Residential Water Meter

Replacement & Upgrade Project

WaterSMART Small-Scale Water Efficiency

Grant Application NOFO# R24AS00059

for

Jensen Water Improvement District
PO Box 94
Jensen, UT 84035

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Executive Summary

July 9, 2024

Jensen Water Improvement District (JWID)

Jensen, Uintah County, Utah

The proposed project includes the replacement of aged, inaccurate water meters with new mobile-read high efficiency meters. The meters currently in place are Sensus SRII water displacement meters that have been in use for up to 20 years. Funds from the WaterSMART grant will be used to purchase new Ultrasonic Neptune mobile read meters, which will be installed by District Personnel. As the new meters are installed, the meter efficiency will immediately increase, in turn accounting for water that has previously been lost. The goal of the water District is to decrease water losses from 31% (36MG) in 2023, to less than 21% (24 MG) after meter installation. The prioritization of meter replacement will be to replace meters with the highest total reading first, followed progressively by lower total reading.

The project will take approximately 12 working months to complete starting in April of 2025 and ending in October of 2025 when temperatures approach freezing, beginning again in April 2026 and ending in August 2026 as weather permits.

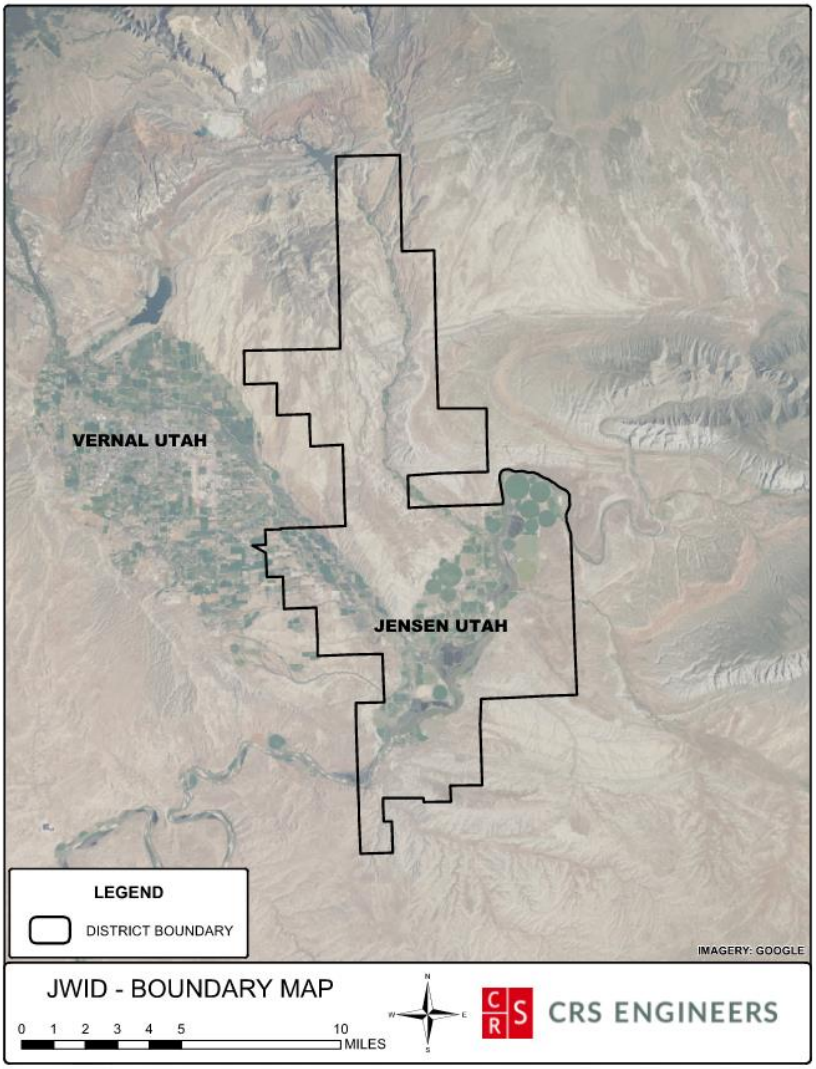
The proposed project is not located on a Federal Facility.

Background Data

Water is supplied to the district through Ashley Valley Water and Sewer Improvement District (AVW&SID). The Jensen Water Improvement District (JWID) annually purchases an average of 115 MG of treated culinary water from AVW&SID. The water is managed by JWID to serve Residential, Commercial, Industrial and Institutional customers within the District boundary. JWID owns water rights in Red Fleet Reservoir, Green River and some smaller surface waters. Water is treated through the AVW&SID treatment plant at the mouth of Ashley Gorge. Red Fleet water is treated at the Central Utah Project Ashley Water Treatment Plant near Vernal.

Jensen WID serves 573 active connections. In the past they have served as many as 629. The current Master Plan projects that Jensen will serve 638 connections by the year 2038. Jensen owns enough water shares to serve the projected population over the next 20 years. The water delivery system consists of 87 miles of PVC pipe. The water system is regulated by the State of Utah

Department of Environmental Quality, Division of Drinking Water rules. Jensen owns 3 concrete storage tanks, totaling a storage capacity of 1,500,000 gallons.



Project Location

The project is in Eastern Uintah County near the Colorado state line, approximately 10 miles East of Vernal. The meters will be replaced throughout the district boundaries, but the central portion of the district is located at Latitude 40 22'10" N and Longitude 109 21' 53"W.

Technical Project Description and Milestones

Jensen Water has been working over the past two years to reduce the amount of water losses in the system through regular maintenance. Several system components such as combination air/vacuum valves, and gate valves have been replaced. A few main line leaks have been discovered and replaced as well. Over the past six years, JWID has only been able to account for 69% (79.3 MG) of the water that it has purchased. Given the age and totals of the meters in the system, it has been determined that meter replacement will help to account for as much as 10% (11.5 MG) of the water loss that is currently being experienced. Accounting for the water loss will allow the district revenue to be more accurately measured.

The project will consist of the following steps:

1. Procurement of the new Ultrasonic Neptune meters. JWID will be purchasing these meters to have them available before April 2025.
2. Reviewing total passed flow in each residential meter within the system.
3. Categorizing the priority of residential meter replacement with highest replacement priority given to meters passing 3 million gallons or more, 2nd priority to meters passing 2 million gallons to 3 million gallons, and 3rd priority to meters passing less than 2 million gallons.
4. The labor for the meter replacement project will be provided by employees of Jensen Water and the meter supplier. The old meter will be removed and replaced with ultrasonic mobile read meters.

Environmental compliance will be achieved by consulting with the local office archaeologist and by removing the old displacement meters with mechanical moving parts, evaluating pipe connection components and replacing any harmful or damaged materials. Water samples will be collected and tested for harmful components in the water throughout the project. These measures will ensure that the public health is not placed in danger.

Permitting will be managed by the owner. In some cases, excavation may need to occur, at which point Uintah County or the Utah Department of Transportation will be notified and the proper permits will be issued.

Final design will be as simple as identification of the meters to be replaced. No further design work will need to be accomplished prior to the project proceeding.

Construction will be accomplished by Jensen Water employees and the meter supplier who are trained and certified by the State of Utah to replace meters and perform system maintenance. In the event of excavation or other non-maintenance work, Jensen WID will sub-contract those portions of the project to a contractor licensed in the State of Utah who is insured and regularly engaged in the type of work required.

Non-Federal funding will be provided by Jensen Water Improvement District directly. The district has $96,500.00 cash available in the 2024 budget to purchase meters. Another $42,013.00 will be contributed to the project in kind through labor of JWID employees to replace the meters. This funding, with a total of $138,513.00, is immediately available for project use.

Evaluation Criteria

E1.1. Evaluation Criterion A – Project Benefits

There are several benefits to the meter replacement and upgrade project. First, the new meters will help to give more accurate readings. The old meters currently installed are the Sensus SRII water displacement meters that are nearing 20 years old. After 10-15 years, the accuracy of the meter drops because of the wear on the moving parts of the displacement meter and may not be registering the correct water usage that passes through. Due to the age of the meters, they are due for an updated, modern meter with a longer lifespan and updated technology.

Second, the old meters are also used on a walk-by system where JWID employees have to go and manually touch each meter lid with a reading wand. If dirt, rocks or snow accumulate and cover up the lid, then it has to be uncovered in order for the wand to get a read on the meter. With heavy snowfall and cold temperatures in the winter, it may go 1-3 months without the meter being able to be read. Also, once snow has built up to 3-5", then it is left alone so that it can act as an insulator to the meters so they are not as exposed to the freezing elements.

JWID annually purchases 115 MG and saw up to 36 MG (31%) of this in water loss in 2023. The water loss is a combination of inaccurate meters due to age, leaks and flushing throughout the system and is determined by the amount of water that JWID purchased versus what it sold. The meters also help JWID to pinpoint and help to identify leaks that are happening in the system that need to be repaired.

With the installation of new Neptune Ultrasonic Mach 10 meters, these problems will be more readily addressed. The new meters will be more accurate in that they have no moving parts, ensuring continued accuracy and performance during the 20 year meter life. They will also have the technology to collect data in real time and will transmit a radio signal to a mobile receiver, making effective use of the time taken to read meters. They can also accurately capture data on extremely low flow rates which ensure precise measurement of water. Finally, the new meters are corrosion-resistant, lead free and have a high copper alloy main casing which adds to its long term performance.

With the installation of these ultrasonic meters our goal is for our water loss to save 11.5 MG of water yearly, decreasing the overall to 24 MG (21%) water loss.

The project will affect only the local water system. The supply sub-basins, and basin will not be affected in any manner.

Accurate data will be available for public record which may be shared among the water districts in the region. This will aid the supplying districts in planning for future supplies to Jensen Water.

E1.2. Evaluation Criterion B – Planning Efforts Supporting the Project

In 2019 the district updated their master plan in cooperation with the Utah Rural Water Association. Within the plan the meters were identified as a priority to eliminate losses in the district. Replacing meters will help to account for water loss.

This project has become a top priority because the District is currently paying for water that is not entirely measured at the consumer's location. Accounting for the water improves the revenue that the district can bring in and balances the water intake and delivery.

Jensen water anticipates that when purchased water is accounted for, more revenue will be available to put towards maintenance, system improvements, and other water system projects.

E1.3 Evaluation Criterion C – Project Implementation

The project will be implemented as follows:

1. No additional engineering work is required for the project since it involves merely replacing the old Sensus meters with new Neptune meters.
2. Review of project by local office archaeologist to meet environmental and cultural resource compliance with Bureau of Reclamation.
3. Procurement of Ultrasonic Neptune meters will take 3 months to complete and be secured for installment before April 2025.
4. Review meter usage data to determine which meters have seen the most use.
5. Begin meter replacement of the residential meters with the highest use first.
6. It is anticipated that 3 meters per day may be replaced by the employees of Jensen Water as they work the replacements into their daily schedule of other tasks. At this rate, it will take between 10 and 12 months from start to finish. Jensen is in a climate that is very cold in the winter. No meters will be installed between the months of November through March. This project will therefore take all of 1 year and part of the next. The meter supplier will also help on installation of the new meters.
7. Permitting will only be required if adjustments to the existing meter barrels needs to occur within the right of way of Uintah County roads or Utah DOT roads. Jensen Water will obtain any permits necessary before excavating within those right of way locations.

8. No design work for the meter replacement project will be required. The project consists only of performing tasks that occur during general maintenance operations.

Date	Task Description
Fall-Winter 2024	Archaeologist to review project for environmental and cultural compliance and complete forms
Winter 2024	Contact company to procure meters. (Pre-purchase and put on shelf)
Winter 2024 and 2025	Review meter usage data
April 2025-October 2025	Meter replacement (approx. 3 daily)
November 2025-March 2026	Replacement of meters paused due to cold weather
April 2026-October 2026	Meter replacement (approx. 3 daily)

E1.4 Evaluation Criterion D – Nexus to Reclamation

The Jensen Water District is a local entity responsible for water management in its specific area, typically overseeing water distribution, supply, and conservation efforts. As a part of the broader Colorado River system, it plays a role in the larger coalition of stakeholders and entities that manage and utilize the water resources of the Colorado River.

The Colorado River Basin is managed by a complex network of local, state, and federal agencies, as well as various stakeholders, including agricultural, municipal, and industrial users. The Colorado River Basin includes seven U.S. states (Colorado, Wyoming, Utah, New Mexico, Nevada, Arizona, and California) and Mexico, and it is governed by a series of agreements known as the "Law of the River."

Entities like the Jensen Water District are typically involved in the following ways:

1. **Water Allocation and Rights:** Local water districts like Jensen have specific water rights and allocations that are part of the overall management and apportionment of the Colorado River's resources.
2. **Water Conservation and Management:** The district implements conservation measures and management practices to ensure sustainable use of the water resources, aligning with regional and basin-wide strategies.
3. **Collaborative Efforts:** The Jensen Water District collaborates with other water districts, state agencies, and federal entities to address issues such as drought management, water quality, and ecosystem protection.

4. **Infrastructure and Maintenance:** The district maintains and operates infrastructure such as reservoirs, canals, and treatment plants, which are integral to the efficient distribution and use of water from the Colorado River.
5. **Public Engagement and Education:** Local water districts often engage with the community to promote water conservation and inform the public about water issues and policies.

By participating in the Colorado River coalition, the Jensen Water District contributes to the collective efforts to manage the river's resources sustainably, balancing the needs of various users while protecting the river's ecological health.

The proposed meter replacement project as stated is meant to replace and upgrade the existing infrastructure so that new meters will be in use to help JWID to manage the water usage for their district.

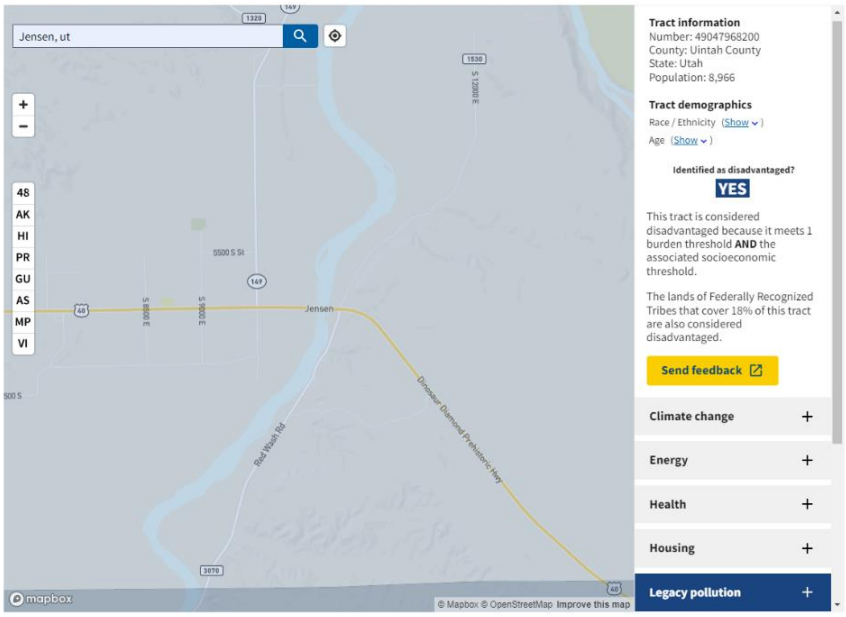
E1.5 Evaluation Criterion E – Department of the Interior Priorities

According to the screening tool for Climate and Economic Justice, Jensen is considered disadvantaged because it meets 1 burden threshold and the associated socioeconomic threshold.

Jensen, Utah, experiences a variety of weather patterns throughout the year, with notable differences in rainfall, snow, and drought likelihoods.

Droughts

Jensen, like much of Utah, can experience drought conditions, particularly during the summer months. The region's semi-arid climate means it generally receives low annual precipitation, making it susceptible to droughts, especially during periods of prolonged dry weather.



Rain

The wettest month in Jensen is April, with an average of 0.71 inches of precipitation over 10.8 days. However, overall, Jensen has relatively low rainfall throughout the year, with November being the driest month, averaging only 0.31 inches of rain. Jensen also has a projected flood risk at the 50th percentile with risk to properties from projected floods, rain and storm surges.

Snow

Snow is a significant part of Jensen's winter climate, with December being the snowiest month, accumulating around 4.29 inches over 8.5 days. Snowfall is generally absent from June through September, aligning with the warmer summer temperatures.

Temperature and Humidity

Summers in Jensen are warm, with July being the hottest month, reaching average highs of around 85.6°F. Winters are cold, with January seeing average lows around 12.7°F. Humidity levels are relatively low, with June being the least humid month at around 30%.

These weather patterns highlight the variability and seasonal changes in Jensen, making it important for residents and visitors to be prepared for both dry conditions and winter snowfall.

Scientific methods have been used in determining the need for the meter replacement project. The meters that are currently being used, lose accuracy and wear out over a life span of approximately 10 years. The new meters have a have a battery life (used in sending radio signals) of 20 years.

The new and upgraded meters will improve the water distribution system throughout Jensen. Furthermore, by improving the water efficiency in the Jensen District, the water resources of Ashley Spring and Red Fleet Reservoir are conserved.

Funding Plan and Letters of Commitment

Non-Federal Funding Plan

Jensen Water Improvement District will obtain the 50% required non-federal funding through two separate means.

1. Jensen WID has available $96,500.00 from their 2024 Fiscal Year Budget allocated to the Meter Project.
2. Jensen WID will provide the labor necessary to replace meters. The value of the labor is calculated using direct cost per time necessary to cover wages, taxes, and insurance for the two employees currently working for the District. Jensen Water also will provide the equipment necessary to complete the project. The value of the labor and equipment is $42,013.00.

Jensen WID will have this total project budget of $138,513.00 available for project use.

Budget Proposal

The estimated project cost is as follows:

Total Project Cost Table	
Source	**Amount**
Cost to be reimbursed with requested WaterSMART Grant	$100,000.00
Cost to be paid by Jensen Water Improvement District	$138,513.00
Total Project Cost	**$238,513.00**

Budget Proposal			
Item	Quantity	Unit Price	Total
Salaries & Wages (In-Kind)			
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
		Salaries & Wages Subtotal	**$21,930.00**
Fringe Benefits (In-Kind)			
Workers Compensation	[redacted]	[redacted]	[redacted]
Life Insurance	[redacted]	[redacted]	[redacted]
Medical Insurance	[redacted]	[redacted]	[redacted]
		Fringe Benefits Subtotal	**$5,803.00**
Equipment (In-Kind)			
Pickup Truck with Tools	408 hrs	$35.00/hr	$14,280.00
		Equipment Subtotal	**$14,280.00**
		In-Kind Subtotal	**$42,013.00**

Supplies and Materials			
¾" Neptune Mach 10 Ultrasonic Meter	500	$376	$188,000.00
MRX 920 Mobile Radio Reciever	1	$8,500	$8,500.00
		Supplies and Materials Subtotal	**$196,500.00**
		Totals	**$238,513.00**

Budget Narrative

The budget components necessary to replace and upgrade the meters or Modules (on existing new meters), is detailed in the budget proposal above. Jensen Water Improvement District anticipates that if they receive federal funding from WaterSMART in the amount of $100,000.00, they will be able to provide the remaining funds from their savings accounts to complete this project. Jensen will also be providing labor and equipment as shown above in the estimated project cost.

Salaries and Wages

Travis Ruppe, the project maintenance/operator receives a wage of $25.50 per hour. We estimate that the project will take 408 hours of his time, totaling $10,404.00.

Trudy Wheeler, the Assistant operator, receives a wage of $28.25 per hour. Also estimated at 408 hours of her time, her wage will total $11,526.00.

The labor rates included in this budget proposal represent the actual labor rates of the identified personnel.

Fringe Benefits

The fringe benefits are calculated based on the percentage of hours in a year that each employee will utilize on this specific project.

Equipment Usage

The applicant intends to use their own equipment for the purposes of this project. The proposed usage rates for all the tools and equipment supplied falls within the Construction Equipment Ownership and Operating Expense Schedule (EP 1110-1-8) for Region 7.

Materials and Supplies

Supplies will be 500 new ¾" Neptune Ultrasonic Meters and a MRX 920 Mobile Radio Receiver to collect data from the radio-read system.

Environmental and cultural resources compliance

Before the Residential Meter Replacement and Upgrade Project occurs, an archaeologist will be sought out to ensure that compliance will be reached in regards to environmental and cultural resources of the area. Involving an archaeologist in the approval process for the project is necessary to ensure compliance with federal, state, and local regulations regarding cultural and historical resources. Here are some key reasons why an archaeologist's assessment is important:

1. Cultural Resource Protection: Archaeologists are trained to identify and assess cultural resources, such as historical artifacts, archaeological sites, and features of cultural significance. Their expertise helps ensure that these resources are protected during the project's planning and implementation.
2. Legal Compliance: Many small-scale WaterSMART projects, especially those funded by federal or state grants, must comply with regulations such as the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA). These regulations require that potential impacts on cultural and historical resources be assessed and mitigated.
3. Permitting Requirements: Obtaining necessary permits for water-related projects often involves demonstrating that cultural resources have been considered and that appropriate measures have been taken to protect them. An archaeologist's approval can be a critical component of the permitting process.
4. Environmental Impact Assessments: Projects that involve ground disturbance, such as construction or excavation, can potentially affect archaeological sites. An archaeologist can conduct surveys and assessments to identify any sites that might be impacted and recommend measures to avoid or mitigate damage.
5. Stakeholder Engagement: Engaging an archaeologist can help build trust and cooperation with local communities, including Indigenous groups and historical societies, who may have a vested interest in the preservation of cultural resources.
6. Risk Management: Identifying and addressing potential archaeological issues early in the project planning process can help avoid delays, legal challenges, and additional costs associated with discovering cultural resources after a project has commenced.

In summary, an archaeologist's involvement ensures that the project is conducted responsibly, preserving important cultural heritage while complying with relevant laws and regulations.

Currently, in our opinion the Residential Meter Replacement and Upgrade Project may have a minor impact upon the surrounding environment as meter boxes are exposed and the meters replaced. In most cases, the meter replacement will require only hand tools, such as a shovel. If a meter box is not functioning or placed in compliance with Jensen Water specifications, a mechanical digger, such as a backhoe may be used to correct meter box placement.

Minimal disturbance of the earth, vegetation, and habitat may take place. Dust will be controlled if needed using water sprinkling devices. Native vegetation will be allowed to return after the meter is replaced.

We are not aware of any listed threatened or endangered species or critical habitat in the project area. The habitat or endangered species will not be affected by the activities associated with this project.

There are wetlands and Waters of the United States within the project boundaries. Ashley Creek, Brush Creek, the Green River and wetlands associated with those waterways are within the project boundaries. These waters and wetlands will not be affected by the replacement of water meters throughout the system.

The Jensen Water Improvement District was formed in 1970. Since that time periodic upgrades to the water delivery and storage systems have been completed. The most recent major project was completed in 2013 when water pipe and fire hydrants were upgraded and added on Brush Creek Road. Irrigation systems within the Jensen Water District Boundary will not be affected by this meter project.

There are some historical sites within the Jensen District Boundary. We are aware of a cottonwood tree that is on the historical registry near a church along Highway 40 in Jensen. There is a monument at the bridge crossing the Green River. There is a School House Bell and a monument to the Dominguez expedition of 1776 located in the Community Park in Jensen. There is an additional Dominguez monument at the boundary between the District and Dinosaur National Monument on Highway 141. No buildings, trees, monuments

or other cultural resources will be disturbed by this meter replacement and upgrade project.

We are not aware of any archeological sites within the District boundaries. The meter project will not have any disproportionately high or adverse effects on low income or minority populations. The only impact will be positive as more accurate meter readings will occur, and improved water efficiency in delivery will be seen.

The project will not disturb any tribal lands or sacred sites that we are aware of. Due to the minimal disturbance of soils and habitats, no spread of noxious weeds or invasive species is anticipated.

Required Permits for Approval

It is not anticipated that permitting will be required for most of the meter replacement project. This activity is considered as maintenance for the purposes of permitting. There may be a few cases where using a mechanical digger such as a backhoe may be used to replace a meter. In these few situations, encroachment permits from the Utah Department of Transportation (UDOT) or Uintah County road department, will need to be obtained by the contractor hired to perform the dig.

Official Resolutions

The following official resolutions were adopted by the Jensen Water Improvement District Board.

Resolution 1:

Randan Vincent is the Chairman of the Jensen Water Improvement District Board, and as such has the legal authority to enter into an agreement.

Resolution 2:

The Jensen Water Improvement District Board has reviewed this application and supports this application for grant.

Resolution 3:

The Jensen Water Improvement District has the capability to provide the funding and/or in-kind contributions specified in the funding plan.

Resolution 4:

Jensen Water Improvement District will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

Unique Entity Identifier and System for Award Management

Jensen Water Improvement District is:

1. Jensen Water Improvement District is registered in the System for Award Management (SAM)
2. Jensen Water's entity identifier is included in the application in SF-424 8.c
3. Jensen Water will continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency.