,000
STATE WATER RIGHTS FEES	3,000	9,715	10,000	9,715	9,715	10,000
Sub Total	**186,000**	**155,079**	**194,000**	**171,090**	**480,332**	**344,000**
CVP WATER SUPPLY	84,775	89,156	88,450	36,595	36,595	90,000
TRINITY	770	467	330	23	23	500
USBR RESTORATION FUND	65,030	86,251	61,980	86,251	86,251	88,000
USBR FRIANT SURCHARGE	49,000	65,877	46,200	65,877	65,877	68,000
WATER TRANSFERS / RWA	35,000		35,000			35,000
Sub Total	**234,575**	**241,751**	**231,960**	**188,746**	**188,746**	**281,500**
GRAND TOTAL	**1,069,495**	**1,107,656**	**1,201,055**	**877,405**	**1,332,103**	**1,453,395**