

WaterSMART:

Water and Energy Efficiency Grant for FY2015

**Installation of SatLink2 on Flow Measurement
Devices**

Fallon, Nevada

**Truckee-Carson Irrigation District
P.O. Box 1356
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PART I. TECHNICAL PROPOSAL AND EVALUATION CRITERIA

Executive Summary:

January 14, 2015

Truckee-Carson Irrigation District
P. O. Box 1356
Fallon, Churchill, Nevada

The project includes components that accomplish the goals established in Tasks A, B and C.

Task A – Water Conservation of the project is accomplished with the installation of 50 SatLink2 devices that allows remote monitoring of irrigation water deliveries. This project will improve operational efficiencies by reducing spills or over delivery. Improved efficiency ultimately reduces releases of stored water in the upstream reservoir, Lake Lahontan. The fifty meters selected for the project measures deliveries for approximately 312 water righted parcels in the Newlands Project with a total of 17,340 irrigated acres.

Task A – Improved Water Management will involve the installation of fifty SatLink2 measurement devices. This will allow TCID to better manage 100% of the approximately 57,743 acre feet that flows across these measuring devices currently.

Task B – Energy-Water Nexus of the project is twofold with the energy that operates the measuring devices being solar powered. Also with the Sat Link2 that allows for better water management through remote data downloads, the use of fossil fuels will be reduced as a person will not have to drive to these fifty measuring devices to download the measurement data. This is currently being done about once every two weeks or following a water delivery using each meter.

Task C – Benefits to Endangered Species will be realized through reduced releases in Lahontan which allows for more storage of Carson River water and less water will be required from the Truckee River. The Truckee River water flows into Pyramid Lake and benefits the needs for habitat and spawning for the federally listed threatened and endangered species of fish, Lahontan Cut-throat Trout and Cui-Uui, respectively.

Summary:

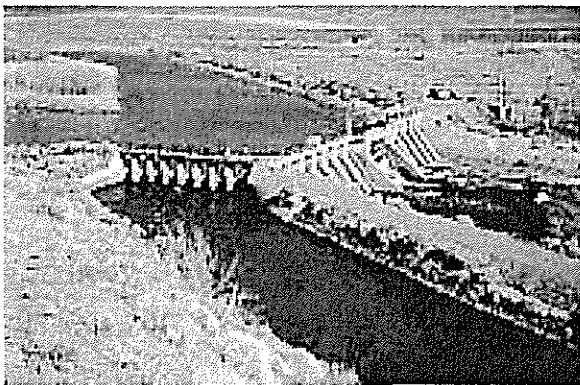
This project satisfies the goals of Task A and Task B which indirectly effects Task C. Under Task A - Water Conservation, with Sat Link2, the District will be able to monitor the flow of water for each water delivery that uses one of the fifty meters to be fitted with the SatLink2. It will provide water conservation and efficient water management by reducing spills or over-deliveries. The District will meet the goals and objectives of Task B - Energy-Water Nexus, as each measurement device will employ the use of renewable energy with solar-electric panels and eliminate the requirement to manually download the data from each of the fifty measurement devices. The objectives of Task C – Benefits to Endangered Species, will be indirectly met because all water conserved through better management and increased efficiency is less water that will be needed from the source of water. That source being the Truckee River which feeds Pyramid Lake. Any water that is not needed by the Newlands Project is water left in the river to improve the spawning habitat of the Truckee River below Derby Dam. Pyramid Lake is home to two endangered fish species, both use the Truckee River to spawn.

This project is expected to start on October 2015 and be completed by December 2016. All of the facilities located in the Newlands Project are operated and maintained by the Truckee-Carson Irrigation District under contract with the Bureau of Reclamation.

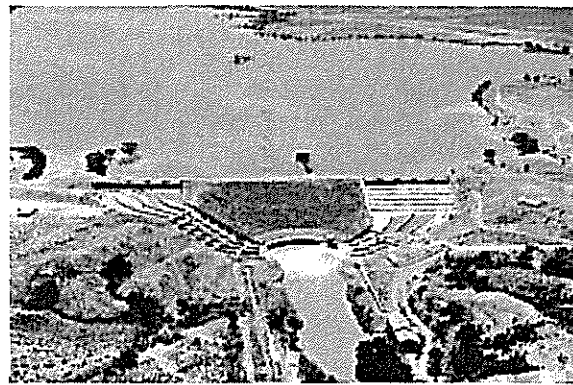
Background Data:

The map of the area of all measurement devices are located in **Appendix A**. All the devices selected for the project are located in Churchill County, Nevada, with the distance ranging from 15 miles to a quarter of a mile from the District's office.

The District encompasses approximately 120,000 acres of which 73,686 acres are water-righted. The District's average annual water supply is 300,000 acre-feet for approximately 59,868 irrigated acres in both the Carson Division and the Truckee Division. The water stored in Lahontan Reservoir is fed by the Carson River and the Truckee Canal via Derby Dam on the Truckee River.



Derby Dam



Lahontan Dam

The Carson Division consists of the water rights supported by the Lahontan Reservoir. The Truckee Division is supported entirely by diversions off the Truckee River into the Truckee Canal. This project is within the Carson Division and that Division serves approximately 1800 water users. The total water released from Lahontan for the 2013 water season was 207,900 acre feet of the 289,500 acre feet that was needed to fulfill the water allocations at 100%. However, because of the drought, water allocations were reduced to 75% and deliveries were turned off in September, two months earlier than normal. The projected demand for the 2015 water year for the Carson Division is 200,987 acre feet of water. At the end of December there was only 40,420 acre feet in the reservoir, but there is no snow pack on the Sierras from which the water supply will be replenished. Any economies and/or efficient water management improvements would help in the drought situations that we will face in the future.

The primary use of irrigation water is for crops that support the cattle and dairy industries in the Fallon and Fernley area. Water is primarily used to flood irrigate crops. The major crops are alfalfa and corn with some grain crops. Most crops are harvested to provide food for livestock. The irrigated acres that are not in crops for livestock are in local gardens and farms that grow food crops for the local area. Some of these crops are on organic farms.

The water delivery system for the Project consists of two major diversion dams, and approximately 391 miles of canals, laterals, and sub-laterals, as well as 345 miles of drains, located in the Truckee and Carson Divisions of the Newlands Project as shown on the Project map in Appendix A. The water delivery system provides water through canal and lateral turnouts to an estimated 1,500 farm head gates.

Approximately 20 miles downstream from Reno, water for project purposes is diverted from the Truckee River into the Truckee Canal at Derby Dam. The dam is a concrete gate structure 31 feet high with an embankment wing. It has a hydraulic height of 15 feet and controls diversions of up to 1,500 cfs into the Truckee Canal through nine slide gates, 13 slide gates and one 25-foot hinged drop gate control the flow into the river.

The Truckee Canal extends approximately 32.5 miles from Derby Dam on the Truckee River to Lahontan Dam on the Carson River. The canal has a designed carrying capacity of 1,200 cfs at the head; however, the current operating capacity is approximately 350 cfs. The Truckee Canal serves approximately 2,000 acres of irrigated lands, which serves the Truckee Division, either directly or through laterals and sub-laterals. The Truckee Canal also delivers water to Lahontan Reservoir to supplement the flow of the Carson River and provide more reliable water service to Carson Division lands.

The District has a Water Conservation Plan and Program to install measuring devices throughout the Project, as part of the O&M Contract with the Bureau of Reclamation. The District was to have 75% of the volume of delivered water measured by 2012. The District has been working towards this goal with the assistance of the Irrigation Training and Research Center out of Cal-Poly. In 2009 the ITRC performed a study on the District's measurements devices that were installed and determined that they were well constructed and accurate. However, we had to reduce the amount of takeouts served by some of the measurement devices because the ITRC determined that takeouts more than 6600 feet could not be used to measure water deliveries. This decision put our program behind but we are continuing to install ramps and meters that will measure more than 75% of our water deliveries.

The District currently has installed and maintains 102 water measurement devices in the Carson Division. Those meters are used to measure water deliveries to 637 farms with a total of 117,844 acre feet on 35,387 irrigated acres.

The District currently operates three hydroelectric power plants during the irrigation season. The power produced supplies power to the City of Fallon through NV Energy and Utah Associated Municipal Power Systems (UAMPS). This proposal will employ solar power. Solar power is used on meters in areas that do not have access to shore power. The District's office and shop facilities are on the "net metering" program and were installed in 2011.

The Newlands Project was one of the first reclamation projects in the United States. In 1926 the Truckee-Carson Irrigation District contracted with Reclamation to provide for the operations and maintenance of the Newlands Project. Since that time the cost of the Project has been paid off and the District continues, under contract with Reclamation, to operate and maintain the Newlands Project. The working relationship between Reclamation and the District has been long and continues to this day. We currently have a grant from Reclamation to Upgrade Measuring Devices off the Truckee canal, R11AP20152. This grant was a Water Conservation Field Services Program grant awarded in April of 2011. In October of 2012 the District was awarded a WaterSmart Grant to automate the V Line, R12SF80049.

Technical Project Description:

Installation of SatLink2 on Flow Measurement Devices

There are 130 water meters throughout the District. This project is to install SatLink2 at fifty of the 102 meters in the Carson Division. This will allow the District to monitor water deliveries and flows within an hour of the delivery. Please refer to the District map in **Appendix A** for the locations of 130 meters in the District.

This proposal, to install SatLink2 at fifty meters, will allow the District to manage the water delivered to the 312 farms served by these meters more efficiently and reduce spills, while using renewable energy to power the SatLink2. This makes the flow meter project “self-supporting” as it applies to energy. To provide some detail to this project the plan is to install each water meter box structure according to the following requirements.

- There will not be any requirements to obtain permissions, permits and environmental compliance for the project as a whole or for the individual water meter structures as they are already in place.
- Program each of the SatLink2's with GPS co-ordinates for each of the selected sites.
- Installation of SatLink2 hardware and GOES-YAGI antenna in each of the fifty water meters.
- Connection to the new equipment to the solar panels
- Download or check meter data from the GOES web site.
- Documentation of as-builds, to include photos, electrical schematics, programming, and drawings
- Integration of operation and maintenance into current SOP for meter delivery process training.
- Progress reports completed quarterly.

The installation will be completed quickly. We anticipate that programming and installation will use about two man-hours per meter. Most of the installation can be conducted whether or not there is water in the canal. Therefore it is anticipated that the project could be completed in one year. However, documentation and training to operational personnel may take longer than the installation.

The project will be monitored and managed with the use of project management software, Microsoft Project. This would allow the District to provide regular and timely reporting to meet the requirements of the grant funds as well as Reclamation.

Water Conservation:

This project has a component for water savings although it can only be specifically quantifiable through the component of improved water management so both A.1 (a) and (b) will be addressed.

Quantifiable Water Savings:

The installation of SatLink2 at the water meter will reduce spills or over deliveries and ultimately the amount of water released from Lahontan Reservoir. Last water year, it was calculated that the District had 18,665 acre feet spill over all 102 meters in the Carson Division. This figure was calculated using the amount of water measured over the meter when there were no orders. This calculation can only be done after the water season or long after anything can be done to correct it. The SatLink2 will allow the District to see the meter data once every hour. This is invaluable in helping the District analyze the data in the big picture to determine the efficiency of a specific delivery system and the timing of deliveries on that system that would significantly reduce the loses from spilling. The metered data is currently downloaded after the delivery, most times after several deliveries on the same lateral. A District employee drives to the meter and downloads the data onto a card that is brought back to the office and loaded onto a computer. The time lapse between delivery and download can be as much as a couple of weeks or more. The person that analyzes the data currently is constantly waiting for downloads to come in and then playing catch-up when it all comes in at once. There is no time to manage and analyze the data to fix inefficiencies. There is no way to know when water is being over-delivered and/or spilled until the end of the year. A graph is included that accounts for all the water released from Lahontan reservoir in 2013. Reference **Appendix B**.

With the SatLink2 each delivery could be downloaded within an hour from when a water delivery begins and ends to insure that the water orders are accounted for accurately and quickly. Water management would be more efficient with the ability to apply the delivery to the water user's allocation immediately after delivery. This would also, enable the water user to better manage his water more efficiently. This benefits the water user, the District, and the community because of the drought.

The average annual acre-feet of water supplied by Lahontan Reservoir is 300,000 acre-feet. Last year approximately 205,100 acre feet of water was released from Lahontan. Because of the drought the Carson Division water user's water allocation was reduced to 75% of normal. Therefore, last year's annual numbers will not be used. The average amount of releases from Lahontan in a 100% year is about 253,075 acre feet. Of those releases about 57,744 acre feet are needed to meet the demands for deliveries that use the fifty water meters selected for this project. With a savings of just 49% of the acre feet that was spilled in 2013 over the water meters of 9,146 acre feet, that would leave that much more stored in Lahontan Reservoir and that much less water that would be supplemented from the Truckee River off the Truckee Canal.

This project to install a SatLink2 will provide the above mentioned water savings through better water management. The water savings was determined by comparing the amount of water that flowed over the water meters without any water orders in the system. . **Appendix B** depicts a graph that accounts for all the water for the 2013 Water Season. The ability to download the flows across the meters at any time, via the web, such as during a delivery or whenever there is water flowing over the meter will allow the District to make corrections before the end of the year and closer to the time when the spill occurs.

This water savings can be determined by the creation of the same spreadsheet that was used to provide the support for the water savings stated above.

Improved Water Management:

Improved water management is the ultimate purpose of this project through the installation of SatLink2. The amount of water that was released from Lahontan Reservoir was 205,100 acre feet, of that the total allocation that was allowed for the water users serviced by the fifty selected water meters was approximately 57,744 acre feet. Which is 28% percent of the total water released from Lahontan in the 2013 Water Season, using the formula suggested in the application:

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

$$\frac{57,744 \text{ acre feet}}{205,100 \text{ acre feet}} = 28\%$$

Percentage of Total Supply:

Using the figure calculated in the section above in the Water Conservation section of approximately 9,146 acre feet being reduced in releases as a result of this project, the percentage of conserved water relative to total water supply is 4.5 percent. This number seems insignificant but combined with more efficiently managed water, the use of renewable energy, and the reduction in fossil fuel use, the benefits outweigh the amount of water conserved.

$$9,146/205,100 \text{ acre feet} = 4.5\%$$

Reasonableness of Costs:

The total cost of the project is \$195,538.26 and the amount of acre feet of water better managed is 57,744 acre feet as calculated in section Improved Water Managed. The technology changes rapidly in this computer age, but when you start with the latest technologies, the project should have an expected life of ten or more years. When you consider that the Newlands Project is over 100 years old, ten years may be too conservative. Using the calculation from the application:

$$\frac{\text{Total Project Cost}}{(\text{Acre-Feet Conserved, and Better Managed} \times \text{Improvement Life})}$$

$$\frac{\$195,538.26}{57,744 \times 10} = .34$$

FUNDING SOURCE	FUNDING AMOUNT
Truckee-Carson Irrigation Dist.	\$97,942.26
Reclamation Funding	\$97,596.00
TOTAL PROJECT FUNDING:	\$195,538.26

Energy-Water Nexus:

The District uses a solar panel on the top of each water meter box. The solar panel is connected to a battery located in the box. The solar panel provides 100% of the power to operate the SatLink2. The District has three hydroelectric power plants, two are located at Lahontan Dam and one is on the V Line Canal. The District office is on the net metering system with the use of solar panels. Renewable energy is not new to the District and the use of solar panels will take advantage of the abundant sunshine in the Fallon area and will provide power to the SatLink2 meters for years to come.

The installation of SatLink2 at 50 water meters will provide the ability to monitor and download the data via the GOES Web based network thereby reducing the use of fossil fuels with the use of a truck to drive to each of the 50 meters located far and wide in order to manually download the data each day.

Benefits to Endangered Species:

The Newlands Project relies upon storage in Lahontan Reservoir for irrigation. Lahontan Reservoir is fed by two sources of water, the Carson River and the Truckee River through diversions into the Truckee Canal. Diversions off the Truckee River are managed by the Operating Criteria and Procedures (OCAP) through the Bureau of Reclamation. All demand for irrigation water in the Truckee Division is met through the Truckee Canal. The Truckee Canal diverts water off the Truckee River at Derby Dam and flows to Lahontan Reservoir. The amount of water that is allowed to flow into Lahontan is managed throughout the year and depends upon several things. One is the amount of water that the Carson River provides and the amount of water that is used during an irrigation season or demand. The demand is based upon the irrigated acres and the maximum allowable diversions and is usually 300,000 acre feet per year. Diversions from the Truckee River will not be allowed as long as the reservoir has enough water to meet the demand. The more efficiently the water is managed below the dam the less the reservoir will need water from the Truckee River.

The Truckee River terminates in Pyramid Lake and is the spawning grounds for the Lahontan Cutthroat Trout, a threatened species, and the cui-ui fish, an endangered species. The Pyramid Lake Indian Tribe watch over the water in the Truckee River very closely and will insure that the benefit from any amount of conservation or better water management in the Newlands Project will go to benefit the endangered and threatened species of fish as well as the habitat of their spawning grounds on the Truckee River.

Water Marketing:

The Newlands Project does not have any water marketing elements.

Other Contributions to Water Supply Sustainability:

This project is supported and encouraged by the Lahontan Basin Area office of the Bureau of Reclamation. In accordance with the Better Management Practices (BMP's) cited in the District's 2010 Water Conservation Plan and the Water Measurement Program in the 1997 Operations and Maintenance Contract with Reclamation, installing water measurement devices and remote access are required. The continuous improvement of technology being used in the District can only make it more efficient and accurate, which, in turn, conserves water.

Implementation and Results:

Project Planning:

This project is consistent with the Water Conservation Plan developed by the Truckee-Carson Irrigation District under the direction of the Bureau of Reclamation.

The SCADA systems and automation installed have been developed by the District and are unique to the Newlands Project. The Irrigation Training and Research Center (ITRC) of Cal Poly have provided guidance and support during the District's technological growth and development and the District will continue to use their services.

Readiness to Proceed:

The fifty water meters selected for the SatLink2 installation are located in various locations throughout the Carson Division. Reference **Appendix A**. All necessary plans and designs are complete and we expect no delay for environmental compliance. The Sat Link2 hardware and antenna are plug and play devices that fits entirely on the current water measurement devices.

The project has been divided into two groups of major tasks; Programing-Installation and Documentation-Training. The use of project management software will facilitate the reporting for this project. The reporting requirements will be part of the documentation group, there will be no construction involved in this project.

Programing-Installation Tasks

Develop a chart and progress report in project management software
Program GPS locations into each SatLink2 for each of the fifty selected meter sites
Install the Sat Link2 and antenna in each of the fifty water measurement devices

Documentation-Training Tasks:

Incorporate Hardware and Electrical schematics for the documentation of the water meters
Develop or add to water analyst SOP process and changes to current process.
Quarterly progress reports to BOR for project and grant reporting
Training for Operations personnel that allows them to review and use the water meter data over the Internet.

Performance Measures:

The District employs performance measures currently as a condition of OCAP. The District will monitor the performance and output of the SatLink2. The meters will be able to provide the data from each water meter each hour in 15 minute intervals that allows for immediate update to water delivery records.

The District will be developing and improving the meter data collection process to more accurately record water delivery and use. This process will be able to easily determine water savings and efficiencies in every water season as it happens. It will allow the District to be proactive instead of reactive.

Connection to Reclamation Project Activities:

The Newlands Project was one of Reclamations first projects and was begun in 1906. The

District has since paid off the construction cost of the Project but still is contracted by the Bureau of Reclamation to operate and maintain the project. The Newlands Project's facilities are considered to be the property of the United States through the Department of Interior and the Bureau of Reclamation. The project is located in the Lahontan Basin Area under the Mid-Pacific Region. The Bureau that oversees the District activities, as they are related to the Newlands Project, works out of the Carson City office. The Contracting Officer is the Regional Director located in Sacramento.

The District submits the water delivery records to the District each month. These records are over a month old before they are submitted because of the time delays to download and process the meter data. This project will greatly improve the requirement to submit the delivery records each month.

PART II. PERFORMANCE MEASURE FOR QUANTIFYING POST-PROJECT BENEFITS:

The District will continue to monitor the flows at the water meters as it currently does. The water that flows over the meters will be compared to the orders made by the water users on the meters to correct any spills as soon as possible. The same graph employed in **Appendix B** will be maintained as the project is implemented to compare one year's data with the previous years. The water season ends in the Carson Division in November. Therefore, data for the end of the project will be available the end of November or December of 2016. Timely reports will be made to the local Bureau as the project is progressing.

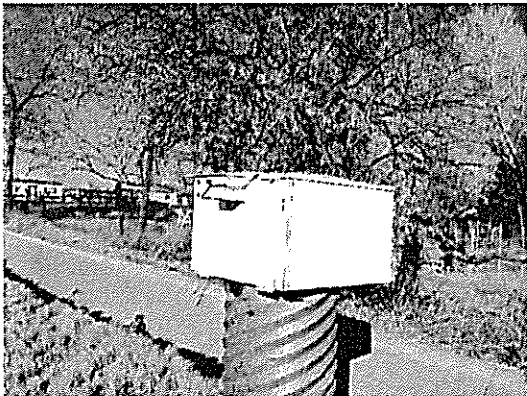
PART III. ENVIRONMENTAL COMPLIANCE:

This project should not impact the environment in a negative way. All work will be conducted within the easements and structures of the current canals, laterals and water meters. The SatLink2 will be installed in the current water measurement devices with no new construction. Before the project will begin Reclamation will be notified and authorization will be obtained. No impact to water, air or animal habitat.

The District is not aware of any species listed or proposed to be listed as a Federal endangered or threatened species, nor any designated Critical Habitat in the project area.

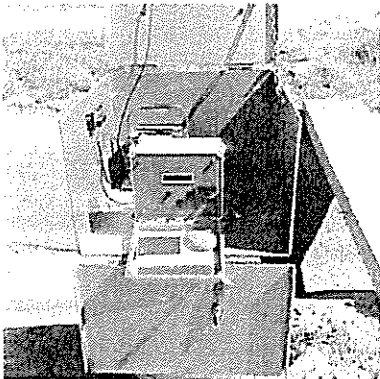
The water delivery system of the Newlands Project began construction in 1906. The Truckee Carson Irrigation District (District) was chartered in 1918 and the first contract with Reclamation was made in 1926.

This project will not modify the features of the water measurement device the SatLink2 will be installed in. The following is the current configuration of the water meters located in the District.



- The water meter located on the L4-1-T9. This meter is located about a quarter mile from the District's office.

This is the configuration of the water meters that will be part of this project.



- The interior of the steel box houses the functional equipment of a water meter.

This is the typical configuration of the interior of the project water meters.

Since the Newlands Project is over 100 years old there are parts that are eligible for listing on the National Register of Historic Places. However, the District has been required to operate and maintain the facilities to provide for the best and efficient use of the water. This does require modernization and the use of available technology whenever possible.

There are no known archeological sites in the proposed project area.

The proposed project will not have a high or disproportionate adverse effect on low income or minority populations.

The proposed project will not limit access to ceremonial use of Indian sacred sites. This project may have an indirect impact on tribal lands in that some of the selected meters are located on the Fallon Paiute Shoshone Tribe's (FPST) reservation. So it could be argued that any water better managed effects the FPST.

The proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

PART IV. REQUIRED PERMITS OR APPROVALS:

The facilities in the Newlands Project are still held in the name of the Federal government through the Bureau of Reclamation. Permits, NEPA and SHPO processes through the BOR will be completed prior to the start of the project. The local area office located in Carson City has been notified and the process will begin upon notification of receiving grant award.

PART V. FUNDING PLAN AND LETTERS OF COMMITMENT:

The non-Reclamation share of the proposed project will be funded entirely by the District through the 10% Conservation portion of O&M fees that are collected via the County assessor office from the water users. In accordance with the O&M Contract with the Bureau of Reclamation 10% of the O&M fees must be set aside for Conservation projects. In accordance with the 2010 Water Conservation Plan this Sat Link2 project is part of the continuing efforts of the District towards water conservation and management and will be the cost-share funding source for the District.

Table 1: Summary of non-Federal and Federal funding sources

FUNDING SOURCE	FUNDING AMOUNT
Truckee-Carson Irrigation Dist.	\$97,942.26
Reclamation Funding	\$97,596.00
TOTAL PROJECT FUNDING:	\$195,538.26

PART VI. OFFICIAL RESOLUTION:

On January 7th of 2015, the Board of Directors of the Truckee Carson Irrigation District will meet and approve the agenda item to support a resolution in support of the WaterSMART Grant application, reference **Appendix C**. It will be signed by the Vice President of the Board of Directors and the signature and official stamp from the Secretary of the Board of Directors. The resolution was adopted and has been added to the application as **Appendix C**.

PART VII. BUDGET PROPOSAL:

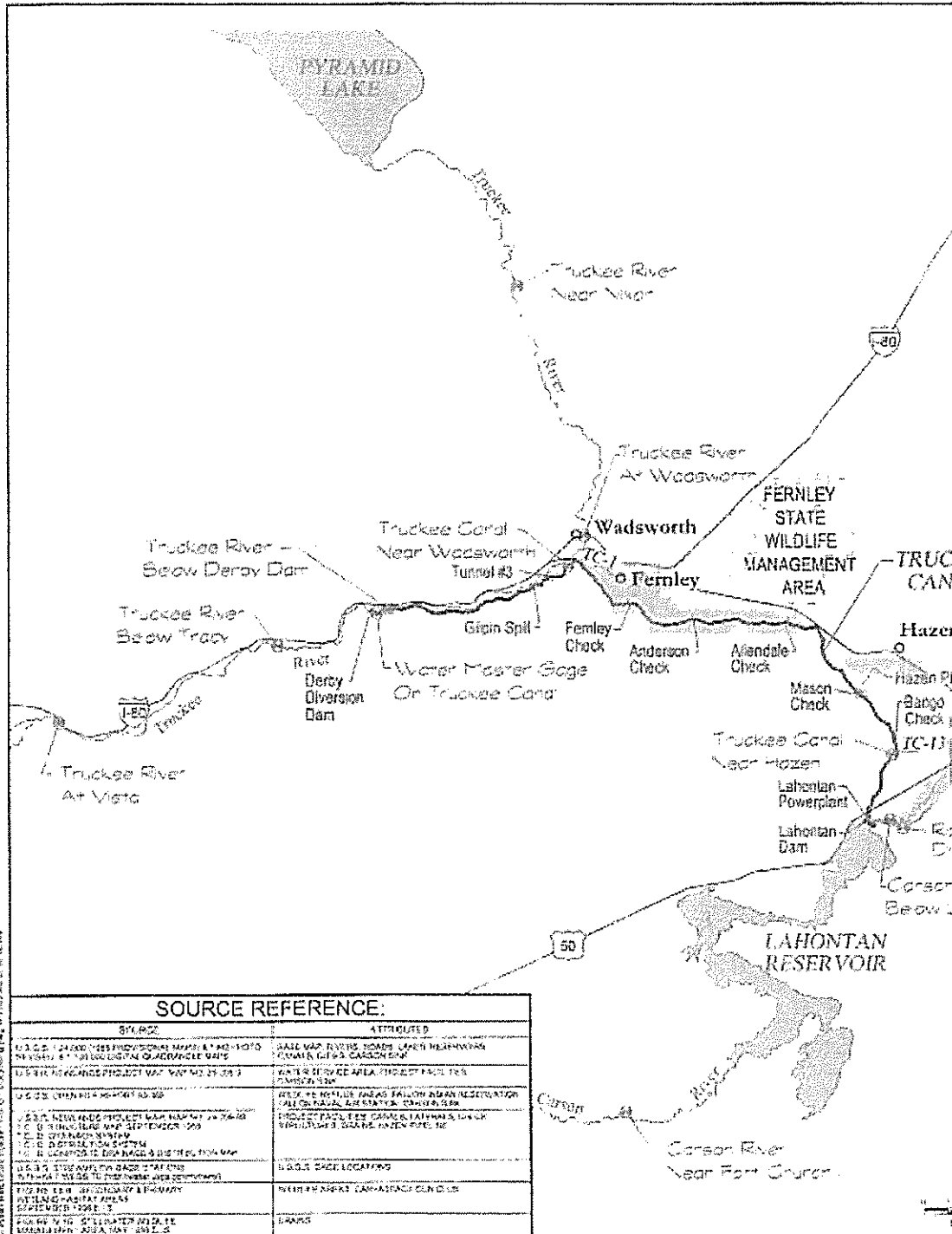
The District will be responsible for 50% of the total cost of the SatLink2 grant.

Table 2: Budget Worksheet

BUDGET ITEM DESCRIPTION	COMPUTATION		RECIPIENT FUNDING	OTHER FUNDING	RECLAMATION FUNDING	TOTAL COST
	\$/Unit and Unit	Quantity				
1. SALARIES AND WAGES -- Position title x hourly wage/salary x est. hours for assisted activity. Describe this information for each position.						
2015-2015						
Information/Data Manager	25.28	120	3,033.60			\$3,033.60
Water Analyst	16.60	120	1,992.00			\$1,992.00
Water Measurement Tech	24.72	120	2,966.40			\$2,966.40
2015-2016						
Information/Data Manager	52,582.00	5%	2,629.10			\$2,629.10
Water Analyst	34,528.00	25%	8,632.00			\$8,632.00
Water Measurement Tech	51,418.00	5%	2,570.90			\$2,570.90
2. FRINGE BENEFITS -- Explain the type of fringe benefits and how are they applied to various categories of personnel.						
2015-2015						
District Labor	47%	\$7,992.00	3,772.22			\$3,772.22
2015-2016						
District Labor	47%	\$13,832.00	6,501.04			\$6,501.04
3. TRAVEL -- dates; location of travel; method of travel x estimated cost; who will travel						
None	0	0.00	0.00			\$0.00
4. EQUIPMENT -- Leased Equipment use rate + hourly wage/salary x est. hours for assisted activity - Describe equipment to be purchased, unit price, and #of units for all equipment to be purchased or leased for assisted activity: Do not list contractor supplied equipment here.						
1 Ton Service Truck	\$19.90	50	995.0			\$995.00
Pick-Up Trucks	\$16.50	240	3,960.0			\$3,960.00
5. SUPPLIES/MATERIALS -- Describe all major types of supplies/materials, unit price, # of units, etc., to be used on this assisted activity.						
Antenna, GOES, Yagi	325.00	50	\$16,250.00			\$16,250.00
Cable Assy, Antenna	95.00	50	\$4,750.00			\$4,750.00
SatLink2-V2	2711.00	36			\$97,596.00	\$97,596.00
SatLink2-V2	2711.00	14	\$37,954.00			\$37,954.00
6. CONTRACTUAL/CONSTRUCTION -- Explain any contracts or sub-Agreements that will be awarded, why needed. Explain contractor qualifications and how the contractor will be selected.						
None	0.00	0			\$0.00	\$0.00
7. ENVIRONMENTAL and REGULATORY COMPLIANCE COSTS -- Reference cost incurred by Reclamation or the applicant in complying with environmental regulations applicable to this Program, which include NEPA, ESA, NHPA etc.						
NEPA		\$1,936.00	1936		0.00	\$1,936.00
8. OTHER -- List any other cost elements necessary for your project; such as extra reporting, or contingencies in a construction contract.						
None	0.00	1			\$0.00	\$0.00
TOTAL DIRECT COSTS--			97,942.26		97,596.00	195,538.26

9. INDIRECT COSTS -- What is the percentage rate%. If you do not have a Federally-approved Indirect Cost Rate Agreement or if unapproved rates are used - Explain Why.						
None						\$0.00
TOTAL PROJECT/ACTIVITY COSTS			\$97,942.26		\$97,596.00	\$195,538.26

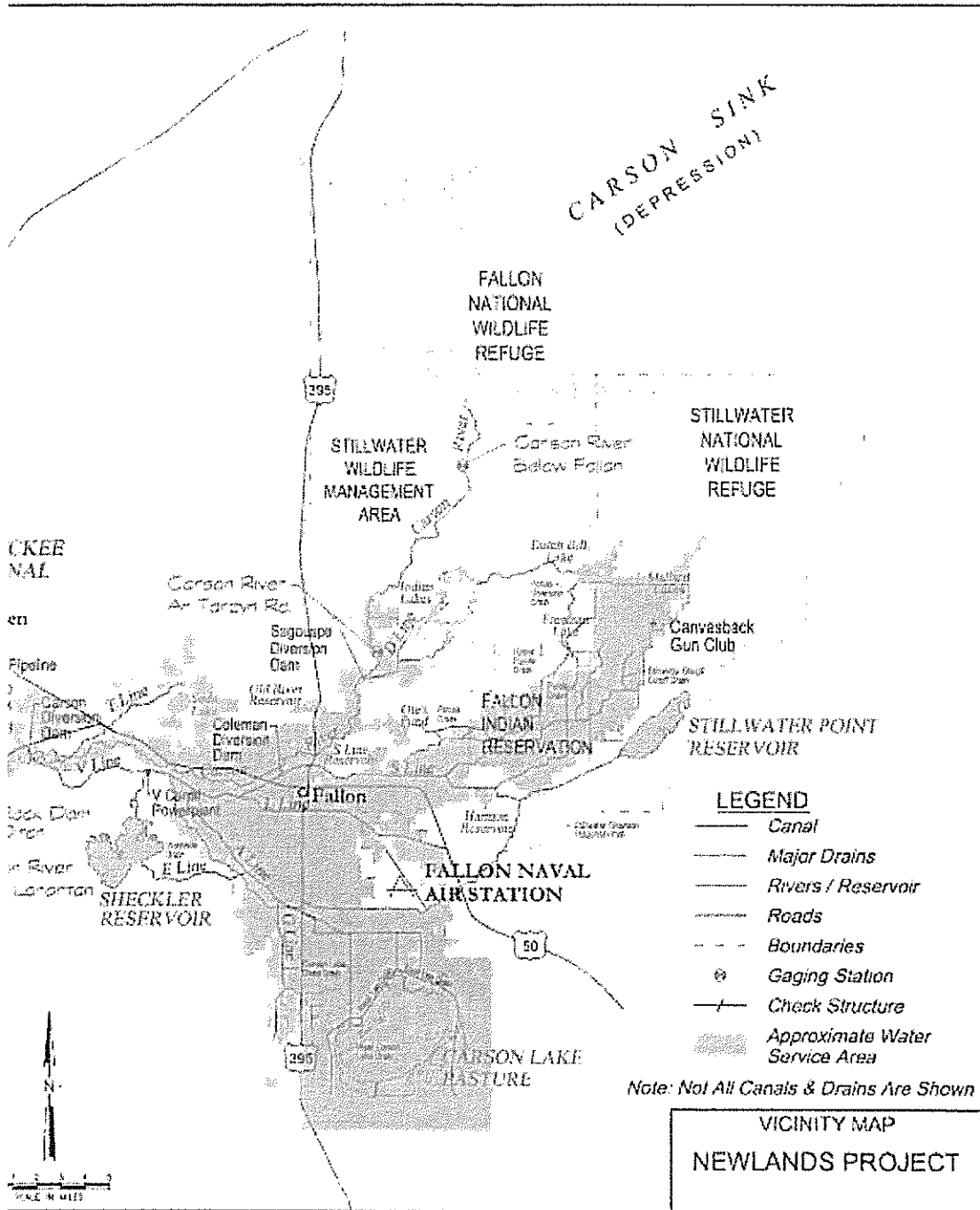
Appendix A – Area Maps



SOURCE REFERENCE:

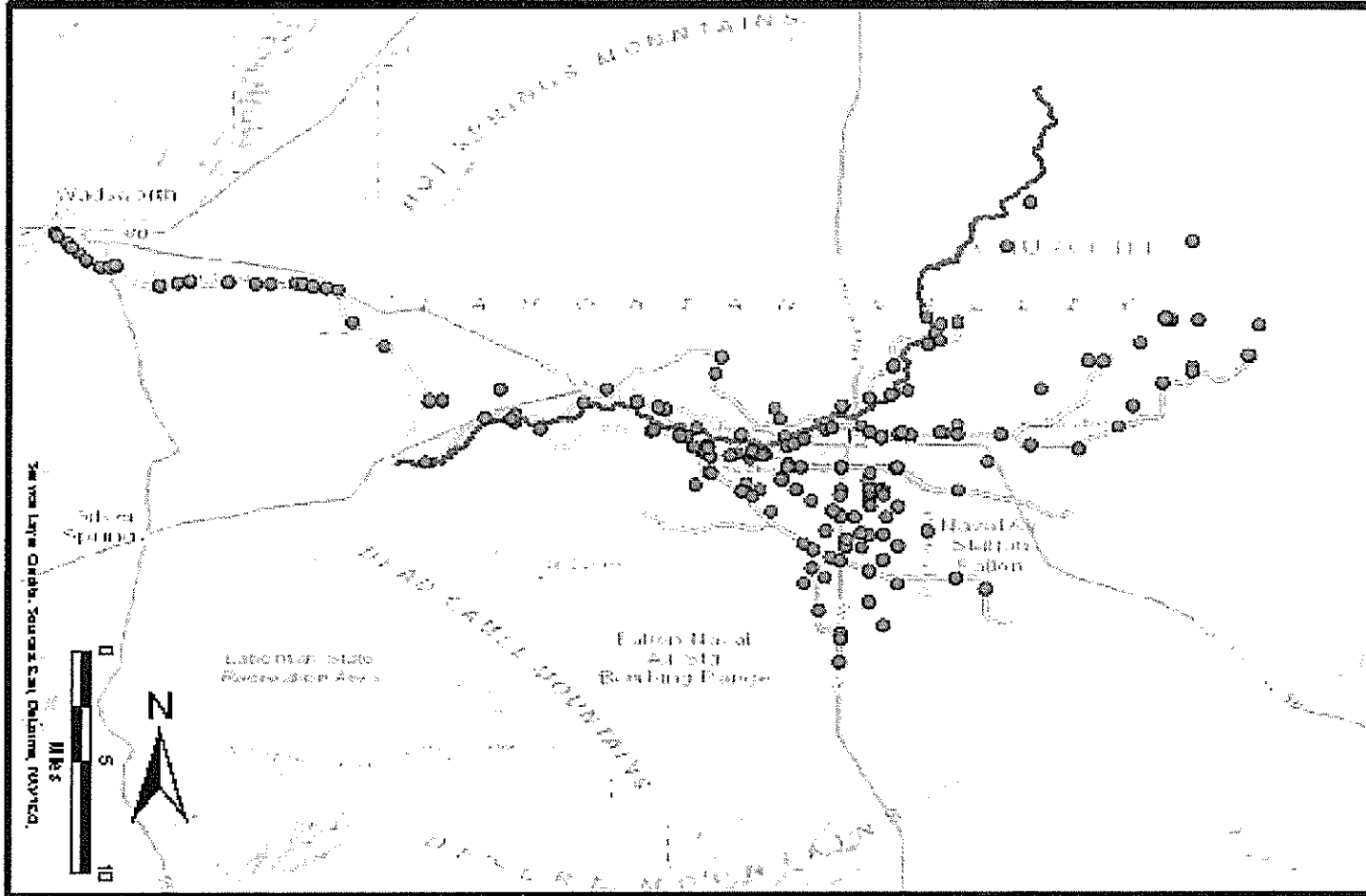
SOURCE	ATTRIBUTE
U.S.G.S. 1:250,000 1985 PROVISIONAL MAPS & PHOTO REVISIONS & 1:50,000 DIGITAL QUADRANGLE MAPS	BASE MAP, RIVERS, ROADS, CANAL NETWORK, DAMS & PIPS, CADDISFLIES
U.S.F.W.R. WADSWORTH PROJECT MAP MAY 1979	WATER SERVICE AREA, PROJECT FACILITIES, DAMS & PIPS
U.S.G.S. 1:250,000 1985 PROVISIONAL MAPS & PHOTO REVISIONS & 1:50,000 DIGITAL QUADRANGLE MAPS	BASE MAP, RIVERS, ROADS, CANAL NETWORK, DAMS & PIPS, CADDISFLIES
U.S.F.W.R. WADSWORTH PROJECT MAP MAY 1979	WATER SERVICE AREA, PROJECT FACILITIES, DAMS & PIPS
U.S.G.S. 1:250,000 1985 PROVISIONAL MAPS & PHOTO REVISIONS & 1:50,000 DIGITAL QUADRANGLE MAPS	BASE MAP, RIVERS, ROADS, CANAL NETWORK, DAMS & PIPS, CADDISFLIES
U.S.F.W.R. WADSWORTH PROJECT MAP MAY 1979	WATER SERVICE AREA, PROJECT FACILITIES, DAMS & PIPS
U.S.G.S. 1:250,000 1985 PROVISIONAL MAPS & PHOTO REVISIONS & 1:50,000 DIGITAL QUADRANGLE MAPS	BASE MAP, RIVERS, ROADS, CANAL NETWORK, DAMS & PIPS, CADDISFLIES
U.S.F.W.R. WADSWORTH PROJECT MAP MAY 1979	WATER SERVICE AREA, PROJECT FACILITIES, DAMS & PIPS
U.S.G.S. 1:250,000 1985 PROVISIONAL MAPS & PHOTO REVISIONS & 1:50,000 DIGITAL QUADRANGLE MAPS	BASE MAP, RIVERS, ROADS, CANAL NETWORK, DAMS & PIPS, CADDISFLIES
U.S.F.W.R. WADSWORTH PROJECT MAP MAY 1979	WATER SERVICE AREA, PROJECT FACILITIES, DAMS & PIPS
U.S.G.S. 1:250,000 1985 PROVISIONAL MAPS & PHOTO REVISIONS & 1:50,000 DIGITAL QUADRANGLE MAPS	BASE MAP, RIVERS, ROADS, CANAL NETWORK, DAMS & PIPS, CADDISFLIES
U.S.F.W.R. WADSWORTH PROJECT MAP MAY 1979	WATER SERVICE AREA, PROJECT FACILITIES, DAMS & PIPS

Appendix A



Appendix A

Map of the State of New York showing the locations of the State's Metering Devices (Meters) as of 1/1/2015.

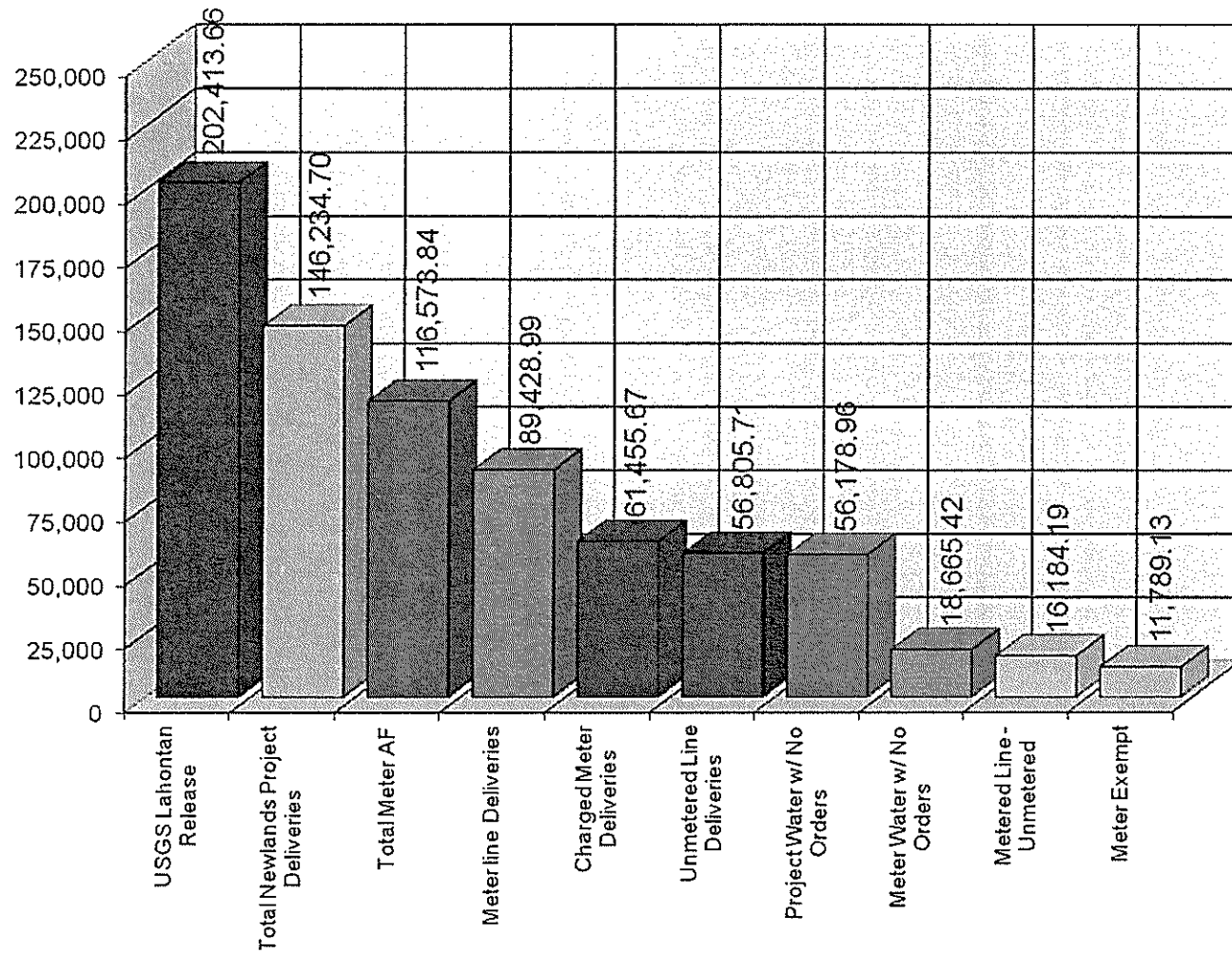


Approximate Location of Metering Devices



Appendix B

Project Chart



Appendix C

**TRUCKEE-CARSON IRRIGATION DISTRICT
RESOLUTION NO. 2015-2**

**AUTHORIZING THE TRUCKEE-CARSON IRRIGATION DISTRICT
TO ENTER INTO AN AGREEMENT
FOR THE INSTALLATION OF SATLINK2 ON FLOW MEASUREMENT DEVICES
FOR IN A GRANT OFFERED UNDER
WATERSMART
WATER AND ENERGY EFFICIENCY GRANTS-FY 2015**

At a regular meeting of the Board of Directors of the Truckee-Carson Irrigation District (District), held at the office of TCID, on the 7th day of January, 2015, the following Resolution was approved and adopted:

IT IS HEREBY RESOLVED that the Truckee-Carson Irrigation District is authorized to participate for processing an application to WaterSMART under the Water and Energy Efficiency Grant Program.

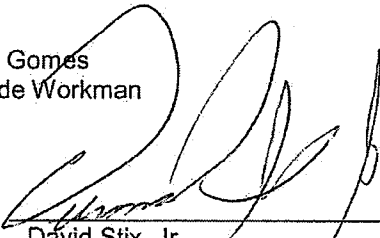
IT IS HEREBY FURTHER RESOLVED that if this project is selected for a WaterSMART Grant the District will negotiate and execute a Cooperative Agreement with Reclamation to fund at least 50% of the project costs and provide documentation showing the sources of non-Reclamation funding that totals 50% of the project costs and provide documentation showing the sources of the non-Reclamation funding that totals 50% of project costs.

PASSED, APPROVED, AND ADOPTED by the following board members present at the regular meeting of the Board of Directors of the Truckee-Carson Irrigation District on the 7th day of January, 2015.


Present:
David Stix, Jr.
Eric Olsen

Bob Oakden
Lester deBraga

Joe Gomes
Wade Workman

By: 
David Stix, Jr.
Vice President, Truckee Carson Irrigation District

ATTEST:

By: 
Bob Oakden
Secretary