Jordan Valley Water Conservancy District

Advanced Metering Infrastructure Program

Reclamation WaterSMART
Water and Energy Efficiency Grant Proposal

Funding Opportunity Announcement No. R14AS00001

Prepared by

JORDAN VALLEY WATER
CONSERVANCY DISTRICT

Delivering Quality Every Day

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January 22, 2014

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1.0 Technical Proposal

1.1 Executive Summary

Date: January 22, 2014

Applicant: Jordan Valley Water Conservancy District (District)

City/County/State: West Jordan, Salt Lake County, Utah

This application is for funding by the Bureau of Reclamation's (Reclamation) WaterSMART: Water and Energy Efficiency Grants for FY 2014 Funding Opportunity Announcement (FOA) No. R14AS00001. This application is seeking $300,000 in federal funding assistance for Federal Funding Group I to implement Advanced Metering Infrastructure (AMI), which includes the installation of approximately 8,600 new water meters for its retail customers. Jordan Valley Water Conservation District (District) proposes to install AMI meters for retail water users as a means to increase water conservation and water use efficiency by providing customized and near real-time water consumption data to serve its retail customers. The project will provide benefits within Task Area A – Water Conservation - as defined by Reclamation's FOA by enabling customers to alter use patterns resulting in better managed water use for higher conservation. Water consumption at user end-points will be decreased by continually identifying and communicating user inefficiencies (over-irrigation, etc.) and leaks (leaky toilets, faucets, indoor/outdoor plumbing, etc.). As a result, less energy will be used for treating and distributing potable water, treating and discharging wastewater, and reducing water heating and circulation to retail water users (Task Area B). The project is not located on federal project lands. When complete, the project will result in an annual water savings of at least 485.4 acre-feet (AF), as described in this grant application, as well as improved overall water management. The requested funds ($300,000) comprise 8 percent of the $3,559,849 total project cost and will provide the resources needed to assist the District with implementing the AMI Project. Installation of the meters will begin in July 2014 and be complete by December 2014. The conservation programs outlined in Section 1.3.1.2 – Implementation and Best Practices – will commence immediately upon installation of the new meters. Although these programs may continue indefinitely, for the purpose of this WaterSMART grant application, the performance period for these programs and associated customer service will extend thru July 2015.

1.2 Background Data

The District is one of the largest water districts in the state and encompasses an area of approximately 186 square miles in the southern half of Salt Lake County and the northern tip of Utah County in the State of Utah. The headquarters is located in the City of West Jordan. The District was created in 1951 under the Water Conservancy Act as a political subdivision of the State of Utah.

The District is primarily a wholesaler of water to cities and improvement districts within Salt Lake County, 17 wholesale member agencies, but it also has approximately 8,600 retail connections in portions of unincorporated Salt Lake County. Of the total retail accounts, approximately 600 are commercial or institution accounts and the remaining 8,000 serve residential customers. Approximately ninety percent of its municipal water is delivered on a wholesale basis to cities and water districts; retail water deliveries make up about 10 percent of its deliveries. In addition, the District treats and delivers water to the Metropolitan Water District on a contractual basis for delivery to Salt Lake City and Sandy City, even though neither of these two cities is within Jordan

Valley Water's service boundaries. The District also delivers untreated water to irrigators in Salt Lake and Utah Counties to meet commitments under irrigation exchanges.

The District's service area is one of the fastest growing communities in the United States with an estimated population of 612,000 in 2013. Water use in 2012 was calculated to be 245 gallons per capita day (gpcd) which translates into approximately 165,142 AF of current water supply needed to serve the District's population. This water supply need does not include those necessary to serve the District's member agencies. The population is projected to steadily increase by approximately 50% over the next 25 years which will result in an average annual water supply need for the District of 250,920 AF by 2038 without conservation. Assuming implementation of the District's conservation program, the estimated water supply need is reduced to 196,417 AF, based on a projected 2025 usage of 191 gpcd. The District's long-term, state-mandated goal is to reduce per capita water use from 2000 levels by 25 percent by 2025. The AMI Project under discussion within this application is a critical component of meeting this goal.

1.2.1 Area Map and Project Map

Figure 1, at the end of this section, shows an area map which depicts the District's water resources and available infrastructure. The following is a list of features numbered and shown on Figure 1:

- **Upper Provo River Reservoirs (1)** – Once converted to small storage reservoirs, the majority of these Uinta lakes have now been rehabilitated and the storage rights moved to Jordanelle Reservoir. The District is a major stockholder in these lakes.
- **Weber/Provo Rivers Diversion Canal (2)** – Built by Reclamation as part of the Weber River Project, this canal conveys water from the Weber River and Echo Reservoir to the District. It is also used by the Provo River Water Users Association for the diversion of Weber River water to supply Deer Creek Reservoir.
- **Jordanelle Reservoir (3)** – With a capacity of 320,000 AF, this reservoir was built by Reclamation for the Central Utah Water Conservancy District (CUWCD) and collects and stores Central Utah Project (CUP) water rights on the Provo River. The District receives 50,000 AF of CUP water annually.
- **Deer Creek Reservoir (4)** – This reservoir was built by Reclamation as part of the Provo River Project and has a capacity of 152,000 AF. The District owns stock in the Provo River Water Users Association, which entitles it to water stored from the Provo, Weber and Duchesne rivers which are impounded in Deer Creek Reservoir.
- **Salt Lake Aqueduct (5)** – This 69-inch diameter pipe is operated by Metropolitan Water District of Salt Lake & Sandy (MWDSLS). It conveys Provo River Project water from Deer Creek Reservoir to service areas of Jordan Valley, Salt Lake City and Sandy City.
- **Southeast Regional Water Treatment Plant (SERWTP) (6)** – The District's 20 million gallons per day (MGD) facility treats water from the Salk Lake Aqueduct and local mountain streams.
- **Little Cottonwood Treatment Plant (7)** – Metropolitan's Water District's 100 MGD plant delivers water to Jordan Valley, Salt Lake City and Sandy City service areas.
- **Well Field (8)** – This high-quality aquifer is the source of groundwater for the District and many municipalities.

- **Jordan Aqueduct (9)** – A CUP facility built by Reclamation, this 78-inch pipeline is operated by the District for itself and Metropolitan Water District. It conveys water from Deer Creek and Jordanelle reservoirs and the Provo River to Jordan Valley Water Treatment Plant. It then transmits treated water to Jordan Valley and MWDSLS service areas.
- **Jordan Narrows Pump Station (10)** – Owned and operated by the District, this station pumps Utah Lake water into the Welby and Jacob canals for irrigation purposes as part of a large irrigation water exchange.
- **Jordan Valley Water Treatment Plant (JVWTP) (11)** – This 180 MDG plant was built by CUWCD and is operated by the District. It supplies water to many communities on the west side of the Salt Lake Valley. It is the largest treatment plant in Utah.
- **Wells, Equalization Reservoirs and Booster Pump Stations (12)** – These widely-dispersed facilities develop, store and pump water to District customers.
- **Jordan Aqueduct Terminal Reservoir (13)** – At 100 million gallons, this drinking water reservoir has the largest storage capacity in the state.
- **Bingham Canyon Water Treatment Plant (14)** – This 3.5 MGD plant was built by Kennecott Utah Copper LLC (KUC) for treatment of low pH groundwater comprised as a result of historical mining activities. Treated water is delivered to the District's zone D transmission system and is used in the upper pressure zones on the west side of the Salt Lake Valley.
- **South West Groundwater Treatment Plant (SWGWTP) (15)** – This 7 MGD plant was constructed by the District under agreements with the Utah Department of Environmental Quality and KUC. The plant treats high sulfate groundwater in the southwest portion of the Salt Lake Valley to municipal water standards. The plant also has the capability to treat shallow groundwater supplies.

Figure 2 shows the member agencies served by the District. The District's water supply is supplemented by various water supplies of the wholesale member agencies.

Figure 3 shows the District's service area, approximately 18 miles long by 10 miles wide. The following is a list of features shown on Figure 3:

- Over 285 miles of aqueduct, transmission, and distribution water pipelines
- Water Treatment Plants (WTP)
  - Jordan Valley Water Treatment Plant (JVWTP)
  - Southeast Regional Water Treatment Plant (SERWTP)
  - South West Groundwater Treatment Plant (SWGWTP)
- Twenty-nine drinking water storage reservoirs, including a 100 million gallon reservoir at the terminus of Jordan Aqueduct Reach 2;
- Fourteen booster pumping stations;
- Thirty large municipal wells throughout Salt Lake Valley;
- A 100 million gallon per day irrigation pump station; and
- Non-District aqueducts

Figure 4 shows the District's entire service area as well as the District's retail service area where the AMI is to be installed.

Figure 1 – Area Map

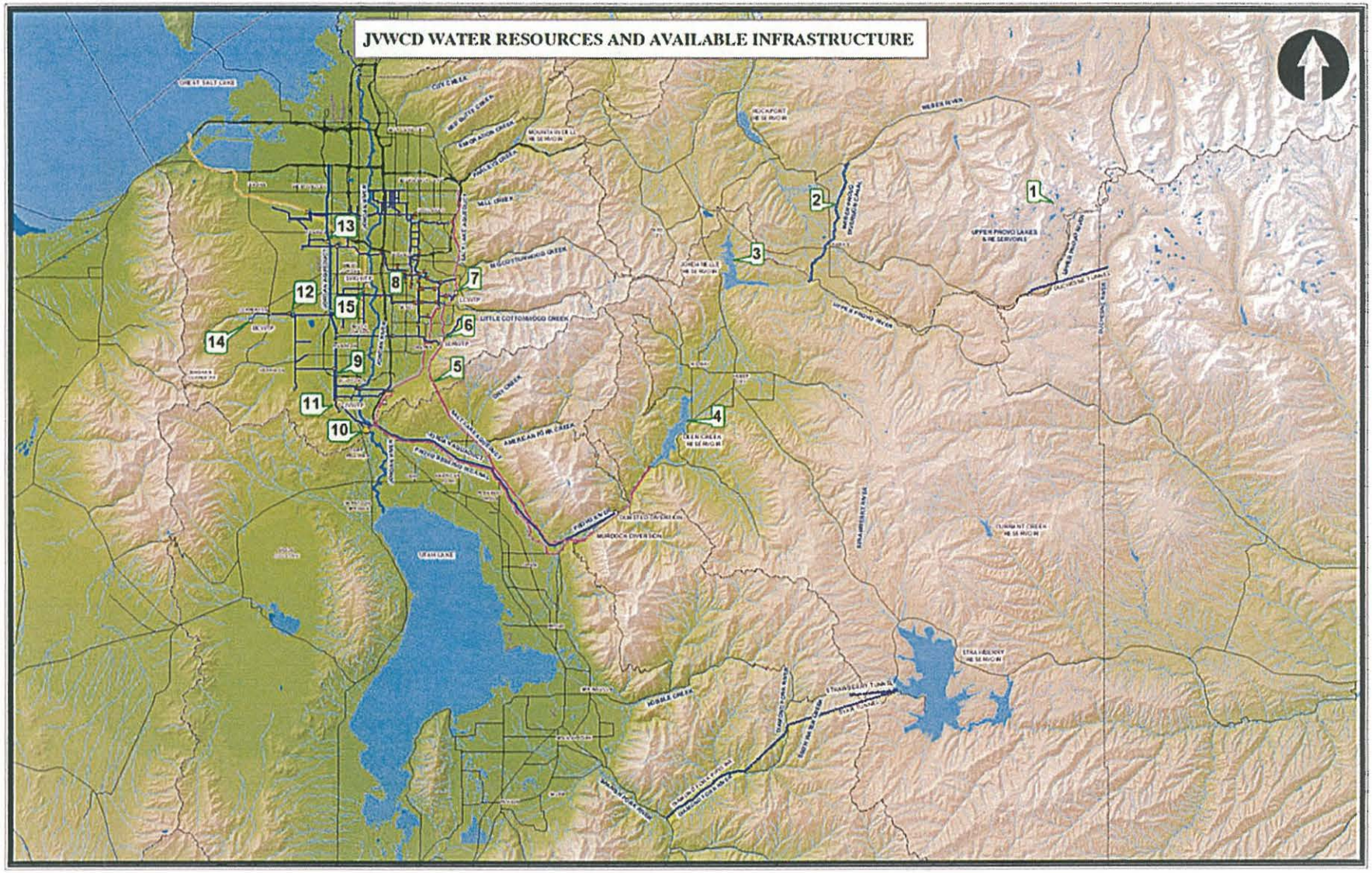


Figure 2 - Member Agencies Served

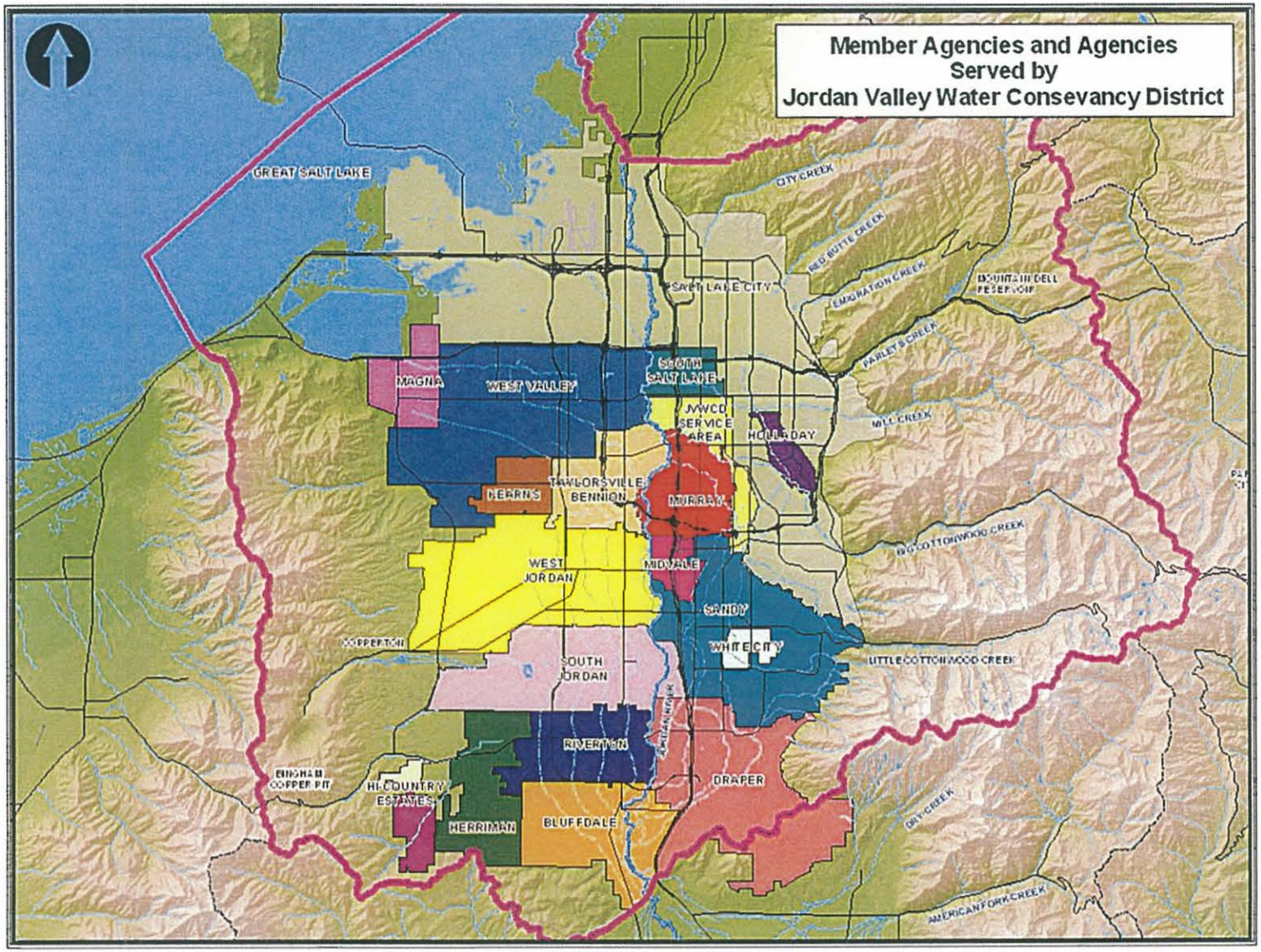


Figure 3 – Service Territory

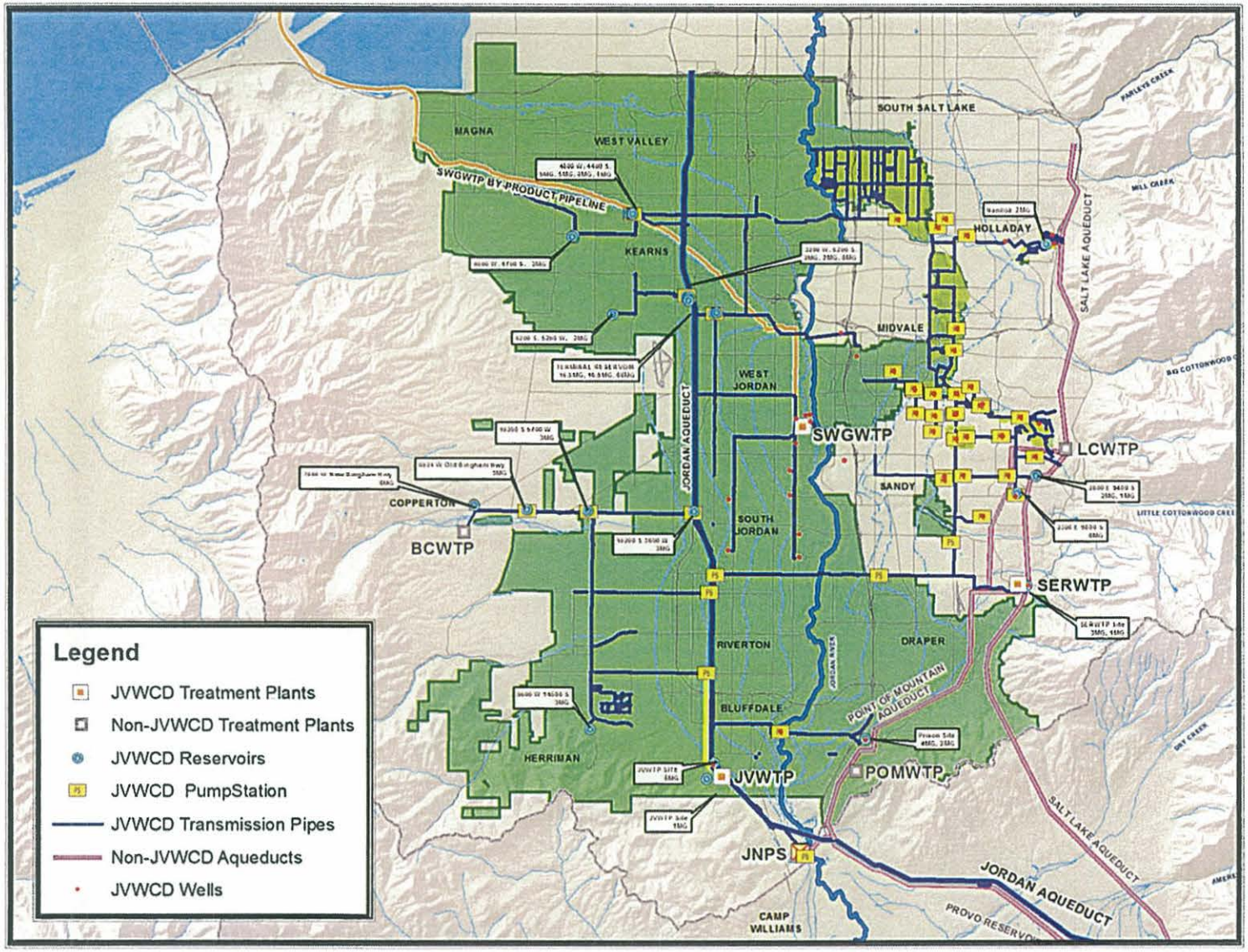
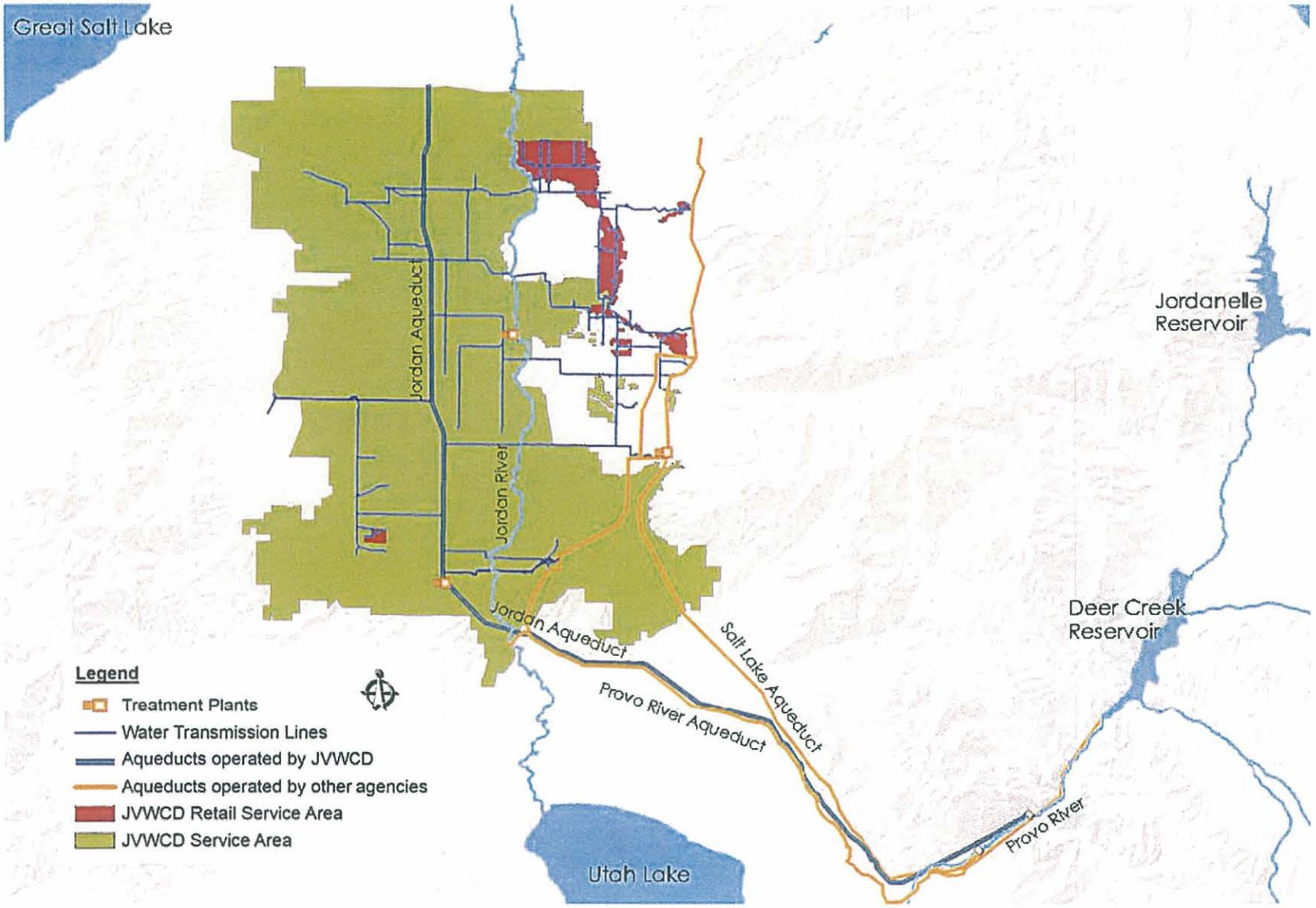


Figure 4 – Retail Service Area



1.2.2 Water Supply, Water Rights, Water Delivery System, and Current Water Uses

Water Supply

The District's water portfolio includes both surface and groundwater supplies. Approximately 90 percent of the water delivered by the District comes from surface water sources. The majority of this water is derived from the Provo River watershed that includes several high Uinta Mountain lakes, the Provo River and its tributaries, as well as Deer Creek and Jordanelle reservoirs. The majority of this water is treated at the JVWTP. The Provo River watershed covers approximately 825 square miles, or 528,000 acres in Wasatch, Utah, and Summit counties. In addition to Provo River water, Jordan Valley Water also treats snowmelt run-off at the SERWTP that comes from several mountain streams along the east bench of the Wasatch Mountains. The remaining 10 percent of water comes from groundwater sources located in a deep underground aquifer. These wells are located primarily in the southeast portion of the Salt Lake Valley and pump water from this aquifer for municipal and industrial deliveries within the District's service area.

Table 1 summarizes the District's municipal, industrial and irrigation water supplies for 2011 and 2012.

Table 1 – JVWCD Water Supplies

	2012 Water Supply (AF)	2011 Water Supply (AF)
Municipal & Industrial Water Sources		
Jordanelle Reservoir[a]	50,358	27,790
Deer Creek Reservoir[b]	12,159	17,230
Upper Provo River reservoirs[c]	1,876	2,623
Echo Reservoir	2,982	185
Provo River (unstored flows)	7,500	7,397
Weber River (unstored flows)	0	0
Salt Lake County mountain streams	1,826	4,284
Salt Lake County groundwater (wells)	14,126	15,527
Bingham Canyon WTP[d]	3,559	3,492
Subtotal for Municipal & Industrial	***94,386***	***78,528***
Irrigation Water Sources		
Jordanelle Reservoir[a]	24	35
Deer Creek Reservoir[b]	1,798	3,697
Upper Provo River reservoirs[c]	0	0
Echo Reservoir	17	0
Provo River (unstored flows)	6,368	17,944

	2012 Water Supply (AF)	2011 Water Supply (AF)
Weber River (unstored flows)	0	0
Subtotal for irrigation sources	***8,207***	***21,676***
TOTAL ALL SOURCES	**102,593**	**100,204**
Total water treated or transported for other agencies	5,985	4,628
TOTAL ALL WATER SOURCES & TRANSPORT	**108,578**	**104,832**

[a]Provo River source

[b]Weber, Duchesne and Provo River sources

[c]Stored in Jordanelle Reservoir

[d]Treats Salt Lake County Groundwater

Water Rights

District-owned surface and groundwater rights are summarized in Table 2.

Table 2 - Average Annual Yield (Normal and Drought Conditions at Acre-Feet per Year)

	Normal Snowpack Year		Multi-Year Drought Scenario	
Source	**Rights**	**Purchases**	**Rights**	**Purchases**
Central Water Project	n/a	50,000	n/a	50,000
Welby Jacob Exchange & other Provo River Sources	n/a	52,000	n/a	20,000
SL County Groundwater Wells*	42,820	n/a	50,467	n/a
SL County Mountain Streams	n/a	3,500	n/a	1,800
BCWTP	n/a	3,500	n/a	3,500
* Maximum authorized groundwater diversion. Currently equipped wells will yield approximately 60 percent of the authorized right. Volume produced from wells increases in drought years to make up for other lost sources, a plan adopted by the District's Board of Trustees.				

Water Delivery System and Current Uses

As described in more detail in Section 1.2.1, the District's service area covers approximately 186 square miles. The District owns and/or operates and maintains a substantial water transmission and distribution system. The District operates and maintains (and has a 5/7 capacity share) the Jordan Aqueduct System (a Reclamation project facility) which extends through northern Utah County and Salt Lake County.

The District delivers raw and treated water to 17 wholesale member agencies, retail residential and non-residential customers as well as to irrigation and non-potable users. Table 3 summarizes the

District's municipal and industrial (M&I) water deliveries for 2011 and 2012. The District has approximately 8,500 retail water connections of which approximately 93 percent are residential single-family homes or duplexes. As shown in Table 3, the District's retail deliveries in 2011 and 2012 ranged from 8,198 to 9,703 AF.

Table 3 - JVWCD Water Deliveries, 2011-2012

YEAR	JVWCD RETAIL DELIVERIES	JVWCD M&I DELIVERED TO MEMBER AGENCIES	JVWCD SYSTEM USE & LOSS	MENBER AGENCY PROVIDED WATER (1)	TOTAL PRODUCTION	
	Af/yr	Af/yr	Af/yr	Af/yr	Af/yr	gpcd
2000	11,098.94	65,889.05		55,379.45	132,367.44	254.26
2001	10,847.04	61,984.00		57,906.57	130,737.61	247.29
2002	9,366.78	59,735.36		52,711.03	121,813.17	226.95
2003	9,359.76	63,289.22		46,972.66	119,621.64	217.07
2004	9,365.72	66,525.22		44,533.51	120,424.45	212.63
2005	8,950.38	62,815.78		48,837.26	120,603.42	207.34
2006	9,469.19	66,683.00		59,970.53	136,122.72	227.51
2007	10,220.57	76,198.97		67,621.88	154,041.42	250.48
2008	9,489.88	72,616.98		64,564.91	146,671.77	230.81
2009	8,667.30	72,561.02		57,311.32	138,539.64	214.59
2010	8,920.62	72,566.64		59,483.89	140,971.15	214.99
2011	8,197.80	69,719.95	469	59,065.75	137,452.50	205.20
2012	9,705.20	84,038.29	563	70,835.12	165,141.61	244.61

(1) Represents all ground water and secondary water provided by member agencies (Not JVWCD)

Current and Projected Demand

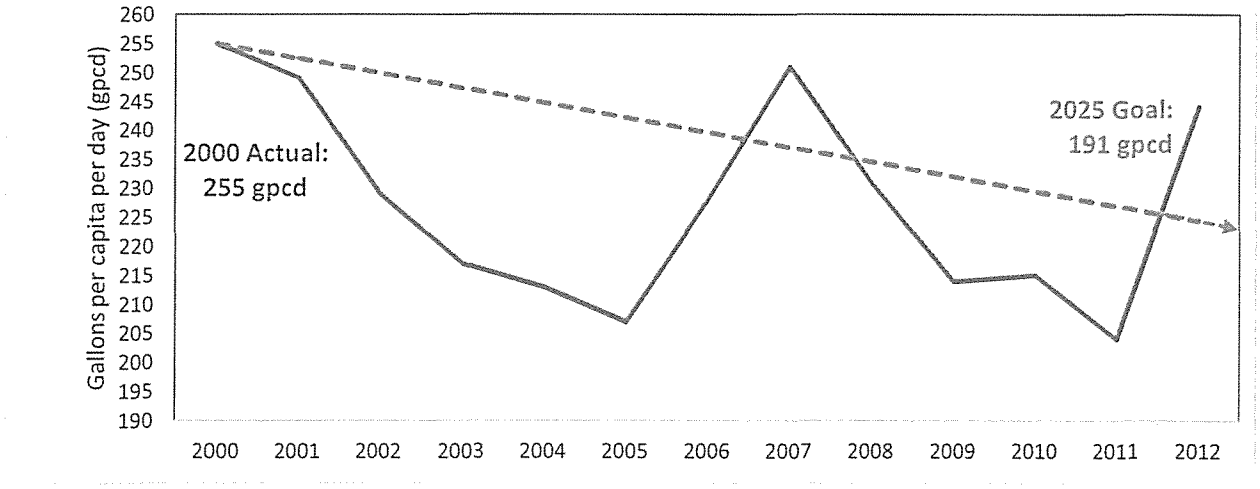
The District has made progress in reducing its water use to meet the state-mandated 25 percent water conservation by 2025 as shown in Table 4 and Figure 5. Table 4 presents the District's total and per capita water use by customer type for the years 2000 – 2012 within its retail service area. Figure 5 shows the District's progress in meeting its water use goals.

Table 4 - Retail Water Use by Customer Type, 2000-2012

	Residential		Large Users		Total Production (Retail Area)		Total Production (District Wide)	
	Af/yr	gpcd	Af/yr	gpcd	af/yr	gpcd	af/yr	gpcd
2000	4,375		6,724		11,098.94		132,367.44	254.26
2001	4,276		6,571		10,847.04		130,737.61	247.29
2002	3,692		5,674		9,366.78		121,813.17	226.95
2003	3,690		5,670		9,359.76		119,621.64	217.07

	Residential		Large Users		Total Production (Retail Area)		Total Production (District Wide)	
2004	3,692		5,674		9,365.72		120,424.45	212.63
2005	3,528		5,422		8,950.38		120,603.42	207.34
2006	3,733		5,736		9,469.19		136,122.72	227.51
2007	4,029		6,192		10,220.57		154,041.42	250.48
2008	3,741		5,749		9,489.88		146,671.77	230.81
2009	3,417		5,251		8,667.30		138,539.64	214.59
2010	3,517	47.09	5,404	71.64	8,920.62	117.73	140,971.15	214.99
2011	3,232	42.46	4,966	63.69	8,197.80	106.15	137,452.50	205.20
2012	3,826	49.34	5,879	74.01	9,705.20	123.35	165,141.61	244.61
Average	3,750	Not applicable	5,763	Not applicable	9,512.25	Not applicable		Not applicable

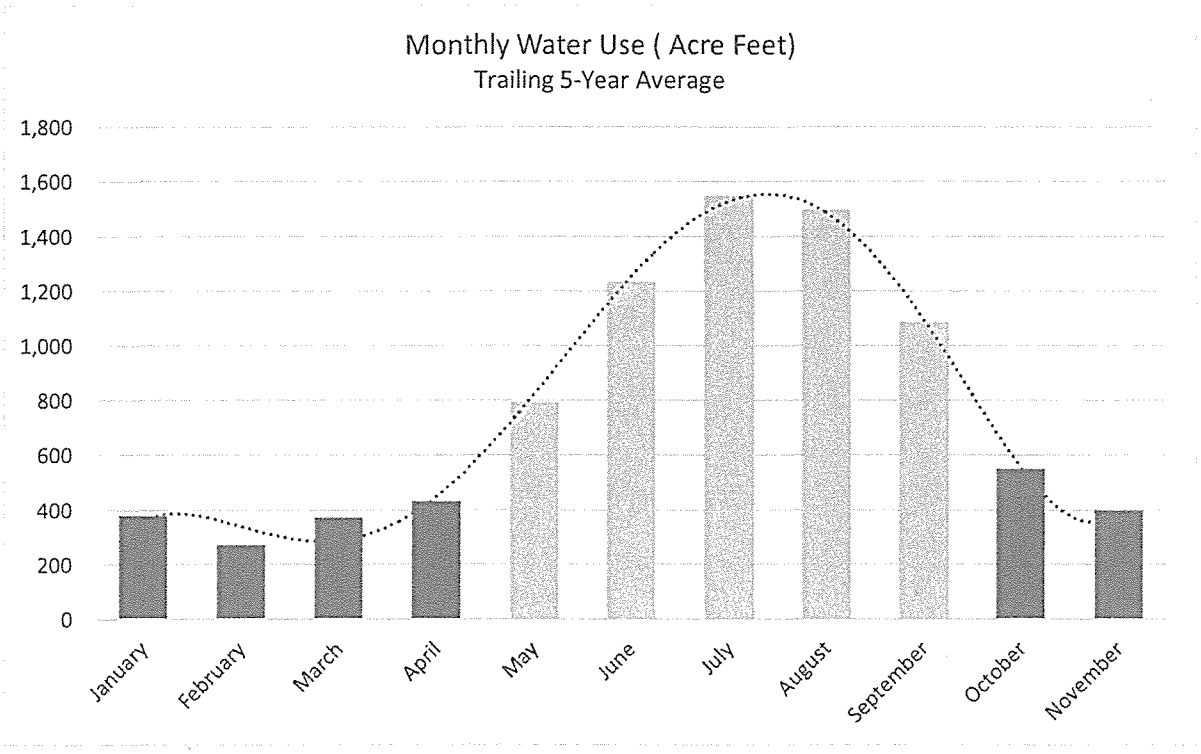
Figure 5 - Total per Capita Water Use within the District 2000-2012



As illustrated in Table 4 and Figure 5, the trend for general reductions in per capita consumption demonstrate the positive effects of the existing water conservation program and indicate progress towards meeting the District's goals. Additional water conservation, however, is required if the District is to meet its water use savings goal. Figure 6 presents average seasonal water use data for 2012 for the District which shows that approximately 65 percent of the annual water use in the retail system occurs between the months of May through September resulting primarily from outdoor water use. In particularly dry years, the seasonal consumption represents 70 percent or more of the annual water use within the District.

Reduction of outdoor water use provides a significant opportunity for water conservation for the District's customers.

Figure 6 - Seasonal Water Use (Acre-Feet per Month), 2012



1.2.3 Existing and Previous Bureau of Reclamation Partnerships

The District is a major water user in the Provo River Project and the Bonneville Unit of the Central Utah Project. The District has worked with Reclamation on the following projects:

- **Central Utah Project (CUP)** – The District is the largest petitioner of Bonneville Unit CUP water including a petition contract for 50,000 acre feet stored in Jordanelle Reservoir and a petition contract for 21,400 acre feet derived through the Utah Lake Drainage Basin Water Delivery System, which will be stored in Strawberry Reservoir. This water supply is primarily conveyed through the Jordan Aqueduct System, a major Reclamation facility.
- **Provo River Project (PRP)** - The District is a majority stockholder in the Provo Reservoir Water Users Company (PRWUC), which in turn owns stock in the Provo River Water Users Association. This stock ownership entitles The District to water stored in Deer Creek Reservoir, a primary component of the PRP.
- **Weber River Project (WRP)** - The District's stock ownership in the PRWUC entitles it to storage water in Echo Reservoir and conveyance capacity in the Weber-Provo Diversion Canal, key project facilities of the WRP.

1.2.4 Water Conservation Goals and Existing Water Conservation Program

The District's long-term goal is to reduce per capita water use from 2000 levels by 25 percent by 2025. To meet this goal, the District will leverage the AMI Project to help more discretely track, evaluate, and demonstrate the individual and overall effectiveness of its conservation initiatives.

Accurate real-time data gathered from the AMI system with its service area will allow the District to determine which conservation measures save the most water and have a higher benefit-cost ratio. Such information, it turn, can be used by its 17 wholesale member agencies as a basis for implementing water conservation practices within their service areas.

Savings from the AMI Project within the District's retail service area are expected to total approximately 485.4 AF/year, or 9643.7 acre-feet over the 20-year life cycle of a typical AMI meter. Extrapolating these savings to the Regional Program envisioned for the District's entire service area, estimated savings would be approximately 8959.6 AF/year or approximately 165,192 AF over a 20-year period.

Additional environmental benefits will also be achieved through the AMI Project through the elimination of meter readers taking vehicle trips to read meters monthly. This will reduce Greenhouse gas emissions and help promote clean air conservation efforts.

Existing Water Conservation Program

The District has implemented a Water Conservation Plan (updated in October 2009) and has established itself as a leader in the area of water conservation within its service area and throughout the State of Utah. The District has constructed the initial phases of its Conservation Garden Park, and implemented several other water conservation programs:

- A 7.5-acre Conservation Garden and Education Center free and open to the public year-round
- An aggressive public education, information and marketing campaign (*Slow the Flow*)
- A free residential and commercial water audit program (*Water Check*)
- Development of model commercial and residential landscape ordinances which have been well-received and adopted by several member agencies
- Water-efficient landscape classes and workshops and landscaper certification program
- A Conservation Grant Program for member agencies providing funding support of up-to $50,000 per year for meaningful water conservation programs, projects and activities, including:
    - High-efficient toilet replacement programs
    - Smart irrigation timer rebate programs
    - Other Member Agency designed water conservation planning efforts
    - Water efficient irrigation system retrofits
- *Water Quest: Saving Water by the Yard* program. In this program, landscapes of Utah homeowners were retrofitted to show how beautiful and economic water-efficient landscapes can be

The District's water conservation program and water saving measures are designed to stretch existing water supplies to provide for indefinite deferral of the Bear River Water Supply Project. As illustrated in Section 1.2.2, the conservation program has been effective in reducing water demands.

1.3 Technical Project Description

This section includes a technical description of the AMI Project based on project planning completed to date. The District's AMI Project will install approximately 8,600 water meters for its retail customers. Benefits from this program will be immediate and the savings expected from the new

metering technology will result from enhanced water management and communication with water users.

The new water meters will use radio waves to send meter readings directly to the District to allow real-time monitoring of water use. This will allow the District to receive continuous information regarding customer's water consumption and allow customers to view water use in near real-time over the internet. By having near real-time access to water consumption information, customers can compare their actual use to their budgeted use and make adjustments in their use patterns to decrease consumption. This technology will improve water management within the District and increase conservation and water use efficiency.

1.3.1 AMI Evaluation

An integrated AMI solution is critical if the District and its retail customers are to fully realize the benefits of AMI for water conservation. The District and its Contractor, CH2M HILL, prepared a draft AMI Study Report to develop a strategic, multi-faceted approach to accomplish its goal of reaching 25 percent water conservation by 2025. The District recognizes that to ensure success, its conservation strategy must leverage smart technology to provide compelling and actionable customer information, and ultimately motivate changes in behavior.

1.3.1.1 Meter Vendor Peer Review

As part of the AMI Study Report, the District evaluated meter vendors in terms of their specific capabilities, reliability and performance levels as reported by peer utilities that currently use the devices and systems. Meter performance is particularly important since the accuracy of new meters may revise baseline numbers. The meter vendor peer review was intended to provide information that will allow the District to construct a meter vendor request for proposal (RFP) and make other informed decisions about their investment. In addition, a solid understanding of the available vendors and technologies will support budgetary estimating.

1.3.1.2 Implementation and Best Practices

As part of the outcome of the AMI Study Report, the District identified practical recommendations, based on industry best practices, for incorporating AMI successfully into the District's water conservation program. For the District's customers who are amenable to the need to conserve water, AMI will provide real-time data to help them control their consumption and save money. In addition, the District recognizes that there are also users who may be skeptical about who ultimately benefits from programs such as AMI. For this reason, the District identified successful customer outreach strategies and good communication practices as part of the AMI Study Report to pique customer interest, participation, and willingness to engage in conservation and change their water use behavior.

To optimize water management benefits provided by AMI technology and to enhance their existing water conservation program, the District plans to implement five related programs:

1) **Expanded Water Audit (*Water Check*) Program** – The District intends to expand its current water audit program known as *Water Check* by leveraging the AMI technology to proactively identify residential users with the highest consumption. Creating a system to alert the District when residential users' consumption exceed a theoretical/ model outdoor water budget will allow the District to identify the highest users and schedule water audits with them. The

educational component is proven to have the most impact upon primary water savings because the District staff is able to interface directly with the customer about relevant water conservation technology, water-efficient habits, available water-saving equipment and practices, and whether the residence is statistically above or below District water use averages. If desired by customers, the AMI technology could also send alerts directly to customers so that they can adjust their water use. Such "top user" programs have proven to be very effective in reducing peak summer consumption for outdoor watering. Residential irrigation audits are estimated to reduce outdoor water use by 20 percent per audit during the first three years after the audit.[1] When other water users such as multi-family housing or commercial users are audited, water savings can be considerably higher. Based on evaluation of water use before and after Water Checks conducted by the District, average water savings per audit total about 20 percent of the average annual residential use, or approximately 34,905 gallons per year.

2) **Enhanced customer education and awareness** – Studies have shown that customers save water when they become aware of their water use and understand measures they can take to reduce consumption. Linking AMI technology with a web portal to communicate with customers about their individual water consumption in new ways and on a near real-time basis, and to receive customer feedback in innovative ways is an important aspect of the District's AMI Program. The web portal would allow customers to access information about their water use wherever and whenever they like and allow them to:

   - Evaluate their consumption patterns against District-identified efficiency benchmarks;
   - Learn strategies to use less water through direct communication and accessing conservation tips; and
   - Obtain instant feedback so they can evaluate the impact of their water efficiency measures on their water usage and water bill.

   This has been demonstrated as a powerful and effective tool that can influence customers to reduce water use. For example, a 2011 American Water Works Association study[2] reported a 2.8 percent reduction in water use by residential customers provided with such information.

   In addition to providing feedback about their own water use, this program will provide customers information regarding how their water use compares with others. While current research is limited on the influence of social norms on water conservation, a large-scale field research project completed by Georgia State University[3] identified savings of up to 5 percent using when customers were provided a comparison to other customers as a benchmark for

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[1] Texas Water Development Board. November 2013. Water Conservation Best Management Practices for Municipal Users, November 2013 identifies an average of 15% savings per audit. District records show approximately 20% savings for the first three years following an audit

[2] American Water Works Association (AWWA). 2011. Customer Feedback and Behavioral Science Encourage Efficient Water Use. AWWA Opflow Magazine, December 2010

[3] Ferraro, Paul and Michael K. Price. 2011. Using Non-Pecuniary Strategies to Influence Behavior: Evidence from a Large-Scale Field Experiment and Ferraro, Paul. 2010. Conservation without Prices: The Impact of Information, Moral Suasion and Social Norms on Residential Water Use. Presentation at the Georgia Association of Water Professionals Spring Conference.

their own use. Along with providing customers information about their use compared with others, messaging on water bills encouraged water conservation as a civic responsibility and was accompanied by conservation tips. The research found that this reduction based on social norms was similar to the short-term impact of approximately a 15 to 20 percent increase in price and was sustained over time.

3) **Improved billing accuracy, leak detection and enhanced billing formats** - Because the AMI technology allows measurement of very low flows, it will allow the District to measure small uses that previously were not measured. This will support better management of water resources. Importantly, the technology will support a *Leak Alert* program whereby the District and customers (if desired) receive alerts when very low flows are present for an extended period of time. The US Environmental Protection Agency estimates that, on average, households waste 10,000 gallons per year.[4]

4) **Demonstration project and research** – Using the AMI Program data, the District will evaluate the effectiveness of its conservation program and water-efficiency measures. Specifically, staff will evaluate water use for accounts that have participated in different existing conservation practices such as water audits, fixture or landscape retrofits, and educational programs. "Before and after" data will be used to document savings. For proposed initiatives, the District will conduct pilot studies and use the AMI-generated data to gauge cost-effectiveness and actual water savings from the new measures prior to system-wide implementation.

   During the first year of the grant period, the District intends to use the 12 month AMI Program implementation cycle from August 2014 through July 2015 to conduct innovative research to evaluate the degree to which approaches to communicating with customers correlate with demonstrated and sustained water-savings. The research design includes establishing five customers groups that will receive information about their water use in different ways. Each customer group will be composed of 250 residential customers having a mix of different customer characteristics such as lot size, initial per connection water use, home value, automatic sprinkler system or "hose draggers" and similar factors. Water use data will be collected and analyzed to assess water savings that can be attributed to the metering technology and that attributed to communication strategies. The five groups will include:

   - AMI technology and access to web portal (immediate access, direct and frequent communication)
   - AMI technology with enhanced billing information (no web portal access)
   - AMI technology with semi-annual water use reports (no web portal access or enhanced billing)
   - AMI technology and no direct communication/information about water use other than standard bills
   - Existing meters and no direct communication/ information about water use other than standard bills

[4] http://www.epa.gov/WaterSense/pubs/fixleak.html

An analysis of water use information for customers within the five groups will help the District gauge the actual effectiveness of certain measures, identify which programs are producing results, and inform decisions about future strategic communications. Analysis of the data will also allow the District to correlate water use to other factors such as home age, home size (square footage), home tax value, home ownership, lot size or other customer characteristics. This will allow the District to provide more targeted and personalized conservation suggestions to its customers.

5) **Regional Program** – The District will communicate the results of the demonstration project with its 17 member agencies. In addition, the District will leverage its Conservation Grant Program to provide incentive and financial assistance to its member agencies to implement AMI and other innovative communication strategies. The District will look at increasing the grant funding (currently $50,000) available to member agencies who wish to implement these programs to encourage water conservation throughout the service area. Because the residents living within the District's retail service area represent approximately 4 percent of the total population and 7.5 percent of total water use, water savings within the entire District is expected to be 8259,6 AF/yr when fully implemented.

In summary, the AMI Project involves installation of approximately 8,600 meters which will improve the District's overall water management within its retail service area. Other elements of the program including instituting industry-recognized best practices to raise customer awareness, improve water management and reduce water use through customized water audits, leak alerts and improved billing formats. In addition to the measurable water saved during the grant period and throughout the life cycle of the meters, the AMI Project will facilitate innovative research to correlate communication and social norming approaches with water use reduction. The estimated direct annual water savings to be achieved from the program and associated conservation measures is 485.4 AF/yr within the District's retail service area and 9643.70 AF over a 20-year life period. When expanded to all 17 wholesale member agencies, the water savings are estimated to be as much as 8,260 AF/yr. The estimated cost of the AMI Project is $3,559,849.

1.3.2 Proposed AMI Technology

Of the total retail accounts, approximately 600 are commercial or institutional accounts and the remaining 8,000 serve residential customers. Residential meters range from ¾" to 1" meters while commercial accounts include 1-1/2" to 8" meters.

1.3.2.1 AMI Meters

The District is scheduled to solicit proposals from selected vendors based on the results of peer review studies. The draft report was completed in December 2013 with the initial results of the peer review and the final report is in progress. The peer review study focused on the following areas:

- Current system details
- Vendor selection rationale and satisfaction
- Performance
- Reliability
- Technology functionality
- Integrated information technology

1.3.2.1 AMI Software

Installing advanced meters will ensure that usage information is collected reliably and transmitted to a data collection point. AMI software is essential in transforming that information into meaningful information and this, in turn, requires that the software is capable of managing the large amounts of data being collected. As part of the planning for the AMI Project, the District reviewed a number of vendor bundled systems, third party systems, conservation web portals, and its existing IT environment. Based on the outcome of these planning studies, the District will solicit RFPs from selected vendors as well as vendors responsible for providing system upgrades that are necessary for peak software performance.

1.4 Evaluation Criteria

1.4.1 Evaluation Criterion A: Water Conservation

The District's long-term goal is to reduce per capita water use from 2000 levels by 25 percent by 2025 (191.25 gpcd). Section 1.3.1.2 provides detailed information regarding the conservation practices to be implemented as part of the AMI Program. The following section explains how savings were calculated and presents expected water savings.

Subcriterion No. A.1(a) – Quantifiable Water Savings

Describe the amount of water saved. For projects that conserve water, state the estimated amount of water conserved in AF per year (include direct water savings only).

The project is expected to directly conserve at least 485 AF on an annual basis which represents slightly more than 5 percent of the 2012 retail system demand – primarily from the residential sector. As the *Water Check* program expands to include more commercial, institutional and larger water users and as the retail service population increases over time, the volume of water saved on an annual basis is expected to increase. The one-time investment to install approximately 8,600 AMI meters is expected to save approximately 9,644 AF over a 20-year period. Table 5 summarizes the estimated water saved from the AMI Project and associated best practices. If the Regional Program expands to all 17 wholesale member agencies served by the District, annual savings are expected to be approximately as much as 8,260 AF/yr.

What is the applicant's average annual acre-feed of water supply?

As shown in Table 1 (Section 1.2.2), the District's annual water supply from all sources was 108,578 and 104,832 AF in 2012 and 2011, respectively.

As a result of the District's conservation programs, per capita demand has been trending downward. Implementation of the AMI Project for residential retail customers will further reduce per capita water demand. This is expected to defer the need for the Bear River Water Supply Project.

Where is that water currently going (i.e., back to the stream, spilled at the end of the ditch, seeping into the ground, etc.)?

Most of the water that will be conserved, primarily outdoor water use, currently is returned to the ground or evaporates during outdoor irrigation. A small portion of the water that will be conserved is a result of indoor leaks or excessive water use and may currently be collected and treated by various local city wastewater systems.

Where will the conserved water go?

Fewer diversions will result in less draw from stored water in Jordanelle, Deer Creek, and Strawberry Reservoirs. Conserved water will remain in the Provo, Weber, and Duchesne River watersheds instead of being diverted. In addition, due to positive water conservation results, the District has been able to turn-back 5,000 AF annually to the Central Utah Water Conservation District which supports upstream fishery flows in the Prado River. The implementation of the AMI Project will assist in allowing the District to continue this annual turn-back program even as the population grows.

Summary of Water Savings Calculations and Methodology

How has the estimated average annual water savings that will result from the project been determined?

Estimated average annual water savings have been calculated using reduction factors specific to the best practices to be implemented as part of the AMI Project – increased number and targeted water audits; customer awareness, communication and enhanced billing; and leak alerts. Table 5 summarizes the calculations and expected water savings from the best practices that will be implemented as part of the AMI Project. Within three years of project start-up, the annual savings are expected to be approximately 485 AF.

Table 5 - Estimated Water Savings Summary for JVWCD Retail Customers

Best Practice	Calculation	Estimated Annual Water Saved (AF/yr)	Estimated Water Saved (AF/20-years)
Water Audits (Water Check Program)	Average residential use/connection X 20% reduction X 200 of audits/year (life-cycle for audit savings is assumed to be 3 years). If audits are conducted for commercial customers and those with large meters, volume of water saved would be greater.	Year 1 = 21.42 AF Year 2 = 42.85 AF Year 3 = 64.27 AF	1,221.16 AF
Customer Awareness, Communication & Enhanced Billing	Average per capita water use X 2012 population X 5% savings Plus average large meter/commercial per capita water use X 2012 population X .24% savings (commercial users tend to have less discretionary use, reducing expected savings from this sector)	318.75 AF	6,374.98 AF
Leak Alerts	Average leak volume/ household/ year X number of residential connections	102.38 AF	2047.56 AF
Total Estimated Water Savings		485.4 AF Year 3 and beyond)	9643.7 AF

How have current distribution system losses and/or the potential for reductions in water use by individual users been determined?

Water entering the system (e.g., at treatment plants and wells) is metered using SCADA (supervisory control and data acquisition) system or manually read. Similarly, water delivered through the system to wholesale or retail customers is also metered. Water loss is tracked monthly to help the District monitor system efficiency and identify leaks or discrepancies. The AMI Project is expected to decrease the apparent losses in the system resulting from improved measurement of low flows.

Describe water use patterns and the potential for reducing such use.

Table 4 and Figure 5 in Section 1.2.2 show the total and seasonal water use by the District's retail customers. The best practices described in the technical proposal in Section 1.3.1.2 are expected to increase water use efficiency, thereby reducing peak seasonal use resulting from outdoor watering.

What types (manufacturer and model) of devices will be installed and what quantity of each?

Of the total retail accounts, approximately 600 are commercial or institution accounts and the remaining 8,000 serve residential customers. Residential meters range from ¾" to 1" meters while commercial accounts include 1-1/2" to 8" meters. The District is scheduled to issue a solicitation notice for proposals from selected vendors based on the results of peer review study described in Section 1.3.2.1. The following is a list of selected vendors and system models:

- Neptune Technology Group, R450
- Sensus, FlexNet
- Mueller Systems, Orion SE
- Itron, Water SaveSource
- Metron-Farnier, VN

How will actual water savings be verified upon completion of the project?

As described in Section 1.2.3.2, the AMI Project provides for detailed water use data. This information will be used both to conduct research on the most effective practices that will be used in expansion of the Project throughout the District, but also used to generate semi-annual water use reports.

Subcriterion No. A.1(b) – Improved Water Management

Describe the amount of water expected to be better managed, in acre-feet per year and as a percentage of the average annual water supply.

The AMI Project improves the District's water management by installing meters for retail users with new advanced technology meters to improve billing accuracy and provide near real-time water use data. Customers will be able to track their actual water consumption and adjust their use as well as compare their water use with their peer group. This will result in increased water conservation and improved water efficiency as cited in Section 1.3.1.2.

The automation and data availability provided by this project will enable customers and the District to increase efficient water use and avoid water wasted by incidents such as pipe leaks and faulty valves leaking water. As of these improvements and based upon 9705 AF in retail sales per year, the District calculates that 6% of its total water supplied will be better managed.

Subcriterion No. A.2 – Percentage of Total Supply

Provide the percentage of total water supply conserved.

Approximately 484 AF/yr or, 5 percent, of the water used within the District's retail service area will be conserved. Because the retail service area population is only about 7 percent of the total population within the District, this represents approximately 0.3 percent of the total water supply used within the District's entire service area. The total annual water supply is based on 2012 water supply.

$$\frac{\text{Estimated Amount of Water Conserved} = 485 \text{ acre-feet}}{\text{2012 Annual Water Supply within Retail Area} = 9705 \text{ acre-feet}} = 5\%$$

Subcriterion No. A.3 – Reasonableness of Costs

Provide information related to the total project cost, annual acre-feet conserved (or better managed), and the expected life of the improvement.

As described in detail in Section 7, the assembled cost of the project for planning and installation has been estimated to be $3,559,849, of which the federal share would be approximately $300,000. The estimated project cost over the expected 20-year life of the project is $369.14/acre-foot. If the grant is awarded at the full amount requested, the federal investment would cost an estimated $31.11/acre-foot of water saved over a 20-year period.

$$\frac{\text{Total Project Cost} = \$3,559,849}{\text{9643.7acre-feet Conserved x 20-year}^{5}\text{ Improvement Life}} = \$369.14/\text{acre-feet}$$

1.4.2 Evaluation Criterion B: Energy-Water Nexus

Subcriterion No. B.1 – Implementing Renewable Energy Project Related to Water Management and Delivery

Describe the amount of energy capacity.

This is not applicable to the project.

Describe the amount of energy generated.

This is not applicable to the project.

Describe any other benefits of the renewable energy project.

This is not applicable to the project.

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

In 2009, the District, twelve of its member agencies, and two wastewater treatment plants within the District's boundary agreed to participate in the Utah Division of Water Resources study of their

[5] 3-year life cycle used for the water audit savings; 20-year life cycle used for other savings practices.

energy requirements[6]. The results of the study identified where the District's water-related energy was being used as shown in Table 6.

Table 6 - District Energy Intensity Ranges

Water Cycle Phase	Energy Intensity (kWh/AF)
Source and Conveyance Facilities	
Surface Water	0-100
Groundwater	700-950
Recycled Water	10
Water Treatment	40-50
Distribution	140-220
Wastewater Treatment	400-850

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water management project (e.g., reduced pumping).

This project will increase energy efficiency within the District's water delivery system, at the user endpoint, and at the wastewater treatment plant. The District's water supply flows by gravity to the water treatment plants and is conveyed through a series of distribution lines, pump stations, and storage tanks.

Because this project will result in less retail water use, less energy will be consumed for water treatment and pumping to meet demand. Additionally, less water will be conveyed for wastewater treatment. Less water pumped and treated results in less energy used at the pump station and treatment plant.

Include quantifiable energy savings calculation in kilowatt hours per year.

Table 7 summarizes the energy savings calculations which are itemized by source and conveyance facilities, water treatment, and distribution based on an assumed energy intensity for the ranges shown in Table 6.

[6] Utah Division of Water Resources. September 2012. The Water-Energy Nexus in Utah, Meeting the Water and Energy Challenge, September 2012.

Table 7 - District Energy Intensity Ranges

Water Cycle Phase	Energy Intensity (kWh/AF)	Water Conserved (AF/year)	Energy Savings Range (kWh/year)
Source and Conveyance Facilities			
Surface Water	15	437	6,500
Groundwater	700	48	33,600
Water Treatment	40	485	19,400
Distribution	140	485	67,900

Utah Division of Water Resources. *(September 2012). Water-Energy Nexus in Utah.* Page 20

Describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the project impact the current pumping requirements?

The District's service area covers approximately 186 square miles which includes an extensive water transmission and distribution system including water treatment plants, storage reservoirs, large municipal wells, and fourteen booster pumping stations. Because this project will result in less retail water use, less energy will be consumed for water treatment, distribution, and wastewater treatment.

Does the calculation include the energy required to treat the water?

As shown in Table 7, the calculations include energy required to treat the water.

Will the project result in reduced vehicle miles driven, in turn reducing carbon emissions? Provide details and calculations.

Environmental benefits will also be achieved through the AMI Project through the elimination of meter readers taking vehicle trips to read meters monthly. As shown in Table 8, the District currently uses a total of 3319 gallons in gas every year. This amount will be substantially reduced by eliminating regular meter reads. This will measurably reduce Greenhouse gas emissions and help promote clean air conservation efforts.

Table 8 - Gallons of Gas Used per Year

Vehicles	Gal Used
2003 Chev 1/2 Ton Pickup	405.8
2005 Chev 1/2 Ton Pickup	894.7
2005 Chev 1/2 Ton Pickup	286.4
2008 Chev 3/4 Ton Ext 4X4 Pickup	731.0
2008 Chev 1/2 Ton Pickup	1,001.3

Describe any renewable energy components that will result in minimal energy savings/production.

The project will not implement a renewable energy system.

1.4.5 Evaluation Criterion C: Benefits to Endangered Species

There are two aquatic species that are listed as federally endangered or candidate species within Salt Lake County where the District is located. In addition, there are several endangered and candidate aquatic species listed in Wasatch and Utah counties, which encompass the area of the District's water supply sources. However, many of these species listed are associated with the eastern portion of Wasatch and Utah counties which are connected to the Colorado River system. The project area is situated in the Provo River system and the Great Salt Lake watershed, and does not have any tributary connections to the Colorado River system, therefore these species are not discussed.

The Least Chub (Lotichthys phlegethontis) is a small minnow which is federally listed as a candidate species[7]. A Conservation Agreement and Strategy for Least Chub was adopted in the State of Utah in November 2005[8]. The U.S. Fish and Wildlife Service (USFWS) has determined that listing the Least Chub as a threatened or endangered species under the Endangered Species Act is warranted, but that listing the fish at this time is precluded by the need to complete other listing actions of a higher priority[7].

The June Sucker (Chasmistes liorus) is a lakesucker endemic and unique to Utah Lake, Utah[9]. The species was federally listed as an endangered species with critical habitat on April 30, 1986 and is currently still listed as endangered.

For projects that will directly benefit federally-recognized candidate species, what is the relationship of the species to water supply?

Historically, Least Chub was widely distributed in the Bonneville Basin, including streams near Salt Lake City, ponds and swamps around the Great Salt Lake, Utah Lake, Beaver River, Parowan Creek, Clear Creek, Provo River, Snake Valley, and elsewhere[10] (Sigler and Sigler 1996). Currently, only five wild populations of Least Chub remain[9]. These populations are in the Snake Valley in Utah's West Desert and on the eastern border of the native range near the Wasatch Front, which is outside the District's water supply area.

For projects that will directly benefit federally-recognized candidate species, what is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species?

Least Chub populations are impacted by livestock grazing and groundwater withdrawals; predation and competition from nonnative fish; inadequate regulatory mechanisms controlling groundwater withdrawals; and the cumulative effects of drought, current and future groundwater withdrawals, and climate change. Reduced groundwater use as a result of the AMI Project, albeit minimal, has the potential to leave more water in the watershed, and in turn provide/enhance the intrinsic ecological benefits related to the Least Chub.

For projects that will directly accelerate the recovery of threatened or endangered species, how is the species adversely affected by a Reclamation project?

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[7] http://www.fws.gov/mountain-prairie/species/fish/leastchub/

[8] Utah Department of Natural Resources. November 2005. Conservation Agreement and Strategy for Least Chub, November 2005.

[9] U.S. Fish and Wildlife Service. June 1999. June Sucker (Chasmistes liorus) Recovery Plan. June 1999.

[10] Sigler W.F., and J.W. Sigler. 1996. Fishes of Utah: a natural history. University of Utah Press, Salt Lake City.

Throughout the year the June Sucker occurs in Utah Lake and then migrates to Provo River, Utah's Lake's largest tributary, for spawning in late May and June. According to the June 1999 Recovery Plan, the Provo River is the only remaining natural spawning habitat for the species. Although adult June Sucker still spawn in the river, it is believed that habitat and flow alterations are factors in reduced spawning success or recruitment. Flow alterations include the altered hydrologic regime of the Provo River as a result of Reclamation's storage facilities (Jordanelle and Deer Creek reservoirs).

For projects that will directly accelerate the recovery of threatened or endangered species, is the species subject to a recovery plan or conservation plan under the Endangered Species Act?

The June Sucker Recovery Plan was finalized by the USFWS in 1999. The plan identifies actions needed for recovery of the June Sucker to occur.

For projects that will directly accelerate the recovery of threatened or endangered species, what is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species?

June Sucker, because of their limited numbers and localized activity, are very vulnerable during their spawning run up the Provo River. Successful long-term protection and ultimate recovery of June Sucker is dependent on the acquisition of instream flows. Instream flows would benefit the entire aquatic community in the lower Provo River, including the June Sucker.

For many years the District has been able to "turn back" 5,000 AF of its CUP water annually to be used for instream flows which benefits the June Sucker Recovery Plan. The District has committed to continue this turn-back program for an additional 5 years beginning in 2014. This turn-back program can only be sustained through water conservation programs such as the AMI Project.

1.4.6 Evaluation Criterion E: Other Contributions to Water Supply Sustainability

Will the project address water supply shortages due to climate variability and/or heightened competition for finite water supplies (e.g., population growth or drought)? Is the river, aquifer or other source of supply over allocated?

Many of Utah's fastest growing communities are located in the District's service area. The current population within the service area is estimated to be 612,000. This population is projected to increase by approximately 50% over the next 25 years; it is projected to increase nearly 80% over the next 50 years to an estimated 1,098,858 in 2060.

Population growth along the Wasatch Front has planners projecting a need to import Bear River Water within the next couple of decades. The Bear River is the Western Hemisphere's largest stream that does not reach the ocean. The river rises in Utah, but flows through parts of Wyoming and Idaho before returning to Utah to empty into the Great Salt Lake. The Bear River is one of the few rivers in the state where there is still a developable water supply. Initial studies to develop this water supply include construction of new surface storage, construction of a new canal and/or pipeline, and construction of conveyance and treatment facilities. The District's water conservation program and water saving measures are designed to stretch existing water supplies to provide for indefinite deferral of the Bear River Water Supply Project.

In addition, Utah faces additional water-energy challenges due to the changing climate[11]. Some climate scientists predict that parts of the west will be both hotter and drier in the coming years. They also predict that droughts will be both longer and more intense than what has been experienced in recent history. Higher temperatures during warmer months would result in higher evapotranspiration rates, which in turn would result in a higher water use requirements. As part of the AMI Project, programs such as water audits and enhanced customer education and awareness will help customers reduce water use, specifically outdoor water use.

Will the project market water to other users? If so, what is the significance of this (e.g., does this help stretch water supplies in a water-short basin)?

The AMI Project will not specifically open new external water markets, but will provide a unique opportunity for the District to closely track customer water usage and identify new needs for water markets in the future. The abilities to closely monitor and understand the way in which commercial, industrial, landscape and residential customers are using water will assist the District in planning for and developing new water markets in the future.

Will the project make additional water available for Indian tribes?

No, this project will not make additional water available for Indian tribes.

Will the project help to address an issue that could potentially result in an interruption to the water supply if unresolved? (e.g., will the project benefit an endangered species by maintaining an adequate water supply)? Are there endangered species within the basin or other factors that may lead to heightened competition for available water supplies among multiple water uses?

Awareness and knowledge surrounding water scarcity, is known to shift paradigms related to how constituents value and consume water as a resource. It is anticipated that over time the AMI Project and its associated programs will reduce overall water use in the District/basin. Many of the rivers/streams in the basin support important fish (such as the federally listed June Sucker) and other aquatic biota, as well as providing habitat to wildlife. Reduced water use, albeit minimal, has the potential to leave more water in the river, and in turn provide/enhance intrinsic ecological benefits related to the aquatic environment and riparian habitats surrounding them.

Will the project generally make more water available in the water basin where the proposed work is located?

Yes, in general, the project will make more water available in the water basin from which the District receives its water supply. The reduced demand will result in fewer diversions and defer the need for Bear River Water Supply Project.

Is there widespread support for the project?

The District is a recognized leader in water management and conservation by its 17 member agencies; achieving success with this project is critical to demonstrating the capabilities and advantages of AMI for water conservation throughout the state of Utah. The District's 17 member agencies provide water, sometimes blended with their own sources, to more than 600,000 people

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[11] Utah Division of Water Resources. September 2012. The Water-Energy Nexus in Utah, Meeting the Water and Energy Challenge, September 2012.

every day. The District has gained widespread support from its neighboring communities for this project. Letters of support are provided in Attachment C.

What is the significance of the collaboration/support?

The significance of the increased collaboration between the District and its water customers is that customers will increase awareness of water conservation efforts and the District's water conservation programs. Support of this program by neighboring communities is also significant as it demonstrates acknowledgement of the District's progressive approach to increasing conservation through improved water management and success of the District's overall conservation program.

Will the project help to prevent a water-related crisis or conflict?

Even though the District has implemented a Water Conservation Plan, residents within the District still have one of the highest per capita water demands as compared to other western cities such as Las Vegas, NV, Albuquerque, NM, and Tucson, AZ, and Denver, CO. This project will provide drought reliability and reduced demand on already limited water supplies by helping water users change their behaviors, which will help the District gain support from other communities who have implemented successful conservation programs.

Is there frequently tension or litigation over water in the basin?

In 2003, Reclamation published maps of areas that they perceived were likely to experience conflict over water supply by the year 2025. In most metropolitan areas in the west, including the Salt Lake City valley, the likelihood of water supply conflicts was considered to be "highly likely." This project will serve as a model to other communities that are looking for ways to conserve water and meet requirements of 25 percent water conservation by 2025. Careful planning and collaboration among area water users will help to avoid future conflicts.

Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?

The District will communicate the results of the demonstration project with its 17 member agencies as previously described in the Regional Programs in Section 1.3.1.2. In addition, the District will continue to leverage its Conservation Grant Program to provide incentive and financial assistance to its member agencies to implement AMI and other innovative communication strategies. These programs to encourage water conservation will provide for future water conservation efforts by other water users in other member agencies.

Will the project serve as an example of water and/or energy conservation and efficiency within a community?

The District's AMI Project will increase awareness of water conservation and efficiency efforts. This project enables retail customers to have near real-time data of their water use and empowers them to change habits to conserve water. Overall results of this program will be broadcast throughout the community through newsletters and the District's website, promoting water conservation and efficiency efforts. In addition, the results will be communicated directly with the District's 17 member agencies. The results of the research will be available to utilities across the nation to advance effective water conservation practices.

Will the project increase the capability of future water conservation or energy efficiency efforts for use by others?

Yes, the project will increase the capability of future water conservation for use by others. The District's project will serve as a model for its member agencies and other utilities across the country. With demonstrated success, other agencies will likely consider implementation of a similar program.

Does the project integrate water and energy components?

The AMI Project is primarily a water project, but does have a reduced energy demand component. With reduced potable water demand, there will be less water required for pumping within the delivery distribution system resulting in less energy demand for treatment and pumping. Additionally, there will be less indoor water use, resulting in less water being pumped for treatment and less water requiring treatment at the wastewater treatment plant. Reduced pumping and treatment for disposal also results in less energy demand.

1.4.7 Evaluation Criterion F: Implementation and Results

Subcriterion No. F.1 – Project Planning

Does the project have a Water Conservation Plan, System Optimization Review (SOR), and/or district of geographic area drought contingency plan in place?

The District has implemented an aggressive Water Conservation Plan (updated in October 2009) and conservation goal, and has established itself as a leader in the area of water conservation within its service area and throughout the State of Utah.

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

In October 2013, the District contracted with CH2M HILL to assist the District in evaluating and recommending a new AMI system and new meters, prepare specifications to be included in competitive proposal documents, and assist in ranking proposals from various AMI and meter suppliers. In addition, CH2M HILL is assisting the District with planning efforts to ensure that the AMI Project serves the long-term goals and objectives of the District and its customers.

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 District's long-term goal is to reduce per capita water use from 2000 levels by 25 percent by 2025.

Subcriterion No. F.2 – Readiness to Proceed

Describe the implementation plan of the proposed project. Include a project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

If awarded the WaterSMART grant by May 2014, the District will obtain permits and have the funding to finalize the design and begin installation of the water meters by July 2014 to December 2014. The conservation programs outlined in Section 1.3.1.2 – Implementation and Best Practices – will commence immediately upon installation of the new meters. Although these programs may continue indefinitely, for the purpose of this WaterSMART grant

application, the performance period for these programs and associated customer service will extend thru July 2015.

Describe any permits that will be required, along with the process for obtaining such permits.

Federal approvals for the project include the National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), and Endangered Species (ESA) compliance. If successful in obtaining a WaterSmart grant, the District will work with Reclamation to determine the appropriate level of NEPA compliance. The project entails installing new meters and meter boxes and there are no earth-disturbing activities. All work will be done within public access areas. Therefore, it is expected that activities required for NEPA, NHPA, and ESA compliance will be minimal. If awarded the WaterSMART grant by May 2014, the District is confident that the necessary approvals can be secured by late-summer 2014.

There are no local permitting requirements.

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 (e.g., water saved).

Recording of water consumption data will be used to track project performance. The District will compare the monthly consumption data to previous year's monthly data to determine water savings resulting from the project. Additionally, the project will produce measureable energy efficiency as a result of reduced pumping, reduced gas use, and reduced wastewater treatment.

Additional information regarding specific performance measures is provided below in Section 1.5.

1.4.8 Evaluation Criterion G: Additional Non-Federal Funding

The non-Federal Funding portion of the total project cost is 92 percent, assuming a WaterSmart grant in the amount of $300,000.

$$\frac{\text{Non-Federal Funding} = \$3,259,849}{\text{Total Project Cost} = \$3,559,849}$$

1.4.9 Evaluation Criterion H: Connection to Reclamation Project Activites

How is the proposed project connected to Reclamation project activities?

The District's AMI Project will reduce demand on stored water in Reclamation's storage facilities along the Provo, Weber, and Duchesne rivers. As noted previously, the District receives significant water from Reclamation projects including the PRP, WRP and the Bonneville Unit of the CUP.

Does the applicant receive Reclamation project water?

Yes, the District receives stored water from Jordanelle Reservoir which is part of the CUP, Deer Creek Reservoir which is part of the PRP, and Echo Reservoir which is part of the WRP.

Is the project on Reclamation project lands or involving Reclamation facilities?

No, the project is not on Reclamation project lands, nor does it not involve Reclamation facilities.

Is the project in the same basin as a Reclamation project or activity?

Yes, the project is in the same basin as other irrigation entities that use water stored in Reclamation's storage facilities as part of the CUP, PRP and WRP.

Will the proposed work contribute water to a basin where a Reclamation project is located?

The project will indirectly benefit the CUP, PRP, and WRP by reducing the demand on stored water.

1.5 Performance Measures

Performance Measure No. A.2 – Measuring Devices

Will the project include new meters where none existed previously or replaces existing meters?

The AMI Project includes installation of approximately 8,600 new water meters for its retail customers where no meters existed previously.

Does the project include individual water user meters, main line meters, or both?

The AMI Project includes both individual water user meters.

If the project replaces existing meters with new meters, will new technologies (automatic meter reading/information) be employed?

All new water meters as part of the AMI Project will use AMI.

If main line meters are included, will system leak detection be improved?

Although main line meters are not included within the program, the AMI project will improve leak detection on the customer side of the meter as described previously.

Performance Measure No. B.2 – Increasing Energy Efficiency in Water Management

Explain the methodology for calculating the quantity of energy savings resulting from water management improvements or water conservation improvements.

Energy savings were calculated based on a current benchmark to determine average power consumption for each process within water delivery operations provided by the District. Anticipated savings were applied to the benchmarks to determine kilowatt hours to be saved by conservation.

Explain the anticipated cost savings.

It is anticipated that water reduction will translate into 127,400 kilowatt hours/year which will produce real cost savings as determined by the effective tariff in subsequent years.

Performance Measure No.C – Projects that Benefit Endangered Species and/or Critical Habitat

Explain the methodology used for benefitting federally listed species (threatened or endangered), federally recognized candidate species, or designated critical habitats.

As described in Section 1.4.5, the District has participated in a turn-back program for instream flows which benefits the June Sucker Recovery Plan. Through the AMI Project and its associated conservation programs, the District will continue to participate in this turn-back program.

2.0 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.

The AMI Project involves installation of water meters and boxes. There will be no impact to the surrounding environment as a result of the project. There is no earth- disturbing work involved with this project.

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

This project involves installation of water meters in developed, existing urban neighborhoods. There are no known endangered or threatened species in the project area.

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

No wetlands or other surface waters that could fall under Clean Water Act jurisdiction exist in the project area.

(4) When was the water delivery system constructed?

The delivery system was constructed starting in 1953, with system improvements made to the present day.

(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 those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

This project will not result in any modification of or effects to individual features of an irrigation system.

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

There no known historic sites within the project area. The District will work with Reclamation to verify this information during the Environmental Compliance phase. In the event that sites do exist, they will likely not be disturbed nor affected during the course of this project as it does not involve excavation or construction.

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

There are no known archeological sites in the proposed project area. No archaeological sites are anticipated to be encountered during the course of this project as it does not involve excavation or construction.

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

This project has the potential to provide positive monetary benefits to both low income and minority populations by identifying water inefficiencies so that they can be resolved in a timely manner.

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

This project will not limit access to and ceremonial use of Indian sacred sites. The District does not expect this project to negatively affect Tribal lands.

(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 project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native species know to occur in the area.

3.0 Required Permits or Approvals

Approval from the Board of a Purchasing Agreement for acquisition of project equipment (i.e., water meters, registers, boxes, and lids) is required. District staff anticipates presenting the Purchase Agreement for authorization at its May 2014, 2014 Board meeting.

Additionally, Reclamation requires environmental compliance prior to beginning work on the project. The District will seek the appropriate environmental consultation, however, since there is not ground breaking activities, nor work on any environmentally sensitive sites, the District does not anticipate a lengthy environmental review process.

No permits are required for this project.

3.1 Federal Permitting

Federal approvals for the project include NEPA, NHPA, and ESA compliance. The project entails installing water meters and meter boxes and there are no ground breaking activities; therefore, it is expected that activities required for NEPA, NHPA, and ESA compliance will be minimal.

- It is anticipated that the project does not have significant impacts on the environment and will fit within a recognized Categorical Exclusion (CE) to NEPA. Environmental impacts will be minimized during construction using BMPs.
- Federal cultural resource laws and regulations, including the NHPA and Native American Trust Assets, must also be reviewed prior to project construction. The District will cost share with Reclamation to conduct all necessary field surveys and literature reviews. It is anticipated that the project does not have the potential to cause effects to historic properties and that the findings will be concluded in the Section 106 process.
- It is anticipated that there are no endangered or threatened species or designated critical habitat in the project area and that no further compliance measures are required.

If awarded the WaterSMART grant by May 2014, the District is confident that necessary approvals can be secured by late-summer 2014.

3.2 State Permitting

There are no State permitting requirements.

3.3 Local Permitting

There are no local permitting requirements.

4.0 Funding Plan and Letters of Commitment

(1) How will you make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant?

This project will leverage $300,000 of federal investments against $3,259,849 of non-federal investments. There are no additional funding sources.

The District plans to fully fund this project with operating revenue. The District generates revenue through water sales to both wholesale and retail water customers. The District has the necessary funds in its capital improvements budget to fully fund this project. The District will provide $241,311 of match funding through in-kind staff resources (see Detailed Project Budget in Attachment A).

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

(a) What project expenses have been incurred

The District is currently evaluating what types of AMI systems and water meters are available, in anticipation of developing specifications to be included in competitive proposal documents.

(b) How they benefited the project

Planning efforts by the District will ensure that the AMI Project serves the long-term goals and objectives of the District and its customers.

(c) The amount of the expense

To date, it is estimated that the District has provided $10,500 of match funding through in-kind staff resources in support of planning for the AMI Project through December 2013. In addition, the cost of contractual expenses in support of these planning efforts totals approximately $75,000.

(d) The date of cost incurrence

Activities that have occurred from September 2013 to the present include the following:

- Meter and Vendor Peer Review in support of future RFP
- AMI Software Evaluation in support of future RFP
- Implementation and Best Practices Strategies for Water Conservation as part of the AMI Project

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

The non-federal portion of the project costs will be funded by the applicant only. No additional funding sources have been identified; therefore, no letters of commitment are included.

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

No federal funds have been requested or received from other federal sources aside from Reclamation.

(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.

No federal funds have been requested or received from other sources. The District strongly desires to implement the AMI Project; if the District is not successful in securing a WaterSMART grant in the amount of $300,000, the District will proceed with portions of the AMI Project such as installation of the AMI. However, in the absence of securing WaterSMART funding, the District may not have sufficient funds to fully implement the programs as outlined in Section 1.3.1.2 which are intended to optimize the water conservation results of the AMI.

Table 9 - Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	
Jordan Valley Water Conservation District	$3,259,849
Non-Federal Subtotal	$3,259,849
Requested Reclamation Funding	$300,000
Total Project Funding	$3,559,849

5.0 Letters of Project Support

The District plans to fully fund the non-federal portion of project costs; therefore, no letters of project commitment are included. Given the value of this project that extends beyond the District alone, letters of project support are included with this application in Attachment C.

6.0 Official Resolution

The District is committed to the financial and legal obligations associated with the receipt of financial assistance under the WaterSMART Grants Program. The District has the resources and capability to provide the amount of funding for contributions specified in the funding plan. The District will work with Reclamation to meet the established deadlines to enter into a cooperative agreement.

An official resolution which identifies the official with legal authority to enter into agreement will be adopted by the District Board of Directors at its meeting on February 12, 2014.

7.0 Budget Narrative

7.1 Budget Proposal

The assembled cost of the project has been estimated to be $3,559,849. The project estimate is based on reasonable and allowable costs; quotes for reputable meter vendors; input from

engineering professionals; and historical costs and production rates. These costs were assembled with the intent for installation of the water meters to begin in July 2014 to December 2014. The conservation programs outlined in Section 1.3.1.2 will commence immediately upon installation of the new meters. Although these programs may continue indefinitely, for the purpose of this WaterSMART grant application, the performance period for these programs and associated customer service will extend thru July 2015.

The detailed project budget is provided in Attachment A. A summary of non-federal and federal funding sources is shown in Table 9.

Table 10 - Summary of Non-Federal and Federal Funding Sources

Funding Sources	Percent of Total Project Cost	Total Cost by Source
Recipient Funding	92%	$3,259,849
Reclamation Funding	8%	$300,000
Total Project Funding	100%	$3,559,849

7.2 Salaries and Wages

As described in the budget table in Attachment A, the District expects to make an in-kind investment of $142,450 in salaries and wages. These investments support customer service, meter service and project management specific to this project, as follows:

- Project planning and implementation from Fall 2013 through Summer 2014
- Installation of AMI meters from July 2014 to December 2014
- Customer service from July 2014 through July 2015

In kind investments exclude general administration outside the AMI Project.

7.3 Fringe Benefits

As described in the budget table in Attachment A, the District expects to make an in-kind investment of $98,861 in fringe benefits. These investments provide for social security, Medicare, state pension, life and LTD insurance, workers compensation, sick leave, health insurance premiums and contributions to health reimbursement accounts. Fringe benefits are applied to all staff members based on workers compensation class.

7.4 Travel

There are no travel related costs associated with the AMI Project. District staff will replace meters during routine meter readings, therefore, there are no additional travel related costs.

7.5 Equipment

There is no special equipment required for this project. The installation of new meters and appurtenances will be performed with existing District equipment.

7.6 Materials and Supplies

The materials needed to complete this project are:

- AMI Communication Network
- Water meters
- Meter Interface Unit (MIU) Registers (instrumentation that measures and records water usage)
- Billing System - Software

A detailed breakdown of the materials needed, including water meter size and quantity, is provided in Attachment A.

7.7 Contractual

In October 2013, the District contracted with CH2M HILL to assist the District in evaluating and recommending a new AMI system and new meters, prepare specifications to be included in competitive proposal documents, and assist in ranking proposals from various AMI and meter suppliers.

7.8 Environmental and Regulatory Compliance Costs

For purposes of this budget proposal, environmental and regulatory compliance costs are estimated at approximately 1 percent of the total project cost. The District anticipates minimal environmental and regulatory compliance costs. The total budgeted amount for environmental and regulatory compliance costs for the project is $40,000.

It is anticipated that any environmental costs incurred would be related to the District's time and Reclamation time to: determine level of environmental compliance required for the project; prepare any necessary environmental compliance documents or reports; review any environmental compliance documents; and time required for approvals or permits.

7.9 Other - Reporting

This line item includes costs to be incurred while reporting to federal funders. In accordance with the FOA requirements, the following reports will be prepared by the District and submitted to Reclamation: SF-425 Federal Financial Report, quarterly reports (four reports per year), and a final report.

7.10 Indirect Costs

For this project, the recipient will not have any indirect costs. All costs associated with the project are direct and can be documented as such.

7.11 Total Costs

The estimated total project cost is $3,559,849. The requested federal share is $300,000; the total non-federal share is $3,259,849. A copy of the completed SF 424C, Budget Information-Construction Programs is included in provided in Attachment B.

8.0 Detailed Project Budget

Please refer to the Detailed Project Budget provided in Attachment A. A copy of the completed SF 424C Budget Information – Construction Programs is provided in Attachment B with the Supplemental Document.

ATTACHMENT A– SUPPLEMENTAL DOCUMENT

Attachment A - Budget Proposal

Budget Item Description	Computation $/Unit	Quantity	Unit	Total Cost
Salaries and Wages				
PLANNING AND DESIGN				
Assistant General Manager (FY2014)	$ 69.59	36	hour	$ 2,505
Engineering Manager (FY2014)	$ 41.91	36	hour	$ 1,509
Staff Engineer (FY2014)	$ 33.80	104	hour	$ 3,515
Customer Services Supervisor (FY2014)	$ 26.40	84	hour	$ 2,218
Meter Section Supervisor (FY2014)	$ 32.94	104	hour	$ 3,425
Maintenance Lead (Meters) (FY2014)	$ 26.69	112	hour	$ 2,989
IT Support - Database Administrator (FY2014)	$ 39.56	60	hour	$ 2,374
Distribution Operations Division Manager (FY2014)	$ 38.73	16	hour	$ 620
IMPLEMENTATION				
Assistant General Manager (FY2015)	$ 69.59	80	hour	$ 5,567
Engineering Manager (FY2015)	$ 41.91	48	hour	$ 2,012
Staff Engineer (FY2015)	$ 33.80	240	hour	$ 8,112
Customer Services Supervisor (FY2015)	$ 26.40	335	hour	$ 8,846
Meter Section Supervisor (FY2015)	$ 32.94	620	hour	$ 20,420
Maintenance Lead (Meters) (FY2015)	$ 26.69	620	hour	$ 16,548
IT Support - Database Administrator (FY2015)	$ 39.56	140	hour	$ 5,538
Distribution Operations Division Manager (FY2015)	$ 38.73	20	hour	$ 775
Billing Clerk (FY2015)	$ 19.84	335	hour	$ 6,646
Accounts Receivable Clerk (FY2015)	$ 17.21	115	hour	$ 1,979
Field Customer Service Representative (FY2015)	$ 20.16	620	hour	$ 12,502
Meter Reader (FY2015)	$ 16.59	620	hour	$ 10,286
Meter Reader (FY2015)	$ 16.59	620	hour	$ 10,286
Meter Reader (FY2015)	$ 16.59	620	hour	$ 10,286
Instrument Tech II (FY2015)	$ 29.09	120	hour	$ 3,491
Subtotal				$ 142,450
Fringe Benefits				
PLANNING AND DESIGN				
Assistant General Manager (FY2014)	$ 31.70	36	hour	$ 1,141
Engineering Manager (FY2014)	$ 22.57	36	hour	$ 812
Staff Engineer (FY2014)	$ 19.89	104	hour	$ 2,068
Customer Services Supervisor (FY2014)	$ 17.45	84	hour	$ 1,465
Meter Section Supervisor (FY2014)	$ 20.53	104	hour	$ 2,136
Maintenance Lead (Meters) (FY2014)	$ 18.30	112	hour	$ 2,049
IT Support - Database Administrator (FY2014)	$ 21.79	60	hour	$ 1,307
Distribution Operations Division Manager (FY2014)	$ 22.16	16	hour	$ 355
IMPLEMENTATION				
Assistant General Manager (FY2015)	$ 31.70	80	hour	$ 2,536
Engineering Manager (FY2015)	$ 22.57	48	hour	$ 1,083
Staff Engineer (FY2015)	$ 19.89	240	hour	$ 4,773
Customer Services Supervisor (FY2015)	$ 17.45	335	hour	$ 5,844
Meter Section Supervisor (FY2015)	$ 20.53	620	hour	$ 12,731
Maintenance Lead (Meters) (FY2015)	$ 18.30	620	hour	$ 11,343
IT Support - Database Administrator (FY2015)	$ 21.79	140	hour	$ 3,050

Attachment A - Budget Proposal

Budget Item Description	Computation $/Unit	Quantity	Unit	Total Cost
Distribution Operations Division Manager (FY2015)	$ 22.16	20	hour	$ 443
Billing Clerk (FY2015)	$ 15.28	335	hour	$ 5,118
Accounts Receivable Clerk (FY2015)	$ 14.41	115	hour	$ 1,657
Field Customer Service Representative (FY2015)	$ 15.72	620	hour	$ 9,749
Meter Reader (FY2015)	$ 14.48	620	hour	$ 8,980
Meter Reader (FY2015)	$ 14.48	620	hour	$ 8,980
Meter Reader (FY2015)	$ 14.48	620	hour	$ 8,980
Instrument Tech II (FY2015)	$ 18.82	120	hour	$ 2,258
Subtotal				$ 98,861
Materials/Supplies				
AMI - Communication Network	$ 215,000	1	EA	$ 215,000
Meters - 3/4"	$ 111	6882	EA	$ 763,902
Meters - 1"	$ 165	1098	EA	$ 180,676
Meters - 1-1/2"	$ 437	220	EA	$ 96,165
Meters - 2"	$ 1,475	210	EA	$ 309,750
Meters - 3"	$ 1,650	100	EA	$ 165,000
Meters - 4"	$ 2,150	40	EA	$ 86,000
Meters - 6"	$ 3,400	30	EA	$ 102,000
Meters - 8"	$ 3,900	20	EA	$ 78,000
Meter Interface Unit (MIU)	$ 118	8600	EA	$ 1,012,920
Billing System Software	$ 50,000	1	EA	$ 50,000
Subtotal				$ 3,059,413
Contractual/Construction				
ENGINEER				
Engineering Contract				
CH2M HILL Project Manager	$ 240.00	375	hour	$ 90,000
CH2M HILL Senior Engineer	$ 200.00	300	hour	$ 60,000
CH2M HILL Project Engineer	$ 125.00	300	hour	$ 37,500
CH2M HILL Editor	$ 95.00	75	hour	$ 7,125
Travel Expenses	$ 20,000	1	LS	$ 20,000
Subtotal				$ 214,625
Environmental and Regulatory Compliance				
Reclamation Cost Share	$ 150.00	140	hour	$ 21,000
Recipient Cost Share - Compliance Documents	$ 125.00	120	hour	$ 15,000
Recipient Cost Share - Mitigation Measures	$ 100.00	40	hour	$ 4,000
Subtotal				$ 40,000
Other				
Reporting (6 Reports @ 6 hr/report)	$ 125.00	36	hour	$ 4,500
Subtotal				$ 4,500
Total Direct Costs				**$ 3,559,849**
Indirect Costs - __%				0%
Total Project Costs				**$ 3,559,849**

ATTACHMENT C – SUPPLEMENTAL DOCUMENT

KEARNS
IMPROVEMENT
DISTRICT
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AND
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BOARD OF TRUSTEES
Rodney W. Bushman
Gregory R. Christensen
Kelly L. Record
GENERAL MANAGER
Pamela R. Gill

EPA WaterSense PARTNER

January 22, 2014

Bureau of Reclamation
Acquisition Operations Branch
ATTN: Ms. Michelle Maher
Mail Code: 84-27810
P.O. Box 25007
Denver, CO 80225

Dear Ms. Maher,

On behalf of Kearns Improvement District (KID), I encourage you to support Jordan Valley Water Conservancy District's (Jordan Valley) WaterSMART Grant for FY 2014.

KID is a water and sewer district that serves over 13,500 connections and approximately 50,000 people in unincorporated Salt Lake County and portions of West Jordan City, West Valley City, and Taylorsville City. We purchase approximately 90% of our potable water from Jordan Valley, with the remaining 10% coming from groundwater sources.

KID has participated in a number of water conservation programs with Jordan Valley and actively participates in its member agency water conservation grant program. KID has partnered with Jordan Valley for high efficiency toilet and showerhead vouchers and for our Conservation Garden development. Jordan Valley has provided KID $171,523.20 in matching grants for conservation programs. This has helped KID reduce its average per capita water use by 23% from 2000 to 2013.

We understand that Jordan Valley plans to install Advanced Metering Infrastructure (AMI) in its retail service area, which will include a detailed web portal for its customers. The web portal, in addition to improved billing information and annual water use reports, will provide effective water use feedback and water savings tips utilizing social norming techniques.

We support this project because it is the first large-scale AMI project in Utah that will incorporate a detailed customer portal to help water users understand how much water they are using; and provide customized suggestions on how to reduce their water use including how much money that could be saved by doing so. In addition, Jordan Valley has plans to assist its member agencies, with grants, "lessons learned" and demos, in adopting their own AMI systems with detailed customer portals. This will help Jordan Valley, and all its member agencies, attain its goal of reducing per capita water use 25% by 2025.

P.O. Box 18608, Kearns, UT 84118
5350 West 5400 South www.kearnsid.org
Phone 801-968-1011 • Toll Free 1-800-874-1579 • FAX 801-968-1023

I urge you to support Jordan Valley's application for the WaterSMART Grant to further advance water conservation in the Salt Lake Valley.

Sincerely,

Pamela Gill

General Manager

SOUTH JORDAN
UTAH

PH: 801.254.3742 EMAIL: info@sjc.utah.gov FAX: 801.254.3393

January 21, 2014

Bureau of Reclamation
Acquisition Operations Branch
ATTN: Ms. Michelle Maher
Mail Code: 84-27810
P.O. Box 25007
Denver, CO 80225

Dear Ms. Maher,

On behalf of South Jordan City, I encourage you to support Jordan Valley Water Conservancy District's (Jordan Valley) WaterSMART Grant for FY 2014.

South Jordan City is a municipality in Salt Lake County, Utah, that serves over 15,000 connections and over 56,132 residents. We purchase 100% of our potable water from Jordan Valley.

South Jordan has participated in a number of water conservation programs with Jordan Valley, and actively participates in its member agency water conservation grant program. South Jordan has partnered with Jordan Valley for irrigation controller rebates, irrigation controller upgrades in city parks, toilet rebates, waterwise plant rebates, and indoor water saving devices for residents. Jordan Valley has provided South Jordan $99,989.96 in matching grants for conservation programs. This has helped South Jordan reduce its average per capita water use by 24% from 2000 to 2011.

We understand that Jordan Valley plans to install Advanced Metering Infrastructure (AMI) in its retail service area, which will include a detailed web portal for its customers. The web portal, in addition to improved billing information and annual water use reports, will provide effective water use feedback and water savings tips utilizing social norming techniques.

We support this project because it is the first large-scale AMI project in Utah that will incorporate a detailed customer portal to help water users understand how much water they are using; and provide customized suggestions on how to reduce their water use including how much money that could be saved by doing so. In addition, Jordan Valley has plans to assist its member agencies, with grants, "lessons learned" and demos, in adopting their own AMI systems with detailed customer portals. This will help Jordan Valley, and all its member agencies, attain its goal of reducing per capita water use 25% by 2025.

I urge you to support Jordan Valley's application for the WaterSMART Grant to further advance water conservation in the Salt Lake Valley.

Sincerely,

Gary Whatcott
Interim City Manager
South Jordan City