WEEG-002

THE SHOSHONE-PAIUTE TRIBES
OF THE DUCK VALLEY INDIAN RESERVATION
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January 6, 2016

Bureau of Reclamation
Acquisition Operations Branch
Attn: Ms. Janeen Koza
P.O. Box 25007
Denver, CO. 80225

Re: WaterSMART Grant Opportunity
R16-FOA-DO-004 FY 2016

Dear Ms. Koza,

Please find enclosed herewith an application from the Shoshone-Paiute Tribes of the Duck Valley Indian Reservation for the WaterSMART Grant opportunity listed above.

Please note, the Duck Valley Business Council Resolution attached within this package assures the Bureau of Reclamation that the Tribes are fully behind this application and have committed Tribal resources to complete its portion of the proposed irrigation conservation improvement program.

The Tribes have had a long history with the Bureau of Reclamation for nearly 80 years. Wild Horse Dam on the East Fork of the Owyhee River is our primary water storage facility was designed and built by the Bureau of Reclamation; the first constructed in 1936, and later in 1969 replaced and increased in size from 32,000 acre feet to its current 72,000 acre feet of storage.

We understand that this Dam and Owyhee River system, along with our Irrigation delivery system is the life blood of our Reservation. We thank you for the opportunity to submit this application and hope for a positive decision on it.

Sincerely,

Lindsey Manning
Tribal Chairman

JAN 13 '16 AM10:15

Duck Valley Irrigation Project
Water Conservation and Management Improvement Project

Additional List of Project Congressional Districts

The Duck Valley Indian Reservation is located astraddle the Idaho-Nevada state boundaries and includes lands in both states. The Idaho element of the reservation is part of Congressional District ID-01 while the Nevada element of the reservation is part of Congressional District NV-02.

Duck Valley Indian Reservation
1008 Idaho State Highway 51,
Owyhee County, ID 83604

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WaterSMART – Water and Energy Efficiency Grants FY 2016
Funding Opportunity Announcement R16-FOA-DO-004

Tribal Water Conservation and Management Improvement Project

A Project To Greatly Improve Water Management and Conservation by:

- **Installing SCADA Flow Automation Devices on Three Irrigation Canals**
- **Lining 3.5 Miles of Open Canal**

Water Resource Department of the Duck Valley Indian Reservation
Owyhee, Owyhee County, Idaho
Dennis Heaps, Director

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Executive Summary

31 December 2015, Duck Valley Indian Reservation, Owyhee, Owyhee County, Idaho

The Shoshone and Paiute Tribes united at Duck Valley under the Indian Reorganization Act of 1934 and formed a tribal government through a Constitution and Bylaws which was adopted in 1936.

The Shoshoni and Paiute Tribes (the Tribes) have water delivery authority for 12,900 acres of farmlands on the reservation, involving tribal lands in both Idaho and Nevada. Approximately 1,200 tribal members people live in the general project area which also includes more than 300 farm units of 40 acres or more directly served by the DVIP.

The proposed project is an element of a comprehensive five-year water irrigation development plan formulated by the Water Resource Board of the Duck Valley Indian Reservation which oversees the Duck Valley Irrigation Project (DVIP). The project will be managed and administered by the Duck Valley Water Resource Department an entity under the supervision of the five-member Water Resource Board.

To fully understand the positive impacts of these improvements, both near and long term, it is best to put the project into the real world context of irrigation water operations on the DVIP.

To begin with, there does not currently exist a uniform, formalized system of water measurement at lateral canal headgates in the irrigated lands served by the irrigation project. The present system is a hap hazard process in which water is turned into the lateral canals in an amount based on anticipated needs of the users at the times.

This creates the situation where the volume of water in the laterals constantly fluctuates between too much and too little based on the overall demand because there is no real time evaluation of how much water is needed to maintain a constant flow to the delivery points. Consequently, in an after-the-fact water management process, project employees are constantly forced to drive to the canal head to either increase or decrease the flow.

The result is a boom or bust water management process that creates water wastage due to oversupply spills both at delivery points and at the canal end or a lack of sufficient delivery point supply due to a too low flow condition.

The Water Resource Board's five year improvement plan addresses the need to develop and implement an effective method that will minimize or eliminate the waste flow at the end of the delivery system caused by the lack of coordinated control and measurement.

To this end, the improvements to be made in this project represent the first step in the process of implementing the Boards five year improvement plan.

The project incorporates three specific key points in the five-year system rehabilitation plan.

First is the development of a SCADA (supervisory control and data acquisition) system by automating the head of all DVIP canals and laterals. The goal is to reduce operation spills and the subsequent loss to the system of irrigation water by using automated control devices to maintain constant water flows on the affected canals.

This addresses a serious water management issue which results in a constant over charging or under supplying of canal water that takes place but which goes undetected until changing water levels are noticed. When detected, the Watermaster must drive to the head of the

canal and manually adjust the headgate. The lag time between detection and correction results in a regularly overcharged canal with the resulting spill loss or an undersupply which can seriously handicap the individual water user. The actual spill loss has not been physically measured but is estimated by the highly experienced project manager to result in the loss of a minimum of approximately 2,500 acre feet of water over a typical 160-day irrigation season. This SCADA project will serve to end this boom or bust water management cycle and serve as an initial foundation to implement that step in the Board's goal of automation..

The creation of a SCADA infrastructure on the DVIP also supports another key goal of the five-year plan: creation of an effective water measurement process operated by well-trained tribal watermasters. Accurate water measurement has not been employed in the DVIP since its inception. The SCADA system provides the foundational infrastructure that will serve as the core element of a new, analytical approach to water measurement, management and conservation.

The final key point is the DVIP's plan to enclose all laterals that carry a volume of 15 cubic feet per second (CFS) or less. This is designed to reduce loss of water due to seepage and evaporation, especially in high seepage loss areas of the system.

The lining of one lateral canal that suffers from the Project's highest rate of seepage loss is the first step in that process. The lining will result in an estimated conservation of up to 2,000 acre feet of water annually.

The project plan envisions a 61.9% ~ 38.1% mixture of local and Federal dollars for a two-year program on Duck Valley tribal lands. The goal of the project is divided into two distinct work elements:

- Part 1: to install automated canal flow control structures at the head of the West Main Canal, the River Canal (also known as the 22 Canal) and the Thacker Canal.
- Part 2: to line approximately 3.5 miles of the River Canal, starting at its head and extending to a point near where it enters the West Main Canal.

The end result will be a vastly improved automated water management system that will eliminate canal flow stability problems inherent in the irrigation system due to the lack of water measurement capability coupled with antiquated head structures currently used. The automated flow controls, coupled with water savings from the canal lining will yield a total estimated annual water savings of up to 6,000 acre feet of irrigation water. When completed, the project will also provide Duck Valley with the foundational infrastructure to launching an accelerated enhanced water measurement and system management program for tribal water masters.

The entire project will be completed by the end of calendar year 2018. Work will commence October 2016 and be completed by October 2018. Note that work must be done when the canals are empty and individual water users are outside of the growing season. This binding condition therefore restricts construction to the non-irrigation season, October through April.

This grant application will be a cooperative funding process with a total project cost of $787,751. Of that, $487,751 will be provided by the applicant and combined with $300,000 in WaterSMART grant funds from the Bureau of Reclamation (BoR). This translates to a funding mix of 61.9% local dollars and 38.1% Federal dollars.

Local funding will be provided by the Duck Valley Water Resource Board in the form of manpower, equipment and miscellaneous supplies etc., for the purchase and installation of the three SCADA automated canal flow devices and equipment. DVIP will also provide equipment, manpower and approximately 8,500 feet of composite geotextile lining material for the canal lining project.

The Federal funds requested will be used exclusively to purchase approximately 10,000 feet of composite geotextile lining material required to fully complete the lining of 3.5 miles of the River Canal.

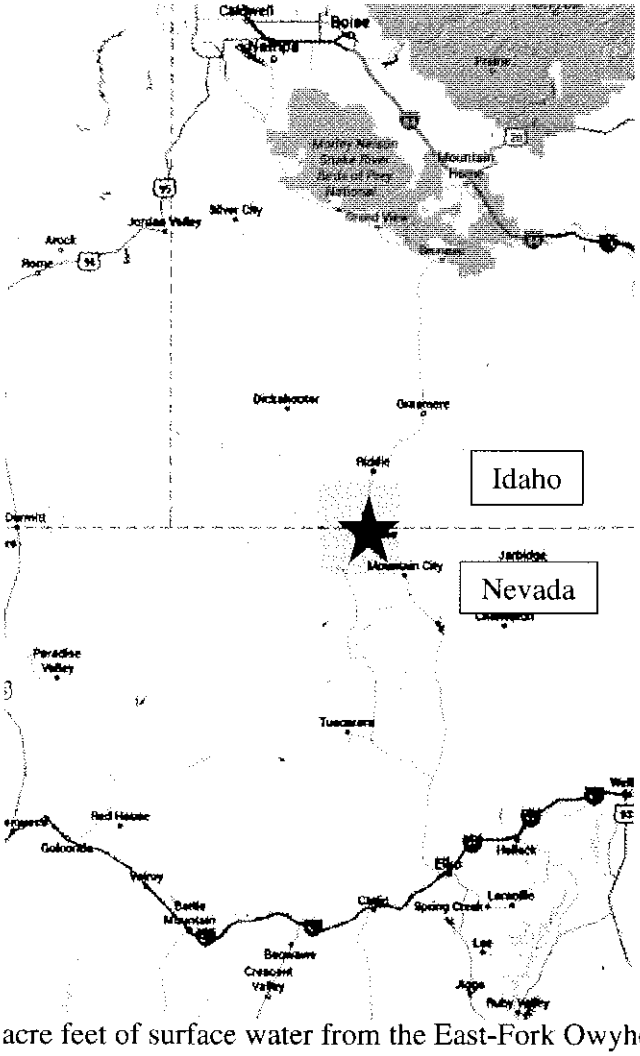
A specific series of actions over a 24-month time frame of the project will be required to complete the project. The plan is to install the automated canal flow equipment during Year 1, the period October 2016 – April 2017, and the lining during Year 2, the period October 2017 – April 2018.

However, if it is feasible and achievable, both parts of the project will be completed in the period October 2016 through April 2017.

The project area is not located on a Federal facility, but rather on Duck Valley Reservation lands belonging to the Shoshone/Paiute Tribes.

Background Data

The project area (see illustration) is located within the boundaries of the Duck Valley Indian Reservation which is located on both sides of the Idaho-Nevada border.



The reservation occupies approximately 450 square miles in Idaho and Nevada and is approximately 22 miles long and 20 miles wide, 145,545 acres of which are in Idaho and 144,247 acres in Nevada.

Specifically the Duck Valley project is located on a high desert plain 5,500 feet above sea level in Elko County, Nevada and Owyhee County, Idaho about midway between the cities of Elko, Nevada and Mountain Home, Idaho.

The reservation is primarily an agricultural based economy. Crops generally grown on the reservation are pasture, hay and various grains. Ranching is another source of income to tribal members with cattle and horses

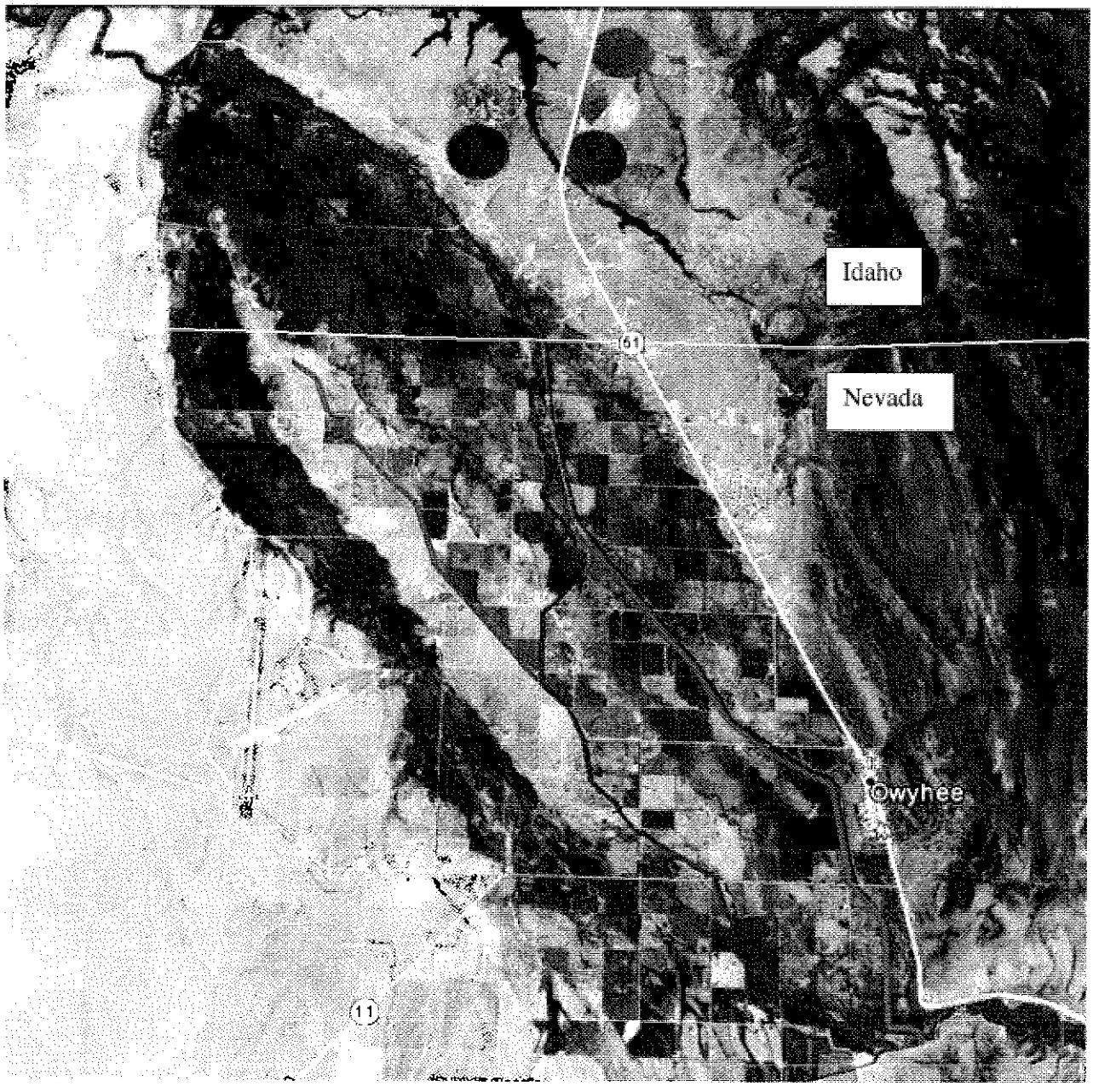
The Duck Valley Irrigation Project serves approximately 2,300 tribal members who farm and ranch on about 12,900 acres of irrigated land. There are more than 300 farm units of 40 acres or more.

Lands on the farm units are irrigated from the natural flow water of Owyhee River East Fork and water stored behind the Wild Horse Dam located on the East Fork of the Owyhee River in Elko County.

The Tribes have the right to 111,476 acre feet of surface water from the East-Fork Owyhee River basin; 2606 acre feet of ground water within the reservation boundaries; and the entire flow of all springs and creeks originating within the interior of the reservation.

The Duck Valley Irrigation Project has a priority date of April 16, 1877 with a period of use from January 1 through December 31 of each year. Annual total irrigation water use by the Duck Valley is approximately 50,000 acre feet of natural flow and storage water.

General Project Location



West Main Canal

River Canal

Thacker Canal

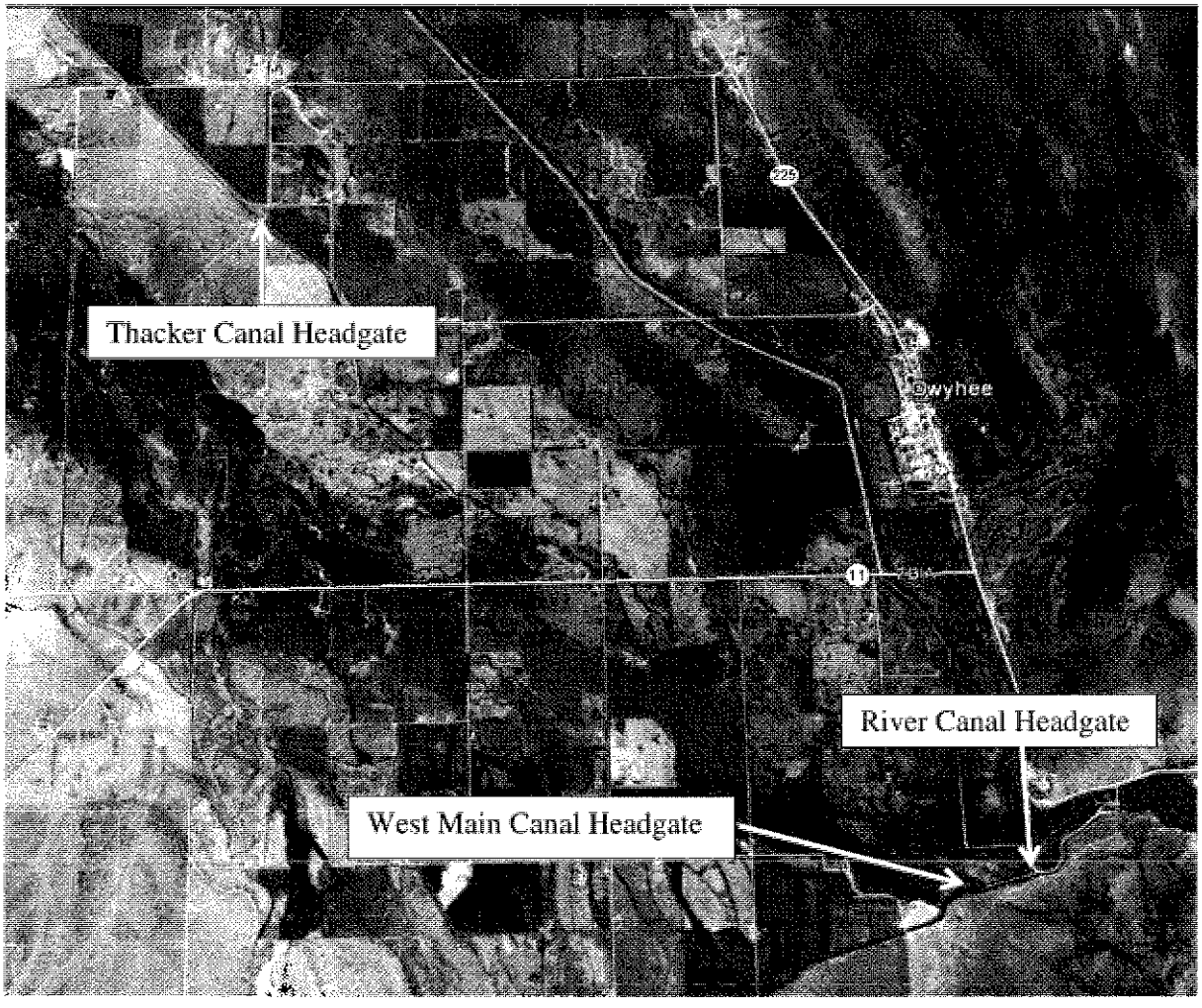
The DVIP serves lands in both Idaho and Nevada. The locations where physical work will be done on the project are all located in the Nevada portion of the DVIP. However, in the case of the West Main Canal, the project work done in the Nevada portion will also result in water management improvement in the Idaho portion of the project area.

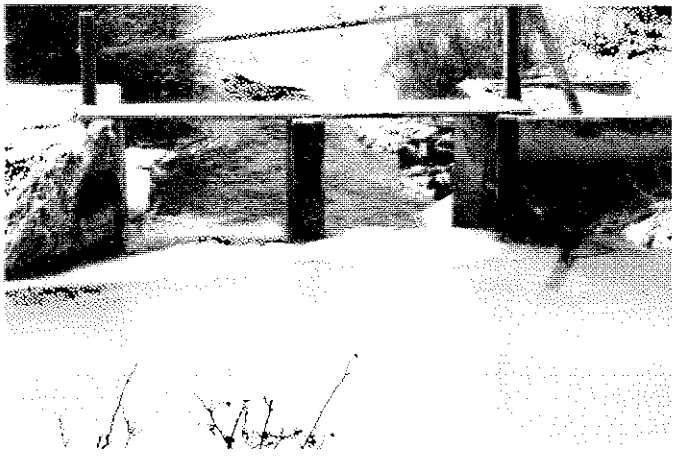
Owyhee River irrigation water is diverted from the river into the Highline Canal, DVIP's primary supply canal at a river diversion approximate 1.75 miles south of Owyhee, Nevada.

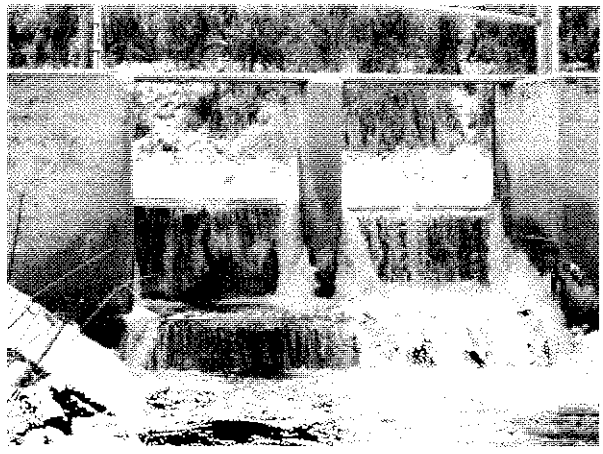
The West Main Canal draws its water from the main supply canal and then flows northwest across the project for 10.6 miles supplying water to 191 water delivery points including 16.8 miles of lateral and sublateral canals.

The Thacker Canal is one of the lateral canals served by the West Main Canal. It is 4.3 miles long and serves 98 water delivery points including 8.1 miles of laterals and sublaterals.

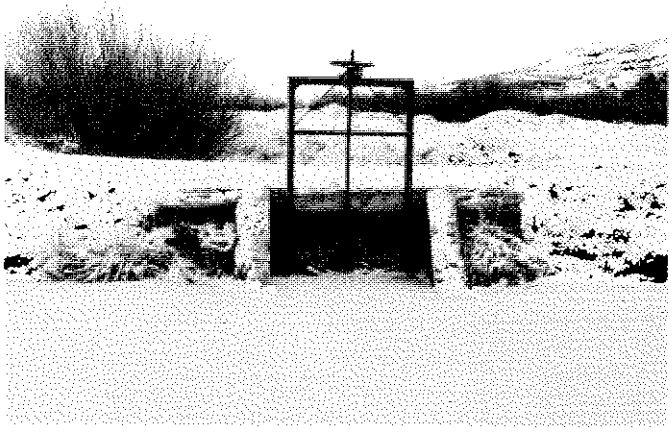
The River Canal also receives water from the main supply canal at a headgate about ¼-mile away from the West Main Canal. The River canal is approximately 4.8 miles in length and serves 77 water delivery points including 4.2 miles of lateral canals. Below are the locations of the three headgates involved in the project.



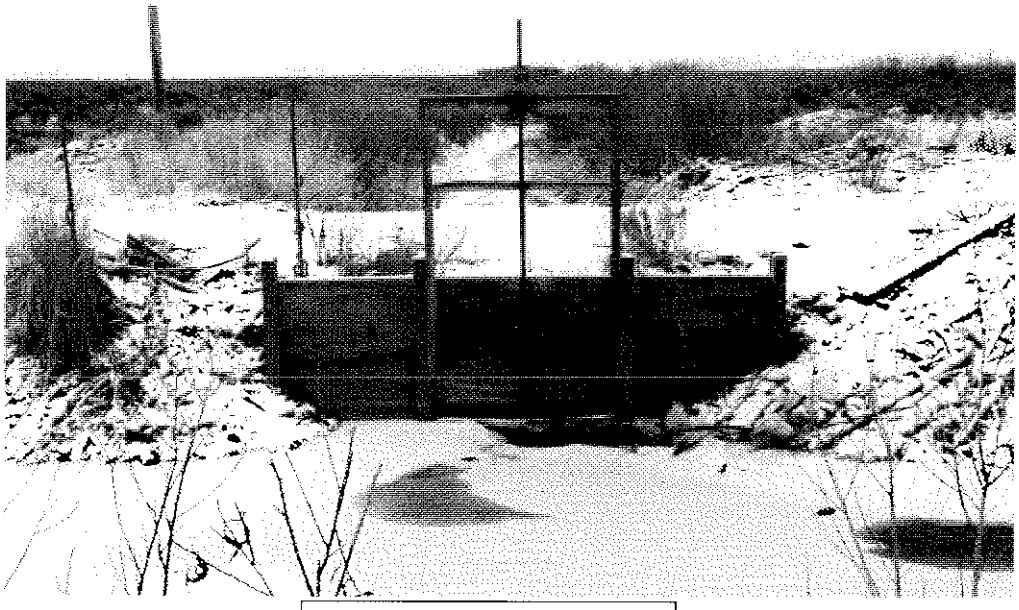




West Main Canal Headgate



River Canal Headgate



Thacker Canal Headgate

Technical Project Description

The overall goals of the project are water conservation, enhanced water measurement and management, and launching the development of a SCADA based irrigation water delivery system to provide the infrastructure of a project wide water measurement system operated by trained watermasters and ditchriders.

This goal is to be achieved in two phases:

- The first phase is to install new SCADA-based headgates on the three canals so that constant canal flows based on water measurement can be maintained.

This will require the purchase and installation of the automation elements on three headgate structures. This project will be done starting in October 2016 with an estimated completion date of April 30, 2017 in time for the start of the irrigation season.

The SCADA systems on the three canal headgates will be installed in a three part process that will start at the end of the irrigation season. All work will be done by DVIP personnel under the direction of the Water Resources Department manager who has extensive, first-hand experience in the installation of automated headgate devices.

First, the headgate structures themselves will be evaluated, modified, refurbished or rebuilt as necessary.

The West Main Canal headgate is an open stoplog bay. The center pier will be removed and replaced with a Langaman style bi-fold headgate equipped with a sharp crested weir for accurate water measurement.

The River Canal Headgate is a concrete structure with a manual screw type gate. This gate will be actuated with downstream telemetry with a rated canal section for accurate water measurement.

The Thacker Canal Headgate is a wooden structure on the face of a 36-inch pipe that passes under a maintenance road. The gate uses a screw type rod with a wheel that is turned manually to raise and lower the metal covering on the opening of the pipe. The headgate will be replaced with a new concrete structure to accommodate a new bi-fold Langaman type headgate with a sharp crested weir for accurate water measurement.

Second, the automated equipment, including solar power devices will be installed on the three headgates.

Third, the SCADA systems will be activated, tested and adjusted as needed then .telemetered to the DVIP main office

Solar panels and batteries will be installed at each SCADA headgate to supply the necessary electrical power to operate the system.

All work will be under the direct supervision of the Water Resources Department Director who has extensive firsthand experience in the siting, preparation and installation of Langaman bi-fold gates and automated SCADA operations. The cost of the equipment includes the on-site services of a technician who will monitor the process, do all final wiring and then performance proof and commission each headgate installation.

- The second phase of the project will be the lining of approximately 3.5 miles (18,500 feet) of the River Canal. This phase of the project is where the use of Federal funds will be involved through the purchase of lining materials.

The River Canal accounts for the DVIP's greatest loss of water due to seepage particularly in areas where the canal is in close proximity to the Owyhee River.

Work on the canal lining will begin in October 2017 following the conclusion of the 2017 irrigation season. Completion of the lining project is planned to be finished by April 30, 2018. All lining work will be done by DVIP full-time or temporary employees using equipment and materials owned by DVIP or rented from private sector companies. The lining material will be purchased from a private sector firm.

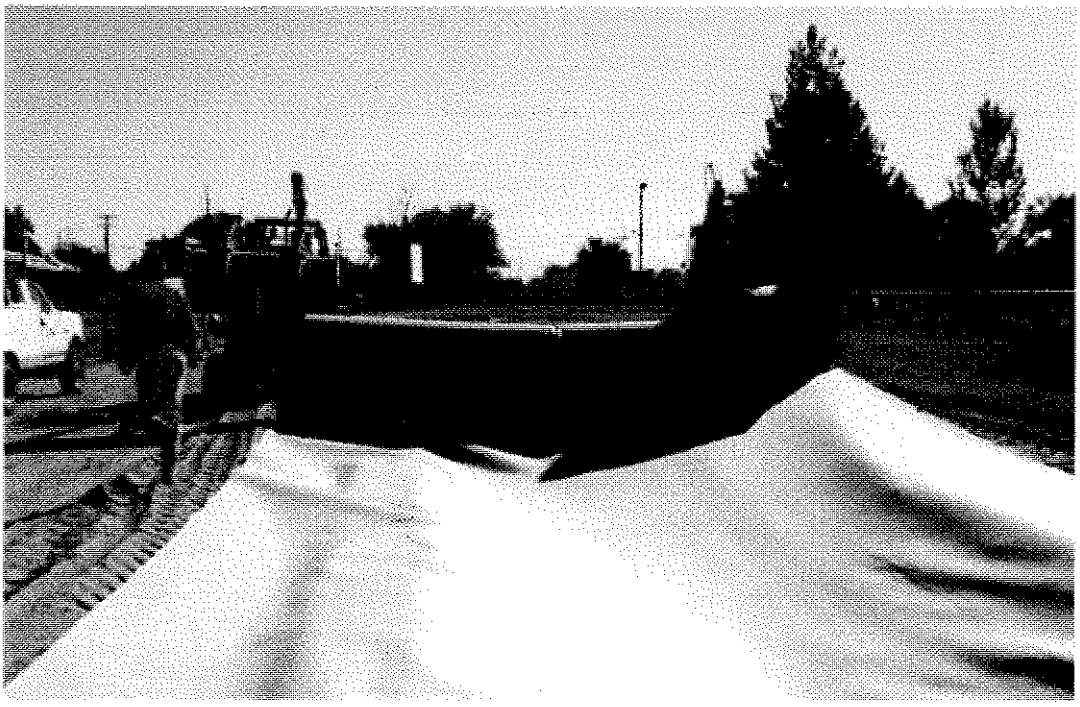
The canal will be lined with a geocomposite geotextile that consists of two (top and bottom) polyester nonwovens bonded to a 20 or 30 millimeter polyethylene geomembrane. The geocomposite liner is inert to biological degradation and naturally encountered chemicals, alkalis and acids.

The general installation process will be as follows (photos are representative only and do not show DVIP lands):

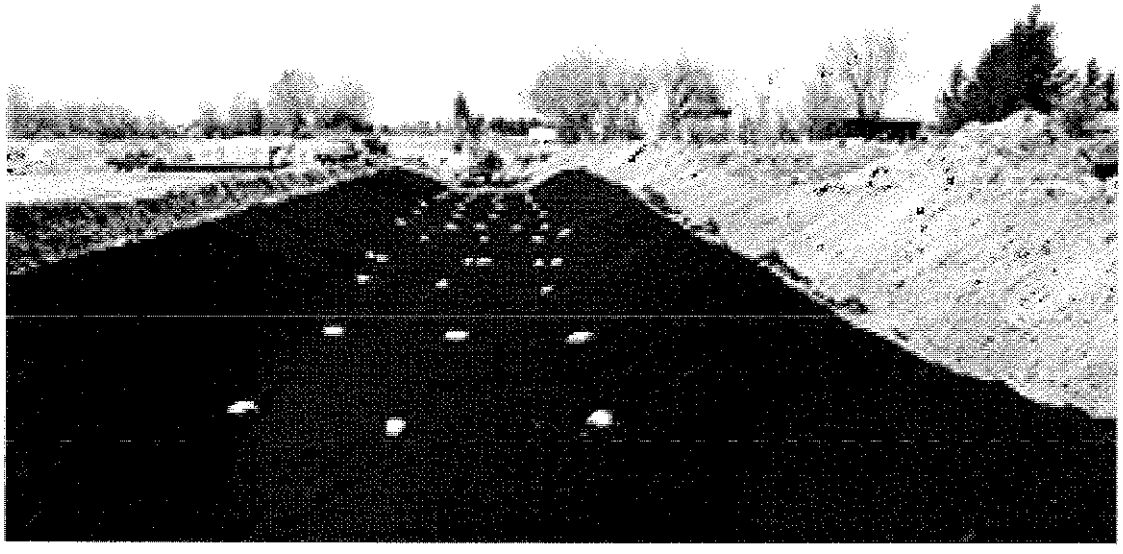
1. A side-blade scraper or other bladed piece of equipment would be used to reshape the sides of the canal to remove any large rocks, vegetation, etc. The scraper would also be used to level the canal bottom to provide a uniformly flat surface on which the lining would rest.
2. A back or track hoe would be used at the head and end of the canal to cut trenches across the canal from one side to the other to create an anchor trench for both ends of the lining in which the lining is secured to prevent water from migrating beneath the material.

After the sides and bottom of the canal have been shaped, a track hoe will be used to dig anchor trenches on the top of both sides of the canal to serve as anchor trenches where the side edges of the lining will be placed and then buried under backfill soil.

3. After the sides and bottom of the canal has been prepared, the canal lining will be installed. The lining comes in 17-feet rolls containing 360 feet of lining material. A roll of liner would be suspended from the backhoe boom over the canal and then be unrolled by workers and smoothed into place on the canal sides and bottoms as the track hoe moves forward. The lining is secured with weights until rolls can be sealed together with adhesive.



After the roll of the lining is smoothed and properly positioned on the canal, a new roll is lowed into place with the track hoe and unrolling begins again. The the end of the roll of installed lining is then attached to the start of the next roll by means of adhesives to create a water tight seal between the two layers of lining. This installation-sealing-installation process continues until the entire length of lining is in place and secured on both ends with the cement filled anchor trenches.



4. Attachment to any existing concrete structures will be made using aluminum or stainless steel batten strips with anchor bolts.
5. The final step is to backfill soil in the top anchor trenches to secure the tops of the canal lining sides and then turn water into the canal.

It is estimated that reshaping of the canal sides and bottom would require four to six weeks to be completed before liner installation begins.

Liner industry reps have advised that, depending on manpower, parallel installation is relatively quick with it being not uncommon for about 1,800 feet of liner (5 rolls 17' wide by 360 feet long) to be installed in a day, including the seaming.

If that holds in the case of the DVIP project, the reshaping and liner installation process will require approximately eight total weeks. However, late fall weather in the geographical area of the project work is unpredictable and could cause delays in any set installation schedule.

Another installation process option is for canal shaping and liner installation to be done simultaneously. However, given the available in-kind manpower availability, that option would substantially reduce the daily amount of lining being installed and would end up requiring approximately the same total amount of time. The project manager will determine at the time work commences which of the two options will work best.

All work being done on both phases of the project will be under the continual supervision and review of the Water Resource Department Director. He will specifically allocate as in kind services a set number of his paid working hours to serve in the capacity as project manager. Additional review and final project approval will be done by the Water Resource Board of Directors..

Evaluation Criteria

A. Water Conservation

A.1: Quantifiable Water Savings:

The Duck Valley Irrigation Project holds total water rights of 111,476 acre feet of East-Fork Owyhee River surface water. Annual total irrigation season water use for the DVIP is approximately 50,000 acre feet.

DVIP has a total of 56.1 miles of main supply canals and 54.4 miles of lateral and sublateral canals. The three specific canals involved in the project account for 19.7 miles of supply canal and 29.1 miles of lateral and sublateral canals.

The central water wastage is a byproduct of difficulties with constant flow levels on the three project canals. Those difficulties results in the Highline Canal, DVIP's main supply canal, being constantly adjusted to meet the over and under water supply demands of users on the three project canals.

When a project canal suddenly demands extra water, the Highline Canal must then be surcharged to meet the increased demand and still meet the needs of other lateral canals it serves. This surcharging accounts for increased diversion of East Fork Owyhee River natural flows or releases from DVIP storage water in Wild Horse Reservoir.

Conversely, when the project canals demand drops without warning, the Highline Canal unsurprisingly ends up being overloaded with too much water which results in wasted water on the Highline in the form of tail end spill. That unnecessary loss of water is not accounted for in the conservation estimates, but does occur due to the water management process as it now exists.

This constant over-under water flow situation on the three project canals water consequently produces a detrimental water management situation that envelopes the entire irrigation project. The increased flows in the three canals extend beyond the demand period of the users

There is a secondary impact of the water management process as it now stands. The Highland Canal also supplies water from the Owyhee River drainage to Sheep Creek and Billy Shaw Reservoirs on reservation lands. These two reservoirs, along with a third reservoir also fed water from the East Fork Owyhee River, are home to world-class fisheries which are crucial tribal economic sources of income from off-reservation visitors who pay purchase recreational and fishing permits.

The inability to maintain balanced and consistent flows of water to the reservoirs poses a long range potential impact to the fiscal well-being of the Tribes and their members. Both water levels and the impact of hot summers on water supply temperatures are potential threats as a result of the boom-bust cycles on the project canals.

The installation of SCADA flow management controls at the head of the three project canals will eliminate the problem by keeping canal flows at a consistent level through regulated flow increases or decreases that can be implemented immediately based on real-time conditions rather than waiting until the over or under flow levels are noticed by users, the watermaster is notified and can physically travel to the specific headgate to physically make adjustment in canal flow rates.

In a broad sense, the SCADA system will save wasted water not only on the project canals but will help reduced wasteful diversion from the water source. Therefore, the water saved can remain in the East Fork Owyhee River available for use when truly needed by other users in the DVIP or water users in the downstream reaches of the East Fork Owyhee River.
As explained in the executive summary, the lack of proper water measurement throughout the DVIP makes it difficult to provide specific, quantifiable water savings figures.

Therefore, the water conservation savings figures represent and rely on a good faith, conservative-based best estimate by the DVIP manager, a highly experienced water management individual with more than 40 years of experience in both large and small irrigation projects. The estimates are also based on the observed water operations over the course of numerous irrigation seasons.

Additionally, technical information supplied by the liner industry indicates that seepage loss on a lined canal typically is reduced to less than 5%. This has been used to estimate specific seepage loss on the River Canal which flows at 100 CFS for the entire irrigation season and 30 CFS of stock water amounting to approximately 250 days per year..

Therefore, irrigation season water savings have been best estimated at:

- 3,000-4,000 acre feet per year from the SCADA headgates installation on the three canals due to: sharp curtailment of water wastage due to tail end spills from overcharged canal flows; and reduction of unnecessary withdrawals of storage water from Wild Horse Reservoir due to the unpredictable and constant demand for additional water need to restore adequate user demand flows in the canals.
- 1,500-2,000 acre feet per year resulting from reduced seepage losses on 3.5 miles of the River Canal due to lining.

Accordingly, the best good faith estimate, in the absence of any historical physical measurement data, is that there will be a total annual overall savings of 4,000-6,000 acre feet of irrigation water post project completion.

Those figures could increase once the accurate water measurement process is in place and specific figures can be compiled. That scientific measurement process will be implemented starting with the 2018 irrigation season when the project is complete. Intensive water measurement training will be provided to DVIP watermasters during the project construction phase to prepare them for implementation of the new measurement regimen.

Equally significant, the current water losses have an effect on the main supply canal from which two of the three project canals draw their supply. Both the West Main and River canals draw their supply from the Highline Canal, DVIP's main supply canal while the Thacker Canal draws its supply from the West Main.

Any unnecessary loss of water is frequently problematic for the DVIP because of climatic conditions in the Duck Valley Reservation region. The DVIP is located in a high desert plan with average annual precipitation of just 14.78 inches, predominantly during the winter months in the form of rain and snow.

In the first half of the 1900s, Duck Valley frequently suffered devastating drought conditions which decimated natural flow conditions on the East Fork Owyhee River. In 1936, construction of Wild Horse Dam and Reservoir created a storage water reserve that mitigated the limited natural supply of water. But the fact of the matter is that the Tribes' entire agricultural economy is fully dependent on there being an adequate water supply available to meet the needs of the entire irrigation season. Therefore, any waste of water, no matter how small, is a matter of high concern for the Tribes. The five-year plan for improvements and water measurement implementation is a proactive move by the Tribes to help alleviate this concern.

The irrigation improvements from this project also are a crucial first step in a forward looking effort by DVIP to prepare for future water challenges that climate change will produce.

With the understanding that first priority use of the conserved water will be to ensure full deliveries within the entire NSPC system in times of shortage or as needed, the water saved thus provides a water management asset in a variety of ways:

- During periods of drought, the conserved water can be reallocated as needed by the DVIP to improve individual farm unit quotas and protect crop production within the area of operations;
- The conserved water potentially can be made available for use by other entities such as downstream irrigation districts, recharge projects, flow augmentation for endangered species recovery, enhancement of reservation fisheries, etc.

Additionally, the switch to SCADA canal headgates is expected to significantly reduce the chances of unintentional over delivery to individual users. That contrasts to the rather haphazard common supply user managed process that has been used for decades without any science based water measurement. Just how much those savings might be cannot be determined until the DVIP has several years of water use data under the new system.

Percentage of Total Supply: It is important to put into context the overall value of the water that will be conserved by the improvements to the DVIP operations. The estimated annual water savings amount to 8%-12% of the current annual irrigation use. It is anticipated that specific water measurement conducted in post project irrigation years are likely to actually show higher water savings than estimated.

While the annual water savings of this project is a modest percentage of the total water supply, it is not an understatement to say that this savings plays a far great role than the figures would suggest. It is a factual statement in both theory and practice that the management flexibility provided results in the ability to far better manage the entire yearly supply.

Presently, DVIP is frequently unable to provide sufficient water to users on the farthest reaches of the irrigation system. In some cases, these users have had to do without their authorized irrigation water due to low supply. The conserved water does not solve completely this problem, but it does provide a source of addition water to supplement during low water years.

When the conserved water is not needed by users , it can potentially be utilized in various management combinations – i.e. left in storage, allocated to users on other lateral and sublateral canals in the system, possibly made available for rental through existing water banks, released to the entire basin system, or any and all, etc. Ultimately it represents a far more effective water management for the NSPC.

To fully understand the practical water conservation impact of this project, it should be noted that the current water loss equals enough water to ensure an adequate supply of irrigation to upwards of 6,000 acres of pasture land or hay lands. That is a crucial element in the economic stability and development in an area where livestock feed, horses and cattle provide a major source of income.

The DVIP water delivery system has a designed capacity to provide 3.7 acre feet per acre of irrigable lands per season but this figure is at times unattainable due to increasing periods of drought.. The savings of up to 6,000 acre feet thus can provide a crucial measure of water supply certainty. That is hugely important in the high desert lands of the reservation where average precipitation is 14 inches, largely snow, and that historically is regularly subjected to severe drought conditions and where summer daily maximum temperatures average about 82 degrees.

Beyond just irrigated agricultural, the saved water becomes potential available for other economic development uses by the Tribes such as downstream flow augmentation for endangered species, preservation and development of recreation, groundwater recharge, future Agribusiness development such as dairies, food production, general farming, etc. These are industries totally and completely dependent upon the certain availability of water and the flexibility to make water available when and where it is most needed. Thus conserved water can ultimately also help fuel the engine of industrial development on the tribal lands.

B - Energy-Water Nexus

The project will not reduce existing energy usage because there is no electrical power being used in the project area currently. However, the headgate automation system to be installed will result in electrical energy avoidance by eliminating future electrical demand on the local electrical supply grid.

The SCADA headgate portion of the project when finished will involve the use of renewable energy technology. Solar panels and batteries will be installed concurrent with the SCADA systems on all three headgates. The use of power generated by the solar panels and stored in the batteries will provide all the electrical power needed to operate the three automated headgates.

SCADA system industry representatives have provided estimates that indicate that the systems are designed to operate on an energy demand of 250 watts per hour per automated headgate. That equates to an electrical demand of 750 watts of electricity per hour for the entire 160 day irrigation season. That translates to an irrigation season electrical demand of 2,880 kWh, all of which is avoided because solar power will eliminate any demand on the existing electrical grid.

C - Benefit to Endangered Species

The Owyhee River system, of which the East Fork is a tributary, is the home to the Redband Trout species. The Redband Trout is designated as a sensitive species by the Idaho and Nevada Bureau of Land Management and is also listed as Species of Greatest Conservation Need in Idaho and Oregon (Idaho Department of Fish & Game, 2005).

It is a well-established fact that the Federal government annually has difficulty in securing sufficient water for salmonid and other fish species recovery support. The water savings from the project would open another productive water rental source in support of those efforts.

Irrigation water is purchased on a willing seller basis or rented via water banks by the Bureau of Reclamation to supply annually at least 429,000 acre feet of water to make possible the Snake River and Colombia River downstream flow augmentation efforts required under the dictates of the increased flow strategy followed in endangered species recovery efforts.

Under the willing seller-willing buyer process currently used, the water conserved by this project, depending on conditions and if not needed by its own users, could potentially be made available to the Bureau of Reclamation by DVIP.

DVIP conserved water, when viewed in that context, has the potential to provide a direct benefit to recovery efforts for fall Snake River Chinook salmon; spring/summer Snake River Chinook Salmon; and Sockeye Salmon; all of which are Federally-recognized endangered species. It also will benefit Snake River steelhead, Bull Trout and Snake River White Sturgeon which are listed as Federally-recognized threatened species.

The conserved water can also potentially be used to assist in supporting fisheries within the Owyhee River system and on the reservation itself. The Duck Valley Reservation houses trophy-class fisheries that have been considered by the Bonneville Power Administration as potential future location for an Owyhee River species recovery hatchery. Sufficient water to maintain required water temperatures is a critical element in those on-going discussions.

It should also be noted that the availability of conserved water to be wheeled downstream through the Owyhee River to the Snake River could potentially be used for the maintenance of historic streamflow levels in the Snake River, a lynchpin in the efforts to maintain steelhead and white sturgeon habitat.

D - Water Marketing

The water conserved via this project feet creates an excellent water marketing possibility which can potentially become at some point in the future, part of the DVIP operation.

Although first priority use of any water saved would always be to meet the demands of the DVIP system users, abundant water years would potentially provide the opportunity for the water to be made available to other users via a rental bank process.

The conserved water could potentially be retained in the Wild Horse reservoir and then marketed to downstream irrigation entities or to entities or projects involving the Snake River. The availability of the saved water also would present the opportunity for a variety of situation specific water exchanges.

Should DVIP ever decide to market the conserved water, it would become an excellent candidate for a wide variety of water users in the immediate vicinity and elsewhere. Northern Nevada and Southwestern Idaho both have a long history of using simple or sophisticated rental water exchange projects to resolve one-time or ongoing water conflicts where, for example,

rented water is used to replace water taken out at some other point in the system; as mitigation for groundwater withdrawals deemed injurious to surface water users; as part of formal groundwater recharge efforts.

The water market potential exists year round; however, the primary duration of the annual water market would be April-October, the designated irrigation season. Still, the water market would be available throughout the entire calendar year since flow augmentation, water exchange projects, groundwater recharge projects, etc., are not confined to irrigation seasons.

It should also be noted that the water conserved by the DVIP also becomes available for potential inclusion in other marketing opportunities that may develop in the future.

The legal issues involved in any potential water marketing are already in place via well established procedures, rules and statutes specifically germane to water marketing practices in both Idaho and Nevada.

F: Implementation and Results

F.1: Project Planning:

This project is a key element in the five-year irrigation improvement plan developed and approved by the Duck Valley Water Resource Board..

As part of determining the best course of action, the Board and the Water Resource Department Director evaluated and established a variety of strategies to be achieved over the next five years whose goal was the conservation of water, better water management through a precision water measurement system underpinned by automated water delivery facilities, and ensuring that sufficient water is provided to all water right holders in the DVIP.

This specific proposed project presented here is the first step in meeting the goals of the Board's five-year plan. It is the initial start in developing the automation foundation for a professional water measurement system. At the same time it is a major initial step in the Boar's plans to line as many of the lateral and sublateral canals as possible to reduce water lost through seepage.

This project constitutes the launching of a plan of improvement and modernization that overcomes the inertia of an irrigation system largely unimproved since its development 80 years ago. Full support of this proposed project is perhaps best demonstrated by the approval of this project by The Governing Body of the Shoshone-Paiute Tribes, known as the Business Council.

F.2: Readiness to Proceed.

The project is ready to proceed immediately upon entering into a financial assistance agreement with the Bureau of Reclamation.

The specific project schedule was outlined in great detail earlier in this application but will generally be as follows:

- October 2016 to April 2017 - renovation of three canal headgates including the installation of new gates equipped with SCADA systems to automate operation of the headgates.
- October 2017 to April 2018 - the lining of 3.5 miles of the River canal with geocomposite geotextile lining.

F.3: Performance Measures

There are several different methods available by which post-project benefits will be determined and evaluated.

Installation of precise water measurement devices in the new headgates will provide detailed data on total irrigation season water use. At the end of the irrigation season, the total water use for the users involved in the project will be used to set a baseline annual water use record for future years.

The DVIP manager also will be able to evaluate episodic evidence from watermasters and water users of how the use of automated headgates have smoothed out the over and under flow problems that currently exist.

The canal lining will be evaluated based on water delivery records to determine the reduction in water demand due to seepage loss.

Other records are maintained detailing any of the conserved water marketed to other entities through actions such as entering the water in the water bank system, water exchanges, etc.

F.4:Reasonableness of Costs:

Total project cost, both Bureau of Reclamation and local funding is calculated to be $787,751. The annual acre feet of DVIP water conserved is 6,000 while the total acre feet of water that will be better managed will be the DVIP average annual water supply of 50,000 acre feet. Annual energy generation avoidance savings resulting from the use of solar energy is estimated to be 2,880 kWhs over the life of the project.

Based on irrigation construction industry general standards, consultation with equipment and material suppliers and first-hand practical experience with the products by the DVIP manager, the expected life of the project is estimated to be a minimum of 75 years.

G: Additional Non-Federal Funding

The total cost of the DVIP project has been calculated to be $787,751. The non-Federal funding amounts to $487,751. Non-Federal funding amounts to 61.9% of the total project cost.

$400,000
$787,751

H: Connection to Bureau of Reclamation Project Activities

1. The DVIP uses natural flow and storage water stored in a storage project built by Bureau of Reclamation project for the Bureau of Indian Affairs on the East Fork Owyhee River.
2. The project receives Bureau of Reclamation water diverted from the Owyhee River.
3. The project is not located on Bureau of Reclamation lands and does not involve Reclamation facilities.
4. The project is located within the Snake River Basin which contains several different Reclamation projects including dams, storage reservoirs and water transmission facilities such as canals.

5. The benefits from the project will contribute water to the Northern Nevada and Southwestern Idaho areas where a complex system of Bureau of Reclamation projects, facilities and water delivery and supply systems are located.

6. The water saved due to the project can conceivably help the Bureau of Reclamation meet trust responsibilities to Idaho Indian Tribes. Conserved water marketed through a willing seller – willing buyer could be used by the Bureau of Reclamation to meet Snake and Columbia tribal trust obligations should the Bureau of Reclamation choose to do so.

Environmental and Cultural Resources Compliance

Under Tribal regulations, the entire scope of the project has been reviewed by the Duck Valley Tribal Cultural Department. The Cultural Department Director has determined the project will not have any cultural, historical or environmental impacts and therefore permitting is not required. A statement to that effect is included later in this application.

It is not anticipated that there will be any other environmental or cultural resources issued involved in the project. However, as a precaution, a line item entry in the project budget has been included as a precaution and to fulfill application requirements.

1. All headgate and lining work will be conducted within the existing footprint of the DVIP canal system. Work will be done when canals are empty so there will be no impact on water. A very limited amount of dirt will be removed from the canal walls and floor during shaping and creation of cross trenches during lining but the dirt will be used to level the canal floor and bury the lining in the anchor trenches along the top of the canal sides. None of the land involved is consider animal habitat.

2. DVIP is not aware of any endangered or threatened species in the project area.

3. There are no other wetlands or surface waters involved in or near the specific work areas that that currently are subject to Clean Water Act jurisdiction.

4. The water delivery system was constructed in 1936.

5. There will be modifications and effects on the existing system. New automated headgates will be installed on three lateral canals and approximately 3.5 miles of open canal will be lined with a geocomposite geotextile.

6. There are no buildings, structures or other features on or eligible for listing on the National Register of Historic Places.

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

8. The project will have no effect on low income or minority populations.

9. The entire project is located on tribal lands; however, the reservation Cultural Department has determined there are no tribal sacred sites involved in the project area.

10. The project will enhance prevention efforts involving noxious weeds. The bank shaping in preparation for lining will remove all vegetation. Then the geocomposite geotextile canal lining will prevent the germination of weeds on the sides of the canal. The result is approximately 3.5 miles of weed-free canal bank because the impenetrable lining will have eliminated the growth of certain noxious weeds typically found along open waterways.

Required Permits or Approvals

The Duck Valley Tribal Government has determined that there will be no impacts regarding this project or other parts of the project because the work will be done totally within the footprint of the existing water delivery system, all of which is located on tribal grounds.

All electrical and equipment installation will be done by licensed electricians and plumbers and will meet existing local or state construction code standards and requirements including any required inspections.

Agricultural Operations Agreement

One of the specific elements of this project will result in the conservation of irrigation water. Accordingly, and in accordance with Section 9504(a)(3)(B) of Public Law 111-11, the Duck Valley Irrigation Department hereby agrees and stipulates:

- The current 12,900 acres of lands subjugated to irrigation within the DVIP will not be enlarged with conserved water specifically resulting from the improvements associated with this project; and
- DVIP will not otherwise increase the consumptive use of water in the operation of the DVIP, as determined pursuant to the laws of the State of Nevada or Idaho.

Tribal Cultural Department Statement of Review

PO Box 219 Owyhee, NV. 89832

January 4, 2016

To: Dennis Heaps
Water Resource Director
Shoshone-Paiute Tribes

Re: Tribal Water Conservation and
Management and
Improvement Project

Dear Mr. Heaps,

Thank you for allowing me to review your proposal and grant application for this important project. This project will definitely improve the existing irrigation system in our valley. After visiting with you about this project, and reading the proposal, it is clear that all of the work on the canals and ditches will remain within the pre-disturbed footprint, there shouldn't be any impacts to any cultural resources. However, if there is a discovery of a Native American site or human remains during construction, stop all work immediately and contact my office. Work should not resume until the ok is given by me or my designated representative. In my opinion the chance of that happening is very slim, but it's important to explain what needs to happen in case there is a discovery.

Sincerely,

Ted Howard, Cultural Resources Director
(208) 759-3100 ext. 1243
Cell (208) 871-7064

RESOLUTION OF THE GOVERNING BODY OF
THE SHOSHONE-PAIUTE TRIBES
OF THE DUCK VALLEY INDIAN RESERVATION

P.O. Box 219 Owyhee, NV 89832
(208) 759-3100
www.shopaitribes.org

RESOLUTION NO. 2016-SPR-014

A resolution to authorize the Shoshone-Paiute Water Resources Board and staff to apply in behalf of the Shoshone-Paiute Tribes for a 2016 Bureau of Reclamation Water Smart Grant

BE IT RESOLVED BY THE BUSINESS COUNCIL OF THE SHOSHONE PAIUTE TRIBES.

WHEREAS. This organization *is* an Indian Organization known as the Shoshone Paiute Tribes of the Duck Valley Reservation defined under the Indian Reorganization Act of June 18. 1934. as amended. to exercise certain rights of home rule and to be responsible for the promotion of cultural economic and social welfare of its tribal members; and

WHEREAS, The United States Bureau of Reclamation manages a grant program to improve
Irrigation Projects throughout the 17 Western States and

WHEREAS, The Tribes have been successful to obtain assistance from this source previously for The Walker Lane Project and.

WHEREAS, For the 2016 Water Smart Grant Program awards will start at $300,000.00 to a maximum of $1,500,000.00 and.

WHEREAS, The Tribes will shortly have access to its Water Settlement resources, and the Business Council is desirous of leveraging these resources to the maximum available, and

NOW THEREFORE BE IT RESOLVED THAT, The Business Council of the Shoshone-Paiute Tribes of the Duck Valley Reservation approves and authorizes staff with writing assistance from Dick Larsen to apply for the 2016 Water Smart Grant through the Bureau of Reclamation for the purposes of improving the Duck Valley Irrigation Project, and

BE IT HEREBY FURTHER RESOLVED THAT, Authorization is granted for the commitment of Tribal Resources of In-kind and or matching funds from the Duck Valley Water Settlement resources, and

BE IT FINALLY RESOLVED THAT, the Chairman of the Business Council or his designee is authorized to sign all related documents in the implementation of this grant and activities related there to.

CERTIFICATION

It is hereby certified that the Shoshone Paiute Business Council is composed of 6 Council Members and a Chairman of whom 5 Council Members constituting a quorum and a Chairman were present at a meeting held on the 2nd day of December, 2015, and that the foregoing resolution was adopted by an affirmative vote of 4 FOR, 0 AGAINST and 1 ABSTENTIONS pursuant to the authority contained in Article VI, Section 1(r), of the Constitution of the Shoshone Paiute Tribes approved April 20, 1936.

LINDSEY W. MANNING, Tribal Chairman

SANDRA SMITH, Acting Secretary

Table 1. Summary of non-Federal and Federal funding Sources

Funding Sources	Funding Amount
Non-Federal entities	
1. Duck Valley Water Resource Board	$487,751
Non-Federal subtotal:	$487,751
Other Federal entities	None
Other Federal subtotal:	$0
Requested Reclamation funding:	$300,000
Total project funding:	$787,751

Duck Valley Irrigation Project
Water Conservation and Management Improvement Project

Additional List of Project Congressional Districts

The Duck Valley Indian Reservation is located astraddle the Idaho-Nevada state boundaries and includes lands in both states. The Idaho element of the reservation is part of Congressional District ID-01 while the Nevada element of the reservation is part of Congressional District NV-02.

Duck Valley Indian Reservation
1008 Idaho State Highway 51,
Owyhee County, ID 83604

Phone – (208) 759-3100 ~ Fax – (208) 759-3103
E-mail – heaps.dennis@shopai.org

WaterSMART – Water and Energy Efficiency Grants FY 2016
Funding Opportunity Announcement R16-FOA-DO-004

Tribal Water Conservation and Management Improvement Project

A Project To Greatly Improve Water Management and Conservation by:

- **Installing SCADA Flow Automation Devices on Three Irrigation Canals**
- **Lining 3.5 Miles of Open Canal**

Water Resource Department of the Duck Valley Indian Reservation
Owyhee, Owyhee County, Idaho
Dennis Heaps, Director

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Technical Proposal and Evaluation Criteria

Executive Summary

31 December 2015, Duck Valley Indian Reservation, Owyhee, Owyhee County, Idaho

The Shoshone and Paiute Tribes united at Duck Valley under the Indian Reorganization Act of 1934 and formed a tribal government through a Constitution and Bylaws which was adopted in 1936.

The Shoshoni and Paiute Tribes (the Tribes) have water delivery authority for 12,900 acres of farmlands on the reservation, involving tribal lands in both Idaho and Nevada. Approximately 1,200 tribal members people live in the general project area which also includes more than 300 farm units of 40 acres or more directly served by the DVIP.

The proposed project is an element of a comprehensive five-year water irrigation development plan formulated by the Water Resource Board of the Duck Valley Indian Reservation which oversees the Duck Valley Irrigation Project (DVIP). The project will be managed and administered by the Duck Valley Water Resource Department an entity under the supervision of the five-member Water Resource Board.

To fully understand the positive impacts of these improvements, both near and long term, it is best to put the project into the real world context of irrigation water operations on the DVIP.

To begin with, there does not currently exist a uniform, formalized system of water measurement at lateral canal headgates in the irrigated lands served by the irrigation project. The present system is a hap hazard process in which water is turned into the lateral canals in an amount based on anticipated needs of the users at the times.

This creates the situation where the volume of water in the laterals constantly fluctuates between too much and too little based on the overall demand because there is no real time evaluation of how much water is needed to maintain a constant flow to the delivery points. Consequently, in an after-the-fact water management process, project employees are constantly forced to drive to the canal head to either increase or decrease the flow.

The result is a boom or bust water management process that creates water wastage due to oversupply spills both at delivery points and at the canal end or a lack of sufficient delivery point supply due to a too low flow condition.

The Water Resource Board's five year improvement plan addresses the need to develop and implement an effective method that will minimize or eliminate the waste flow at the end of the delivery system caused by the lack of coordinated control and measurement.

To this end, the improvements to be made in this project represent the first step in the process of implementing the Boards five year improvement plan.

The project incorporates three specific key points in the five-year system rehabilitation plan.

First is the development of a SCADA (supervisory control and data acquisition) system by automating the head of all DVIP canals and laterals. The goal is to reduce operation spills and the subsequent loss to the system of irrigation water by using automated control devices to maintain constant water flows on the affected canals.

This addresses a serious water management issue which results in a constant over charging or under supplying of canal water that takes place but which goes undetected until changing water levels are noticed. When detected, the Watermaster must drive to the head of the

canal and manually adjust the headgate. The lag time between detection and correction results in a regularly overcharged canal with the resulting spill loss or an undersupply which can seriously handicap the individual water user. The actual spill loss has not been physically measured but is estimated by the highly experienced project manager to result in the loss of a minimum of approximately 2,500 acre feet of water over a typical 160-day irrigation season. This SCADA project will serve to end this boom or bust water management cycle and serve as an initial foundation to implement that step in the Board's goal of automation..

The creation of a SCADA infrastructure on the DVIP also supports another key goal of the five-year plan: creation of an effective water measurement process operated by well-trained tribal watermasters. Accurate water measurement has not been employed in the DVIP since its inception. The SCADA system provides the foundational infrastructure that will serve as the core element of a new, analytical approach to water measurement, management and conservation.

The final key point is the DVIP's plan to enclose all laterals that carry a volume of 15 cubic feet per second (CFS) or less. This is designed to reduce loss of water due to seepage and evaporation, especially in high seepage loss areas of the system.

The lining of one lateral canal that suffers from the Project's highest rate of seepage loss is the first step in that process. The lining will result in an estimated conservation of up to 2,000 acre feet of water annually.

The project plan envisions a 61.9% ~ 38.1% mixture of local and Federal dollars for a two-year program on Duck Valley tribal lands. The goal of the project is divided into two distinct work elements:

- Part 1: to install automated canal flow control structures at the head of the West Main Canal, the River Canal (also known as the 22 Canal) and the Thacker Canal.
- Part 2: to line approximately 3.5 miles of the River Canal, starting at its head and extending to a point near where it enters the West Main Canal.

The end result will be a vastly improved automated water management system that will eliminate canal flow stability problems inherent in the irrigation system due to the lack of water measurement capability coupled with antiquated head structures currently used. The automated flow controls, coupled with water savings from the canal lining will yield a total estimated annual water savings of up to 6,000 acre feet of irrigation water. When completed, the project will also provide Duck Valley with the foundational infrastructure to launching an accelerated enhanced water measurement and system management program for tribal water masters.

The entire project will be completed by the end of calendar year 2018. Work will commence October 2016 and be completed by October 2018. Note that work must be done when the canals are empty and individual water users are outside of the growing season. This binding condition therefore restricts construction to the non-irrigation season, October through April.

This grant application will be a cooperative funding process with a total project cost of $787,751. Of that, $487,751 will be provided by the applicant and combined with $300,000 in WaterSMART grant funds from the Bureau of Reclamation (BoR). This translates to a funding mix of 61.9% local dollars and 38.1% Federal dollars.

Local funding will be provided by the Duck Valley Water Resource Board in the form of manpower, equipment and miscellaneous supplies etc., for the purchase and installation of the three SCADA automated canal flow devices and equipment. DVIP will also provide equipment, manpower and approximately 8,500 feet of composite geotextile lining material for the canal lining project.

The Federal funds requested will be used exclusively to purchase approximately 10,000 feet of composite geotextile lining material required to fully complete the lining of 3.5 miles of the River Canal.

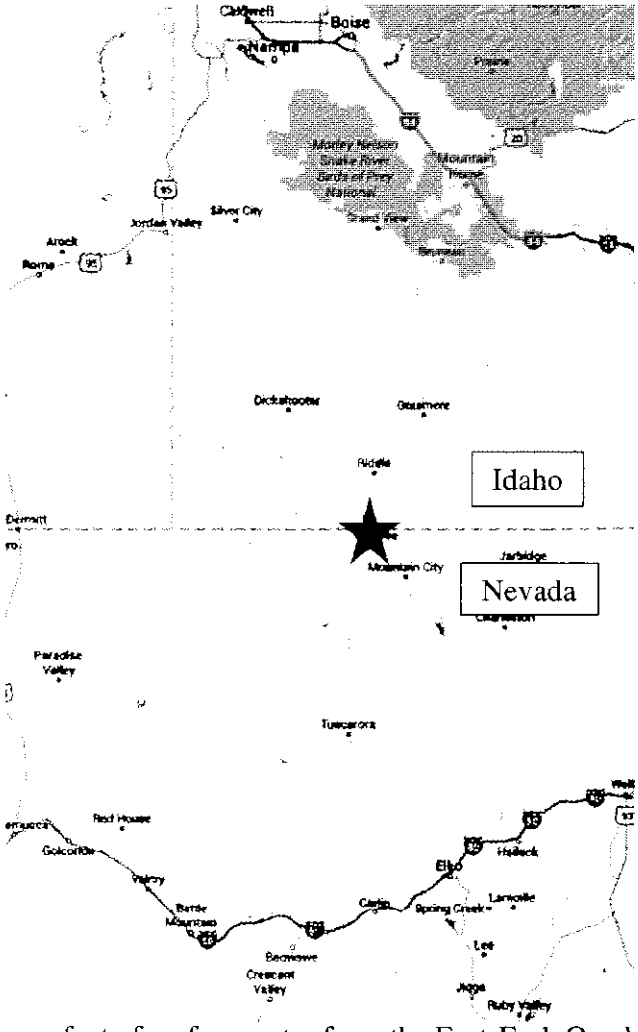
A specific series of actions over a 24-month time frame of the project will be required to complete the project. The plan is to install the automated canal flow equipment during Year 1, the period October 2016 – April 2017, and the lining during Year 2, the period October 2017 – April 2018.

However, if it is feasible and achievable, both parts of the project will be completed in the period October 2016 through April 2017.

The project area is not located on a Federal facility, but rather on Duck Valley Reservation lands belonging to the Shoshone/Paiute Tribes.

Background Data

The project area (see illustration) is located within the boundaries of the Duck Valley Indian Reservation which is located on both sides of the Idaho-Nevada border.



The reservation occupies approximately 450 square miles in Idaho and Nevada and is approximately 22 miles long and 20 miles wide, 145,545 acres of which are in Idaho and 144,247 acres in Nevada.

Specifically the Duck Valley project is located on a high desert plain 5,500 feet above sea level in Elko County, Nevada and Owyhee County, Idaho about midway between the cities of Elko, Nevada and Mountain Home, Idaho.

The reservation is primarily an agricultural based economy. Crops generally grown on the reservation are pasture, hay and various grains. Ranching is another source of income to tribal members with cattle and horses

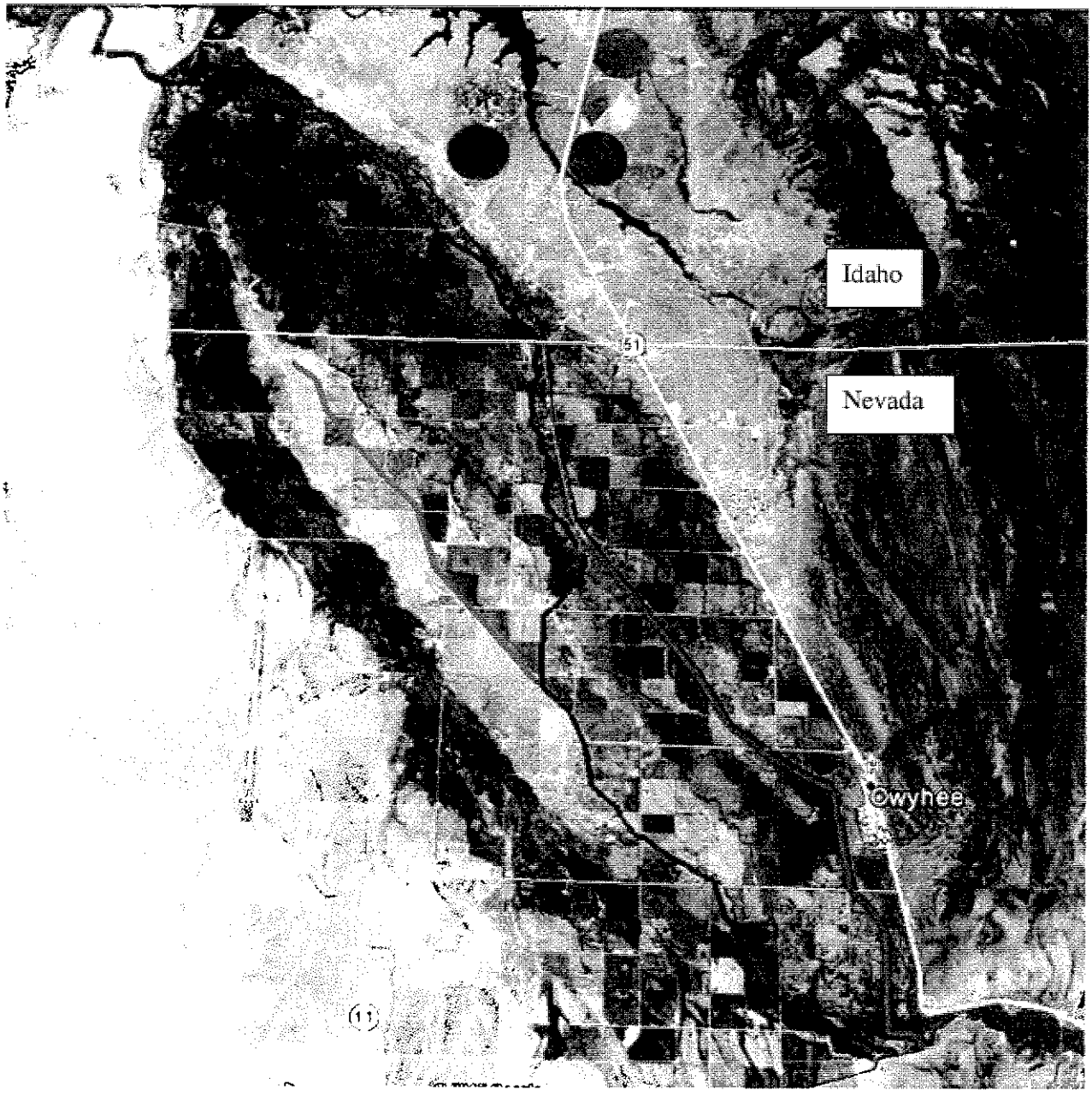
The Duck Valley Irrigation Project serves approximately 2,300 tribal members who farm and ranch on about 12,900 acres of irrigated land. There are more than 300 farm units of 40 acres or more.

Lands on the farm units are irrigated from the natural flow water of Owyhee River East Fork and water stored behind the Wild Horse Dam located on the East Fork of the Owyhee River in Elko County.

The Tribes have the right to 111,476 acre feet of surface water from the East-Fork Owyhee River basin; 2606 acre feet of ground water within the reservation boundaries; and the entire flow of all springs and creeks originating within the interior of the reservation.

The Duck Valley Irrigation Project has a priority date of April 16, 1877 with a period of use from January 1 through December 31 of each year. Annual total irrigation water use by the Duck Valley is approximately 50,000 acre feet of natural flow and storage water.

General Project Location



West Main Canal

River Canal

Thacker Canal

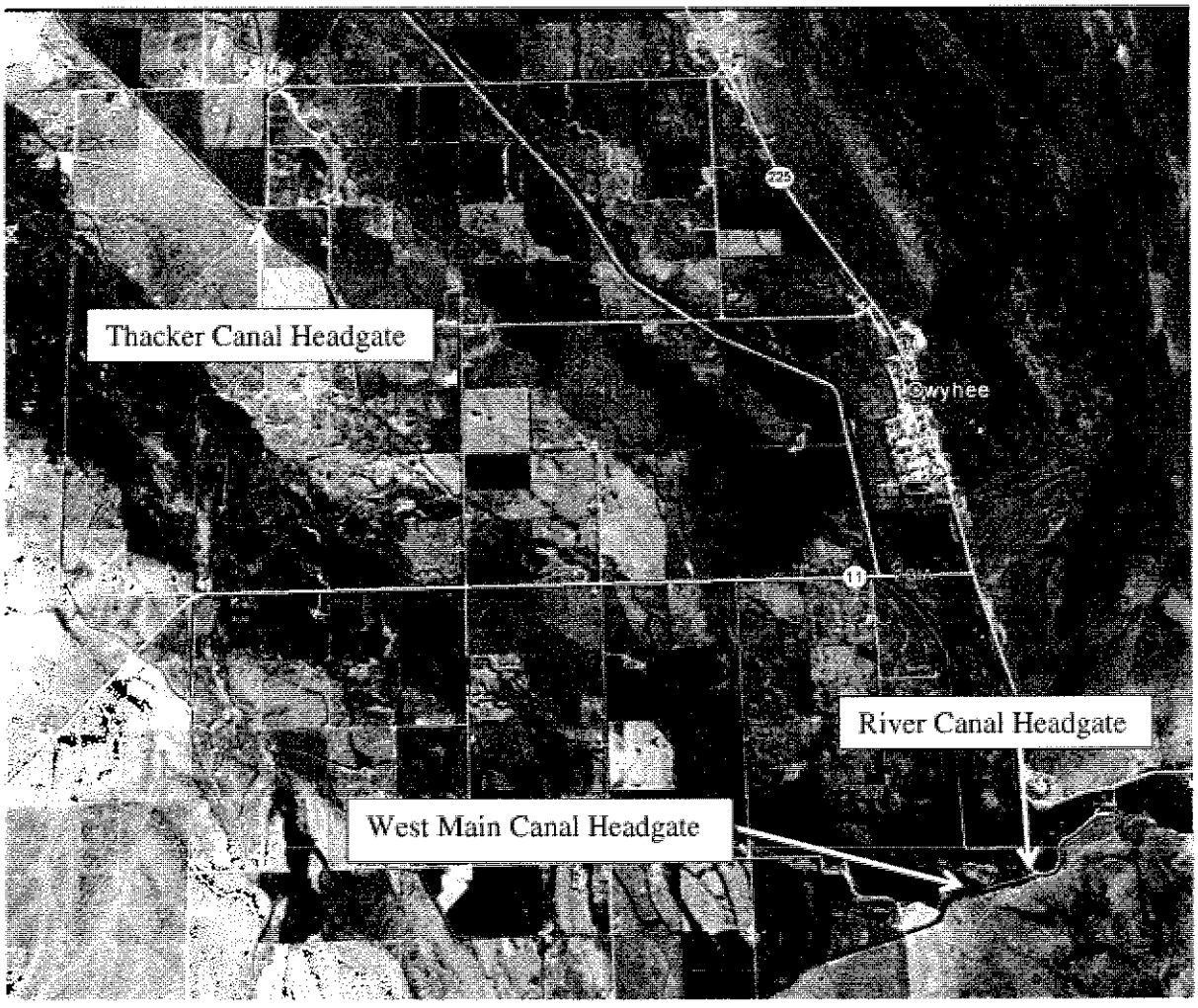
The DVIP serves lands in both Idaho and Nevada. The locations where physical work will be done on the project are all located in the Nevada portion of the DVIP. However, in the case of the West Main Canal, the project work done in the Nevada portion will also result in water management improvement in the Idaho portion of the project area.

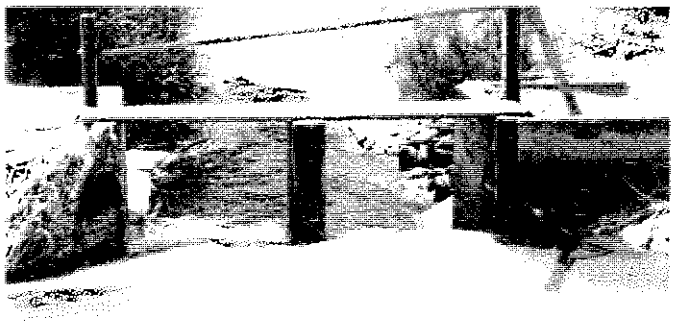
Owyhee River irrigation water is diverted from the river into the Highline Canal, DVIP's primary supply canal at a river diversion approximate 1.75 miles south of Owyhee, Nevada.

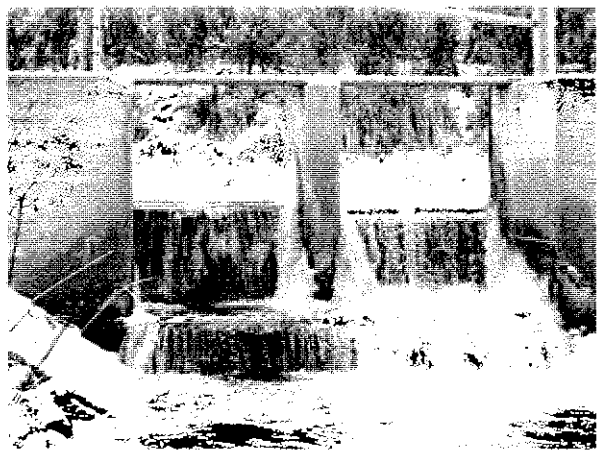
The West Main Canal draws its water from the main supply canal and then flows northwest across the project for 10.6 miles supplying water to 191 water delivery points including 16.8 miles of lateral and sublateral canals.

The Thacker Canal is one of the lateral canals served by the West Main Canal. It is 4.3 miles long and serves 98 water delivery points including 8.1 miles of laterals and sublaterals.

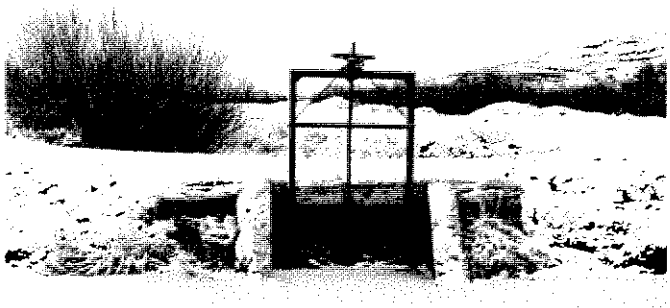
The River Canal also receives water from the main supply canal at a headgate about ¼-mile away from the West Main Canal. The River canal is approximately 4.8 miles in length and serves 77 water delivery points including 4.2 miles of lateral canals. Below are the locations of the three headgates involved in the project.

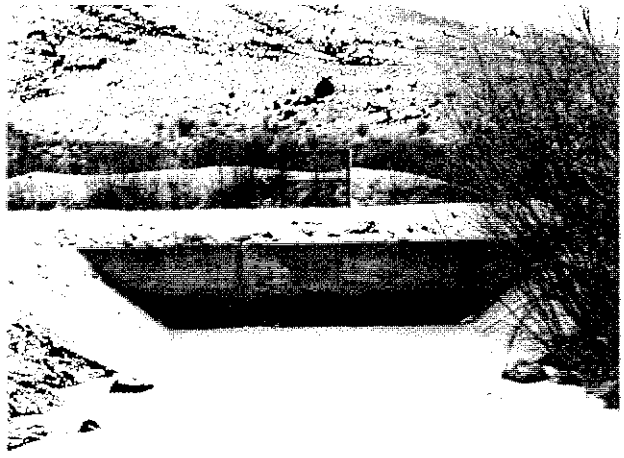




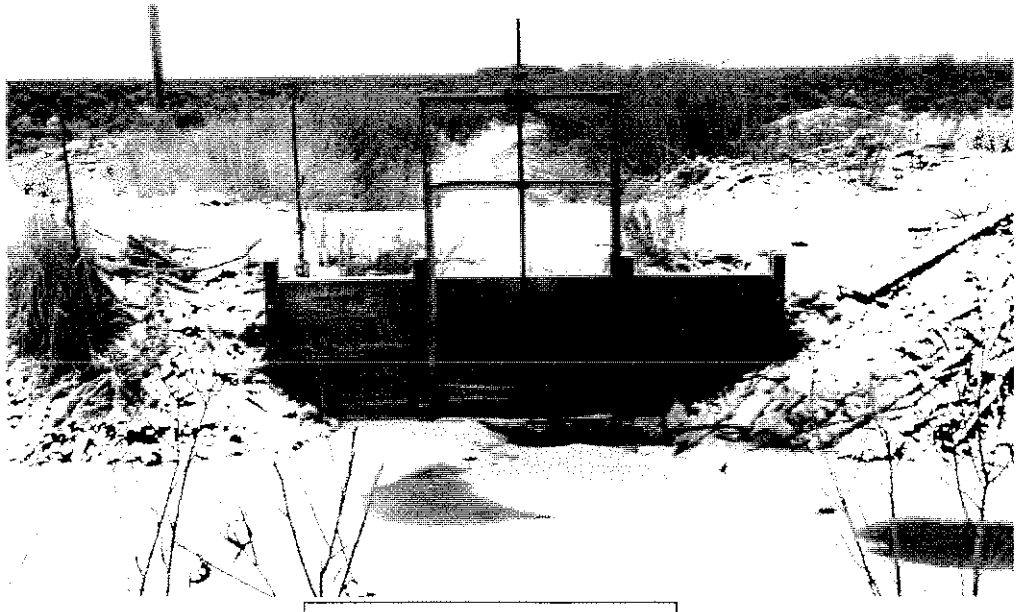


West Main Canal Headgate





River Canal Headgate



Thacker Canal Headgate

Technical Project Description

The overall goals of the project are water conservation, enhanced water measurement and management, and launching the development of a SCADA based irrigation water delivery system to provide the infrastructure of a project wide water measurement system operated by trained watermasters and ditchriders.

This goal is to be achieved in two phases:

- The first phase is to install new SCADA-based headgates on the three canals so that constant canal flows based on water measurement can be maintained.

This will require the purchase and installation of the automation elements on three headgate structures. This project will be done starting in October 2016 with an estimated completion date of April 30, 2017 in time for the start of the irrigation season.

The SCADA systems on the three canal headgates will be installed in a three part process that will start at the end of the irrigation season. All work will be done by DVIP personnel under the direction of the Water Resources Department manager who has extensive, first-hand experience in the installation of automated headgate devices.

First, the headgate structures themselves will be evaluated, modified, refurbished or rebuilt as necessary.

The West Main Canal headgate is an open stoplog bay. The center pier will be removed and replaced with a Langaman style bi-fold headgate equipped with a sharp crested weir for accurate water measurement.

The River Canal Headgate is a concrete structure with a manual screw type gate. This gate will be actuated with downstream telemetry with a rated canal section for accurate water measurement.

The Thacker Canal Headgate is a wooden structure on the face of a 36-inch pipe that passes under a maintenance road. The gate uses a screw type rod with a wheel that is turned manually to raise and lower the metal covering on the opening of the pipe. The headgate will be replaced with a new concrete structure to accommodate a new bi-fold Langaman type headgate with a sharp crested weir for accurate water measurement.

Second, the automated equipment, including solar power devices will be installed on the three headgates.

Third, the SCADA systems will be activated, tested and adjusted as needed then .telemetered to the DVIP main office

Solar panels and batteries will be installed at each SCADA headgate to supply the necessary electrical power to operate the system.

All work will be under the direct supervision of the Water Resources Department Director who has extensive firsthand experience in the siting, preparation and installation of Langaman bi-fold gates and automated SCADA operations. The cost of the equipment includes the on-site services of a technician who will monitor the process, do all final wiring and then performance proof and commission each headgate installation.

- The second phase of the project will be the lining of approximately 3.5 miles (18,500 feet) of the River Canal. This phase of the project is where the use of Federal funds will be involved through the purchase of lining materials.

The River Canal accounts for the DVIP's greatest loss of water due to seepage particularly in areas where the canal is in close proximity to the Owyhee River.

Work on the canal lining will begin in October 2017 following the conclusion of the 2017 irrigation season. Completion of the lining project is planned to be finished by April 30, 2018. All lining work will be done by DVIP full-time or temporary employees using equipment and materials owned by DVIP or rented from private sector companies. The lining material will be purchased from a private sector firm.

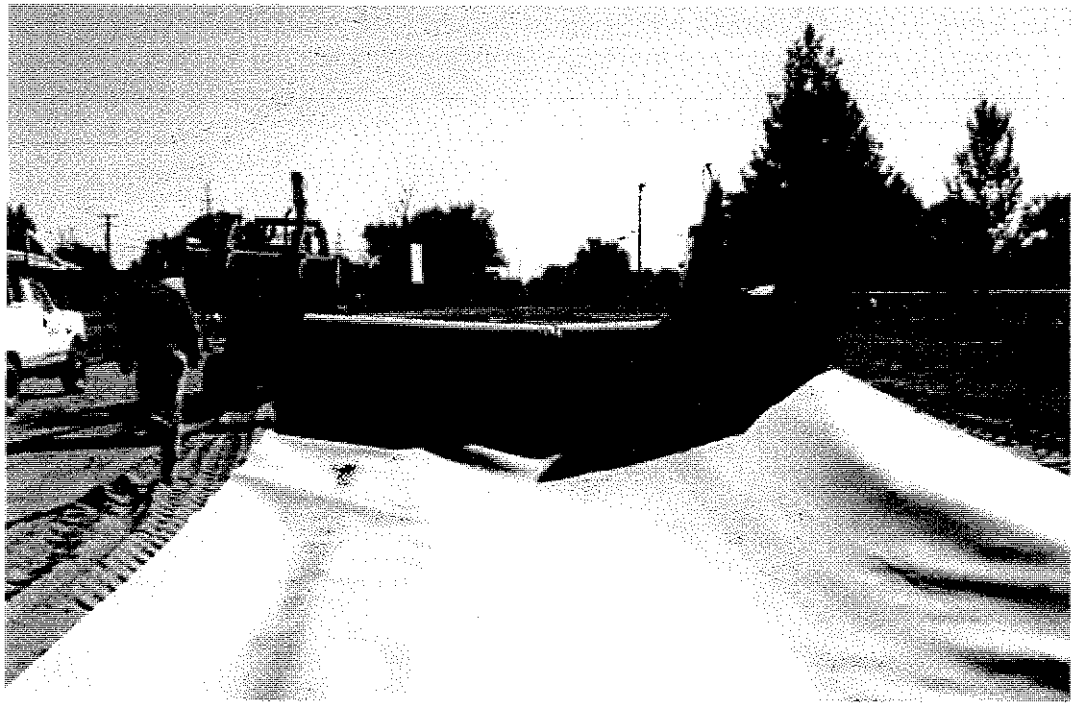
The canal will be lined with a geocomposite geotextile that consists of two (top and bottom) polyester nonwovens bonded to a 20 or 30 millimeter polyethylene geomembrane. The geocomposite liner is inert to biological degradation and naturally encountered chemicals, alkalis and acids.

The general installation process will be as follows (photos are representative only and do not show DVIP lands):

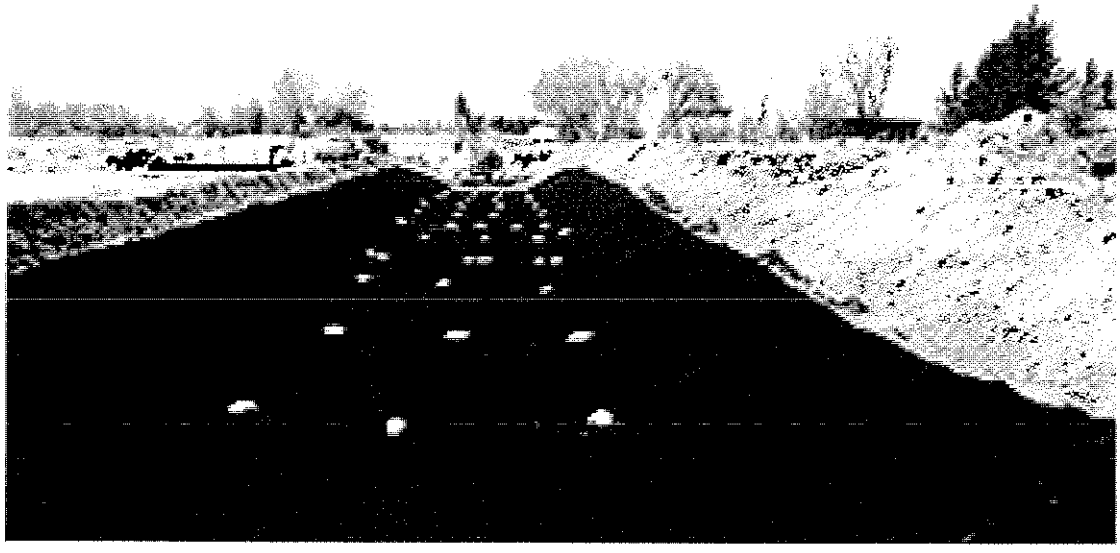
1. A side-blade scraper or other bladed piece of equipment would be used to reshape the sides of the canal to remove any large rocks, vegetation, etc. The scraper would also be used to level the canal bottom to provide a uniformly flat surface on which the lining would rest.
2. A back or track hoe would be used at the head and end of the canal to cut trenches across the canal from one side to the other to create an anchor trench for both ends of the lining in which the lining is secured to prevent water from migrating beneath the material.

After the sides and bottom of the canal have been shaped, a track hoe will be used to dig anchor trenches on the top of both sides of the canal to serve as anchor trenches where the side edges of the lining will be placed and then buried under backfill soil.

3. After the sides and bottom of the canal has been prepared, the canal lining will be installed. The lining comes in 17-feet rolls containing 360 feet of lining material. A roll of liner would be suspended from the backhoe boom over the canal and then be unrolled by workers and smoothed into place on the canal sides and bottoms as the track hoe moves forward. The lining is secured with weights until rolls can be sealed together with adhesive.



After the roll of the lining is smoothed and properly positioned on the canal, a new roll is lowed into place with the track hoe and unrolling begins again. The the end of the roll of installed lining is then attached to the start of the next roll by means of adhesives to create a water tight seal between the two layers of lining. This installation-sealing-installation process continues until the entire length of lining is in place and secured on both ends with the cement filled anchor trenches.



4. Attachment to any existing concrete structures will be made using aluminum or stainless steel batten strips with anchor bolts.
5. The final step is to backfill soil in the top anchor trenches to secure the tops of the canal lining sides and then turn water into the canal.

It is estimated that reshaping of the canal sides and bottom would require four to six weeks to be completed before liner installation begins.

Liner industry reps have advised that, depending on manpower, parallel installation is relatively quick with it being not uncommon for about 1,800 feet of liner (5 rolls 17' wide by 360 feet long) to be installed in a day, including the seaming.

If that holds in the case of the DVIP project, the reshaping and liner installation process will require approximately eight total weeks. However, late fall weather in the geographical area of the project work is unpredictable and could cause delays in any set installation schedule.

Another installation process option is for canal shaping and liner installation to be done simultaneously. However, given the available in-kind manpower availability, that option would substantially reduce the daily amount of lining being installed and would end up requiring approximately the same total amount of time. The project manager will determine at the time work commences which of the two options will work best.

All work being done on both phases of the project will be under the continual supervision and review of the Water Resource Department Director. He will specifically allocate as in kind services a set number of his paid working hours to serve in the capacity as project manager. Additional review and final project approval will be done by the Water Resource Board of Directors..

Evaluation Criteria

A. Water Conservation

A.1: Quantifiable Water Savings:

The Duck Valley Irrigation Project holds total water rights of 111,476 acre feet of East-Fork Owyhee River surface water. Annual total irrigation season water use for the DVIP is approximately 50,000 acre feet.

DVIP has a total of 56.1 miles of main supply canals and 54.4 miles of lateral and sublateral canals. The three specific canals involved in the project account for 19.7 miles of supply canal and 29.1 miles of lateral and sublateral canals.

The central water wastage is a byproduct of difficulties with constant flow levels on the three project canals. Those difficulties results in the Highline Canal, DVIP's main supply canal, being constantly adjusted to meet the over and under water supply demands of users on the three project canals.

When a project canal suddenly demands extra water, the Highline Canal must then be surcharged to meet the increased demand and still meet the needs of other lateral canals it serves. This surcharging accounts for increased diversion of East Fork Owyhee River natural flows or releases from DVIP storage water in Wild Horse Reservoir.

Conversely, when the project canals demand drops without warning, the Highline Canal unsurprisingly ends up being overloaded with too much water which results in wasted water on the Highline in the form of tail end spill. That unnecessary loss of water is not accounted for in the conservation estimates, but does occur due to the water management process as it now exists.

This constant over-under water flow situation on the three project canals water consequently produces a detrimental water management situation that envelopes the entire irrigation project. The increased flows in the three canals extend beyond the demand period of the users

There is a secondary impact of the water management process as it now stands. The Highland Canal also supplies water from the Owyhee River drainage to Sheep Creek and Billy Shaw Reservoirs on reservation lands. These two reservoirs, along with a third reservoir also fed water from the East Fork Owyhee River, are home to world-class fisheries which are crucial tribal economic sources of income from off-reservation visitors who pay purchase recreational and fishing permits.

The inability to maintain balanced and consistent flows of water to the reservoirs poses a long range potential impact to the fiscal well-being of the Tribes and their members. Both water levels and the impact of hot summers on water supply temperatures are potential threats as a result of the boom-bust cycles on the project canals.

The installation of SCADA flow management controls at the head of the three project canals will eliminate the problem by keeping canal flows at a consistent level through regulated flow increases or decreases that can be implemented immediately based on real-time conditions rather than waiting until the over or under flow levels are noticed by users, the watermaster is notified and can physically travel to the specific headgate to physically make adjustment in canal flow rates.

In a broad sense, the SCADA system will save wasted water not only on the project canals but will help reduced wasteful diversion from the water source. Therefore, the water saved can remain in the East Fork Owyhee River available for use when truly needed by other users in the DVIP or water users in the downstream reaches of the East Fork Owyhee River.
As explained in the executive summary, the lack of proper water measurement throughout the DVIP makes it difficult to provide specific, quantifiable water savings figures.

Therefore, the water conservation savings figures represent and rely on a good faith, conservative-based best estimate by the DVIP manager, a highly experienced water management individual with more than 40 years of experience in both large and small irrigation projects. The estimates are also based on the observed water operations over the course of numerous irrigation seasons.

Additionally, technical information supplied by the liner industry indicates that seepage loss on a lined canal typically is reduced to less than 5%. This has been used to estimate specific seepage loss on the River Canal which flows at 100 CFS for the entire irrigation season and 30 CFS of stock water amounting to approximately 250 days per year..

Therefore, irrigation season water savings have been best estimated at:

- 3,000-4,000 acre feet per year from the SCADA headgates installation on the three canals due to: sharp curtailment of water wastage due to tail end spills from overcharged canal flows; and reduction of unnecessary withdrawals of storage water from Wild Horse Reservoir due to the unpredictable and constant demand for additional water need to restore adequate user demand flows in the canals.
- 1,500-2,000 acre feet per year resulting from reduced seepage losses on 3.5 miles of the River Canal due to lining.

Accordingly, the best good faith estimate, in the absence of any historical physical measurement data, is that there will be a total annual overall savings of 4,000-6,000 acre feet of irrigation water post project completion.

Those figures could increase once the accurate water measurement process is in place and specific figures can be compiled. That scientific measurement process will be implemented starting with the 2018 irrigation season when the project is complete. Intensive water measurement training will be provided to DVIP watermasters during the project construction phase to prepare them for implementation of the new measurement regimen.

Equally significant, the current water losses have an effect on the main supply canal from which two of the three project canals draw their supply. Both the West Main and River canals draw their supply from the Highline Canal, DVIP's main supply canal while the Thacker Canal draws its supply from the West Main.

Any unnecessary loss of water is frequently problematic for the DVIP because of climatic conditions in the Duck Valley Reservation region. The DVIP is located in a high desert plan with average annual precipitation of just 14.78 inches, predominantly during the winter months in the form of rain and snow.

In the first half of the 1900s, Duck Valley frequently suffered devastating drought conditions which decimated natural flow conditions on the East Fork Owyhee River. In 1936, construction of Wild Horse Dam and Reservoir created a storage water reserve that mitigated the limited natural supply of water. But the fact of the matter is that the Tribes' entire agricultural economy is fully dependent on there being an adequate water supply available to meet the needs of the entire irrigation season. Therefore, any waste of water, no matter how small, is a matter of high concern for the Tribes. The five-year plan for improvements and water measurement implementation is a proactive move by the Tribes to help alleviate this concern.

The irrigation improvements from this project also are a crucial first step in a forward looking effort by DVIP to prepare for future water challenges that climate change will produce.

With the understanding that first priority use of the conserved water will be to ensure full deliveries within the entire NSPC system in times of shortage or as needed, the water saved thus provides a water management asset in a variety of ways:

- During periods of drought, the conserved water can be reallocated as needed by the DVIP to improve individual farm unit quotas and protect crop production within the area of operations;
- The conserved water potentially can be made available for use by other entities such as downstream irrigation districts, recharge projects, flow augmentation for endangered species recovery, enhancement of reservation fisheries, etc.

Additionally, the switch to SCADA canal headgates is expected to significantly reduce the chances of unintentional over delivery to individual users. That contrasts to the rather haphazard common supply user managed process that has been used for decades without any science based water measurement. Just how much those savings might be cannot be determined until the DVIP has several years of water use data under the new system.

Percentage of Total Supply: It is important to put into context the overall value of the water that will be conserved by the improvements to the DVIP operations. The estimated annual water savings amount to 8%-12% of the current annual irrigation use. It is anticipated that specific water measurement conducted in post project irrigation years are likely to actually show higher water savings than estimated.

While the annual water savings of this project is a modest percentage of the total water supply, it is not an understatement to say that this savings plays a far great role than the figures would suggest. It is a factual statement in both theory and practice that the management flexibility provided results in the ability to far better manage the entire yearly supply.

Presently, DVIP is frequently unable to provide sufficient water to users on the farthest reaches of the irrigation system. In some cases, these users have had to do without their authorized irrigation water due to low supply. The conserved water does not solve completely this problem, but it does provide a source of addition water to supplement during low water years.

When the conserved water is not needed by users , it can potentially be utilized in various management combinations – i.e. left in storage, allocated to users on other lateral and sublateral canals in the system, possibly made available for rental through existing water banks, released to the entire basin system, or any and all, etc. Ultimately it represents a far more effective water management for the NSPC.

To fully understand the practical water conservation impact of this project, it should be noted that the current water loss equals enough water to ensure an adequate supply of irrigation to upwards of 6,000 acres of pasture land or hay lands. That is a crucial element in the economic stability and development in an area where livestock feed, horses and cattle provide a major source of income.

The DVIP water delivery system has a designed capacity to provide 3.7 acre feet per acre of irrigable lands per season but this figure is at times unattainable due to increasing periods of drought.. The savings of up to 6,000 acre feet thus can provide a crucial measure of water supply certainty. That is hugely important in the high desert lands of the reservation where average precipitation is 14 inches, largely snow, and that historically is regularly subjected to severe drought conditions and where summer daily maximum temperatures average about 82 degrees.

Beyond just irrigated agricultural, the saved water becomes potential available for other economic development uses by the Tribes such as downstream flow augmentation for endangered species, preservation and development of recreation, groundwater recharge, future Agribusiness development such as dairies, food production, general farming, etc. These are industries totally and completely dependent upon the certain availability of water and the flexibility to make water available when and where it is most needed. Thus conserved water can ultimately also help fuel the engine of industrial development on the tribal lands.

B - Energy-Water Nexus

The project will not reduce existing energy usage because there is no electrical power being used in the project area currently. However, the headgate automation system to be installed will result in electrical energy avoidance by eliminating future electrical demand on the local electrical supply grid.

The SCADA headgate portion of the project when finished will involve the use of renewable energy technology. Solar panels and batteries will be installed concurrent with the SCADA systems on all three headgates. The use of power generated by the solar panels and stored in the batteries will provide all the electrical power needed to operate the three automated headgates.

SCADA system industry representatives have provided estimates that indicate that the systems are designed to operate on an energy demand of 250 watts per hour per automated headgate. That equates to an electrical demand of 750 watts of electricity per hour for the entire 160 day irrigation season. That translates to an irrigation season electrical demand of 2,880 kWh, all of which is avoided because solar power will eliminate any demand on the existing electrical grid.

C - Benefit to Endangered Species

The Owyhee River system, of which the East Fork is a tributary, is the home to the Redband Trout species. The Redband Trout is designated as a sensitive species by the Idaho and Nevada Bureau of Land Management and is also listed as Species of Greatest Conservation Need in Idaho and Oregon (Idaho Department of Fish & Game, 2005).

It is a well-established fact that the Federal government annually has difficulty in securing sufficient water for salmonid and other fish species recovery support. The water savings from the project would open another productive water rental source in support of those efforts.

Irrigation water is purchased on a willing seller basis or rented via water banks by the Bureau of Reclamation to supply annually at least 429,000 acre feet of water to make possible the Snake River and Colombia River downstream flow augmentation efforts required under the dictates of the increased flow strategy followed in endangered species recovery efforts.

Under the willing seller-willing buyer process currently used, the water conserved by this project, depending on conditions and if not needed by its own users, could potentially be made available to the Bureau of Reclamation by DVIP.

DVIP conserved water, when viewed in that context, has the potential to provide a direct benefit to recovery efforts for fall Snake River Chinook salmon; spring/summer Snake River Chinook Salmon; and Sockeye Salmon; all of which are Federally-recognized endangered species. It also will benefit Snake River steelhead, Bull Trout and Snake River White Sturgeon which are listed as Federally-recognized threatened species.

The conserved water can also potentially be used to assist in supporting fisheries within the Owyhee River system and on the reservation itself. The Duck Valley Reservation houses trophy-class fisheries that have been considered by the Bonneville Power Administration as potential future location for an Owyhee River species recovery hatchery. Sufficient water to maintain required water temperatures is a critical element in those on-going discussions.

It should also be noted that the availability of conserved water to be wheeled downstream through the Owyhee River to the Snake River could potentially be used for the maintenance of historic streamflow levels in the Snake River, a lynchpin in the efforts to maintain steelhead and white sturgeon habitat.

D - Water Marketing

The water conserved via this project feet creates an excellent water marketing possibility which can potentially become at some point in the future, part of the DVIP operation.

Although first priority use of any water saved would always be to meet the demands of the DVIP system users, abundant water years would potentially provide the opportunity for the water to be made available to other users via a rental bank process.

The conserved water could potentially be retained in the Wild Horse reservoir and then marketed to downstream irrigation entities or to entities or projects involving the Snake River. The availability of the saved water also would present the opportunity for a variety of situation specific water exchanges.

Should DVIP ever decide to market the conserved water, it would become an excellent candidate for a wide variety of water users in the immediate vicinity and elsewhere. Northern Nevada and Southwestern Idaho both have a long history of using simple or sophisticated rental water exchange projects to resolve one-time or ongoing water conflicts where, for example,

rented water is used to replace water taken out at some other point in the system; as mitigation for groundwater withdrawals deemed injurious to surface water users; as part of formal groundwater recharge efforts.

The water market potential exists year round; however, the primary duration of the annual water market would be April-October, the designated irrigation season. Still, the water market would be available throughout the entire calendar year since flow augmentation, water exchange projects, groundwater recharge projects, etc., are not confined to irrigation seasons.

It should also be noted that the water conserved by the DVIP also becomes available for potential inclusion in other marketing opportunities that may develop in the future.

The legal issues involved in any potential water marketing are already in place via well established procedures, rules and statutes specifically germane to water marketing practices in both Idaho and Nevada.

F: Implementation and Results

F.1: Project Planning:

This project is a key element in the five-year irrigation improvement plan developed and approved by the Duck Valley Water Resource Board..

As part of determining the best course of action, the Board and the Water Resource Department Director evaluated and established a variety of strategies to be achieved over the next five years whose goal was the conservation of water, better water management through a precision water measurement system underpinned by automated water delivery facilities, and ensuring that sufficient water is provided to all water right holders in the DVIP.

This specific proposed project presented here is the first step in meeting the goals of the Board's five-year plan. It is the initial start in developing the automation foundation for a professional water measurement system. At the same time it is a major initial step in the Boar's plans to line as many of the lateral and sublateral canals as possible to reduce water lost through seepage.

This project constitutes the launching of a plan of improvement and modernization that overcomes the inertia of an irrigation system largely unimproved since its development 80 years ago. Full support of this proposed project is perhaps best demonstrated by the approval of this project by The Governing Body of the Shoshone-Paiute Tribes, known as the Business Council.

F.2: Readiness to Proceed.

The project is ready to proceed immediately upon entering into a financial assistance agreement with the Bureau of Reclamation.

The specific project schedule was outlined in great detail earlier in this application but will generally be as follows:

- October 2016 to April 2017 - renovation of three canal headgates including the installation of new gates equipped with SCADA systems to automate operation of the headgates.
- October 2017 to April 2018 - the lining of 3.5 miles of the River canal with geocomposite geotextile lining.

F.3: Performance Measures

There are several different methods available by which post-project benefits will be determined and evaluated.

Installation of precise water measurement devices in the new headgates will provide detailed data on total irrigation season water use. At the end of the irrigation season, the total water use for the users involved in the project will be used to set a baseline annual water use record for future years.

The DVIP manager also will be able to evaluate episodic evidence from watermasters and water users of how the use of automated headgates have smoothed out the over and under flow problems that currently exist.

The canal lining will be evaluated based on water delivery records to determine the reduction in water demand due to seepage loss.

Other records are maintained detailing any of the conserved water marketed to other entities through actions such as entering the water in the water bank system, water exchanges, etc.

F.4:Reasonableness of Costs:

Total project cost, both Bureau of Reclamation and local funding is calculated to be $787,751. The annual acre feet of DVIP water conserved is 6,000 while the total acre feet of water that will be better managed will be the DVIP average annual water supply of 50,000 acre feet. Annual energy generation avoidance savings resulting from the use of solar energy is estimated to be 2,880 kWhs over the life of the project.

Based on irrigation construction industry general standards, consultation with equipment and material suppliers and first-hand practical experience with the products by the DVIP manager, the expected life of the project is estimated to be a minimum of 75 years.

G: Additional Non-Federal Funding

The total cost of the DVIP project has been calculated to be $787,751. The non-Federal funding amounts to $487,751. Non-Federal funding amounts to 61.9% of the total project cost.

$400,000
$787,751

H: Connection to Bureau of Reclamation Project Activities

1. The DVIP uses natural flow and storage water stored in a storage project built by Bureau of Reclamation project for the Bureau of Indian Affairs on the East Fork Owyhee River.
2. The project receives Bureau of Reclamation water diverted from the Owyhee River.
3. The project is not located on Bureau of Reclamation lands and does not involve Reclamation facilities.
4. The project is located within the Snake River Basin which contains several different Reclamation projects including dams, storage reservoirs and water transmission facilities such as canals.

5. The benefits from the project will contribute water to the Northern Nevada and Southwestern Idaho areas where a complex system of Bureau of Reclamation projects, facilities and water delivery and supply systems are located.

6. The water saved due to the project can conceivably help the Bureau of Reclamation meet trust responsibilities to Idaho Indian Tribes. Conserved water marketed through a willing seller – willing buyer could be used by the Bureau of Reclamation to meet Snake and Columbia tribal trust obligations should the Bureau of Reclamation choose to do so.

Environmental and Cultural Resources Compliance

Under Tribal regulations, the entire scope of the project has been reviewed by the Duck Valley Tribal Cultural Department. The Cultural Department Director has determined the project will not have any cultural, historical or environmental impacts and therefore permitting is not required. A statement to that effect is included later in this application.

It is not anticipated that there will be any other environmental or cultural resources issued involved in the project. However, as a precaution, a line item entry in the project budget has been included as a precaution and to fulfill application requirements.

1. All headgate and lining work will be conducted within the existing footprint of the DVIP canal system. Work will be done when canals are empty so there will be no impact on water. A very limited amount of dirt will be removed from the canal walls and floor during shaping and creation of cross trenches during lining but the dirt will be used to level the canal floor and bury the lining in the anchor trenches along the top of the canal sides. None of the land involved is consider animal habitat.

2. DVIP is not aware of any endangered or threatened species in the project area.

3. There are no other wetlands or surface waters involved in or near the specific work areas that that currently are subject to Clean Water Act jurisdiction.

4. The water delivery system was constructed in 1936.

5. There will be modifications and effects on the existing system. New automated headgates will be installed on three lateral canals and approximately 3.5 miles of open canal will be lined with a geocomposite geotextile.

6. There are no buildings, structures or other features on or eligible for listing on the National Register of Historic Places.

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

8. The project will have no effect on low income or minority populations.

9. The entire project is located on tribal lands; however, the reservation Cultural Department has determined there are no tribal sacred sites involved in the project area.

10. The project will enhance prevention efforts involving noxious weeds. The bank shaping in preparation for lining will remove all vegetation. Then the geocomposite geotextile canal lining will prevent the germination of weeds on the sides of the canal. The result is approximately 3.5 miles of weed-free canal bank because the impenetrable lining will have eliminated the growth of certain noxious weeds typically found along open waterways.

Required Permits or Approvals

The Duck Valley Tribal Government has determined that there will be no impacts regarding this project or other parts of the project because the work will be done totally within the footprint of the existing water delivery system, all of which is located on tribal grounds.

All electrical and equipment installation will be done by licensed electricians and plumbers and will meet existing local or state construction code standards and requirements including any required inspections.

Agricultural Operations Agreement

One of the specific elements of this project will result in the conservation of irrigation water. Accordingly, and in accordance with Section 9504(a)(3)(B) of Public Law 111-11, the Duck Valley Irrigation Department hereby agrees and stipulates:

- The current 12,900 acres of lands subjugated to irrigation within the DVIP will not be enlarged with conserved water specifically resulting from the improvements associated with this project; and
- DVIP will not otherwise increase the consumptive use of water in the operation of the DVIP, as determined pursuant to the laws of the State of Nevada or Idaho.

Tribal Cultural Department Statement of Review

PO Box 219 Owyhee, NV. 89832

January 4, 2016

To: Dennis Heaps
Water Resource Director
Shoshone-Paiute Tribes

Re: Tribal Water Conservation and
Management and
Improvement Project

Dear Mr. Heaps,

Thank you for allowing me to review your proposal and grant application for this important project. This project will definitely improve the existing irrigation system in our valley. After visiting with you about this project, and reading the proposal, it is clear that all of the work on the canals and ditches will remain within the pre-disturbed footprint, there shouldn't be any impacts to any cultural resources. However, if there is a discovery of a Native American site or human remains during construction, stop all work immediately and contact my office. Work should not resume until the ok is given by me or my designated representative. In my opinion the chance of that happening is very slim, but it's important to explain what needs to happen in case there is a discovery.

Sincerely,

Teal Howard, Cultural Resources Director
(208) 759-3100 ext. 1243
Cell (208) 871-7064

RESOLUTION OF THE GOVERNING BODY OF
THE SHOSHONE-PAIUTE TRIBES
OF THE DUCK VALLEY INDIAN RESERVATION

P.O. Box 219 Owyhee, NV 89832
(208) 759-3100
www.shopaitribes.org

RESOLUTION NO. 2016-SPR-014

A resolution to authorize the Shoshone-Paiute Water Resources Board and staff to apply in behalf of the Shoshone-Paiute Tribes for a 2016 Bureau of Reclamation Water Smart Grant

BE IT RESOLVED BY THE BUSINESS COUNCIL OF THE SHOSHONE PAIUTE TRIBES.

WHEREAS. This organization *is* an Indian Organization known as the Shoshone Paiute Tribes of the Duck Valley Reservation defined under the Indian Reorganization Act of June 18. 1934. as amended. to exercise certain rights of home rule and to be responsible for the promotion of cultural economic and social welfare of its tribal members; and

WHEREAS, The United States Bureau of Reclamation manages a grant program to improve

Irrigation Projects throughout the 17 Western States and

WHEREAS, The Tribes have been successful to obtain assistance from this source previously for The Walker Lane Project and.

WHEREAS, For the 2016 Water Smart Grant Program awards will start at $300,000.00 to a maximum of $1,500,000.00 and.

WHEREAS, The Tribes will shortly have access to its Water Settlement resources, and the Business Council is desirous of leveraging these resources to the maximum available, and

NOW THEREFORE BE IT RESOLVED THAT, The Business Council of the Shoshone-Paiute Tribes of the Duck Valley Reservation approves and authorizes staff with writing assistance from Dick Larsen to apply for the 2016 Water Smart Grant through the Bureau of Reclamation for the purposes of improving the Duck Valley Irrigation Project, and

BE IT HEREBY FURTHER RESOLVED THAT, Authorization is granted for the commitment of Tribal Resources of In-kind and or matching funds from the Duck Valley Water Settlement resources, and

BE IT FINALLY RESOLVED THAT, the Chairman of the Business Council or his designee is authorized to sign all related documents in the implementation of this grant and activities related there to.

CERTIFICATION

It is hereby certified that the Shoshone Paiute Business Council is composed of 6 Council Members and a Chairman of whom 5 Council Members constituting a quorum and a Chairman were present at a meeting held on the 2nd day of December, 2015, and that the foregoing resolution was adopted by an affirmative vote of 4 FOR, 0 AGAINST and 1 ABSTENTIONS pursuant to the authority contained in Article VI, Section 1(r), of the Constitution of the Shoshone Paiute Tribes approved April 20, 1936.

LINDSEY W. MANNING, Tribal Chairman

SANDRA SMITH, Acting Secretary

Table 1. Summary of non-Federal and Federal funding Sources

Funding Sources	Funding Amount
Non-Federal entities	
1. Duck Valley Water Resource Board	$487,751
Non-Federal subtotal:	$487,751
Other Federal entities	None
Other Federal subtotal:	$0
Requested Reclamation funding:	$300,000
Total project funding:	$787,751