WATERSMART FY2018:
WATER AND ENERGY EFFICIENCY

CAMPBELL CANAL WATER CONSERVATION PROJECT
Phase 1

FOAN: BOR-DO-18-F006

CFDA: 15.507

FEDERAL FUNDING REQUEST: $ 82,272

Mason Valley Conservation District
215 West Bridge Street, Suite 11A
Yerington, NV 89447
Ed Ryan, Project Manager
Paul.ryan@nv.nacdnet.net
(775) 463-2265 x 106

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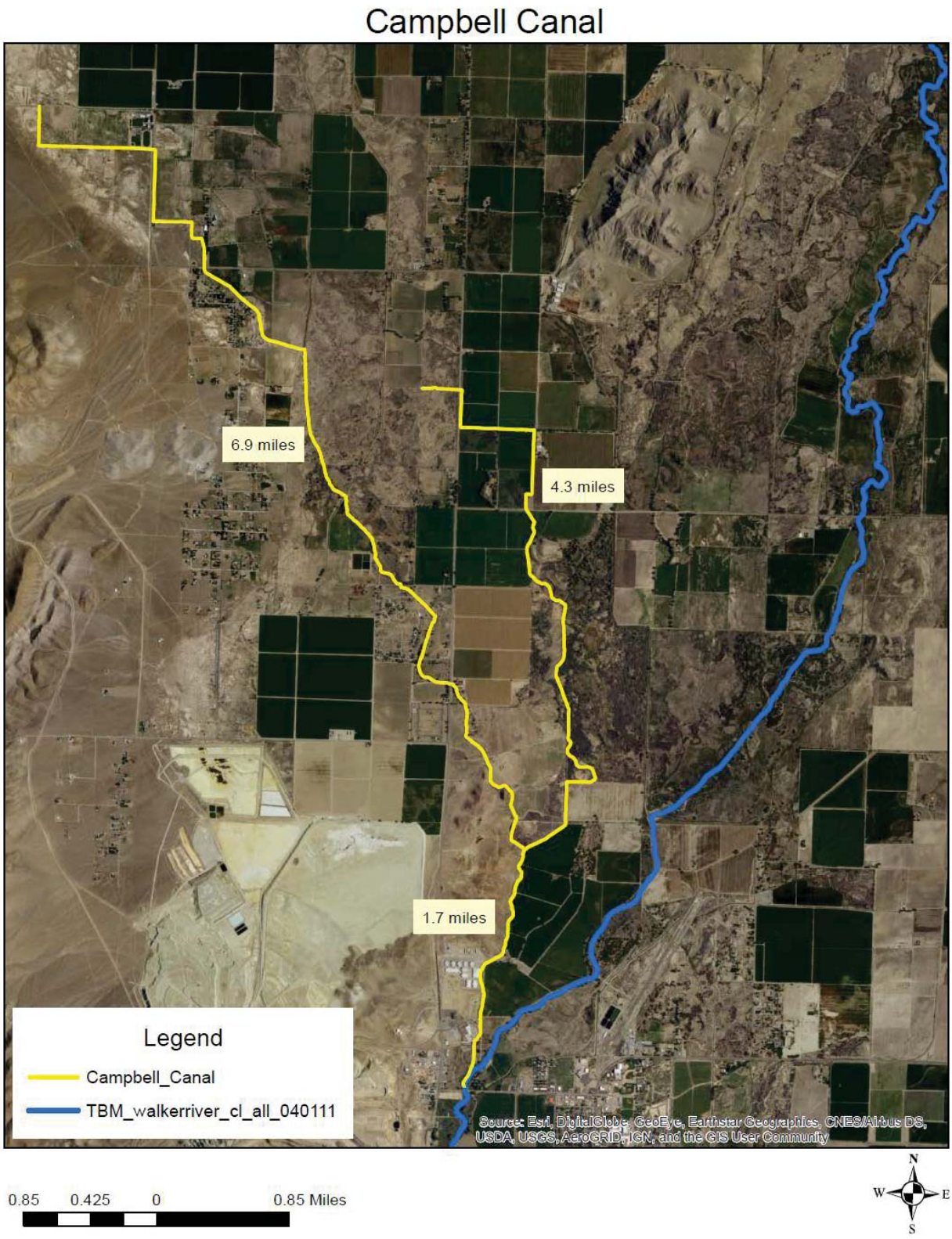
EXECUTIVE SUMMARY

May 2, 2018
Mason Valley Conservation District on behalf of the Campbell Canal Company
Yerington, Lyon County, Nevada

Mason Valley Conservation District (MVCD), located in Nevada's Walker River Basin, is requesting funding for a water conservation project under the FY2018 WaterSMART Water and Energy Efficiency Grants Funding Group I. Mason Valley Conservation District is requesting $82,272 in federal funding that will be matched with $82.500 of non-federal funds using monetary match and in-kind goods and services. The proposed water conservation project has been titled the Campbell Canal Water Conservation Project (Project). This Project is intended to document water loss and determine methods to curtail these losses. MVCD also intends to increase water delivery efficiency along the Campbell Canal by replacing the gate structure at the junction of the East and West Campbell Canals, install data loggers for continuous flow monitoring and tracking, and install takeout gates that are controlled by a Supervisory Control and Data Acquisition and Automation (SCADA) system. Upon completion, this project will yield more accurate water delivery data, decrease water loss due to improved efficiency, improve data collection and documentation in the project area, and improve instream conditions for water quality concerns. The Campbell Canal Water Conservation Project will not involve property in or near any Federal facility. The Project will begin November 2018 with an estimated end date of September 30, 2020.

BACKGROUND DATA

The Mason Valley Conservation District (MVCD) was created in 1938 and operates under the authority of Nevada Revised Statute 548. MVCD encompasses approximately 3,062,400 acres in Lyon and Mineral Counties, Nevada. The Campbell Canal is owned, operated, and governed by the Campbell Canal Company which incorporated on March 20, 1929. The canal begins just north of the Goldfield Avenue Bridge over the Walker River in Yerington, Nevada. The water supply for the Campbell Canal comes from the main stem of the Walker River, managed by the



Campbell Canal, 1 mile west of Yerington, Lyon County, Nevada

Walker River Irrigation District (WRID). The main stem of the Walker River is fed from the West Fork of the Walker River, including Topaz Reservoir, and the East Fork of the Walker River including Bridgeport Reservoir. The Canal has 7,868 water righted acres along its entirety with 30 water right users, six of which were served during the 2016 irrigation season, and 11 during the 2017 season. The Canal users utilize 36 gates to direct irrigation water onto their farms and ranches. Many of these farms and ranches are being operated by multi-generational families. These farms depend on accurate and appropriate water delivery to aid in their success. Success in the farming/ranching industry depends on the availability of water, and efficient use of that water. The region has experienced five years of drought conditions in recent years, as reported by the U.S. Drought Monitor. During the 2016 irrigation season, 14,902 acre feet of water were requested to be delivered to users along the canal, and in 2017, 33,242 acre feet were delivered. Monitoring throughout this irrigation season showed up to a 40% water loss due to seepage & evaporation on a number of irrigation days; whereas the average daily water loss was estimated to be only 30% per the Nevada State Engineer (NSE) Office. Losses of any magnitude are detrimental to the accuracy of water delivery and efficiency of water use. With current litigations and drought conditions in effect until this year, the demand for water downstream is expected to increase. Inaccuracy of water delivery and inefficiency of water use is detrimental to the ecosystem of the Walker River Basin, and water conservation efforts are imperative to the symbiosis of the cultures within the basin. Major farm crops along the Canal include grass hay, alfalfa, grains, onions, and other assorted vegetables. Cattle, sheep and horse ranching are also predominant in the area. Many users have made on-farm adaptations, including crop changes, in order to be successful in enduring the drought and to decrease water usage for the benefit of all. The main Campbell Canal is approximately 1.7 miles of canal which then splits into the East (East) and West (West) Campbell Canals. The East continues on for 4.3 miles and the West goes another 6.9 miles totaling 12.9 miles combined. In 2017, WRID and Bureau of Reclamation (BOR) using Desert Terminal Lakes funding, worked together to install solar powered head gates and electronic equipment to modernize the operation of the Canal. Supervisory Control and Data Acquisition (SCADA) systems were installed to operate the head gates and to collect water measurements for data analysis. The WRID Water Gauge Improvement and the Desert Terminal Lakes projects are an example of a successful working relationship between WRID and BOR and demonstrates the ability of WRID to appropriately utilize federal funds and complete timely and accurate reports.

PROJECT LOCATION

The Campbell Canal is located in Lyon County, Nevada, approximately one mile northwest of Yerington, Nevada. The project location along the canal is 1.7 miles from the Campbell Canal headworks on the Walker River at Latitude 39.02^{o}N, and longitude 119.17^{o}W.

TECHNICAL PROJECT DESCRIPTION

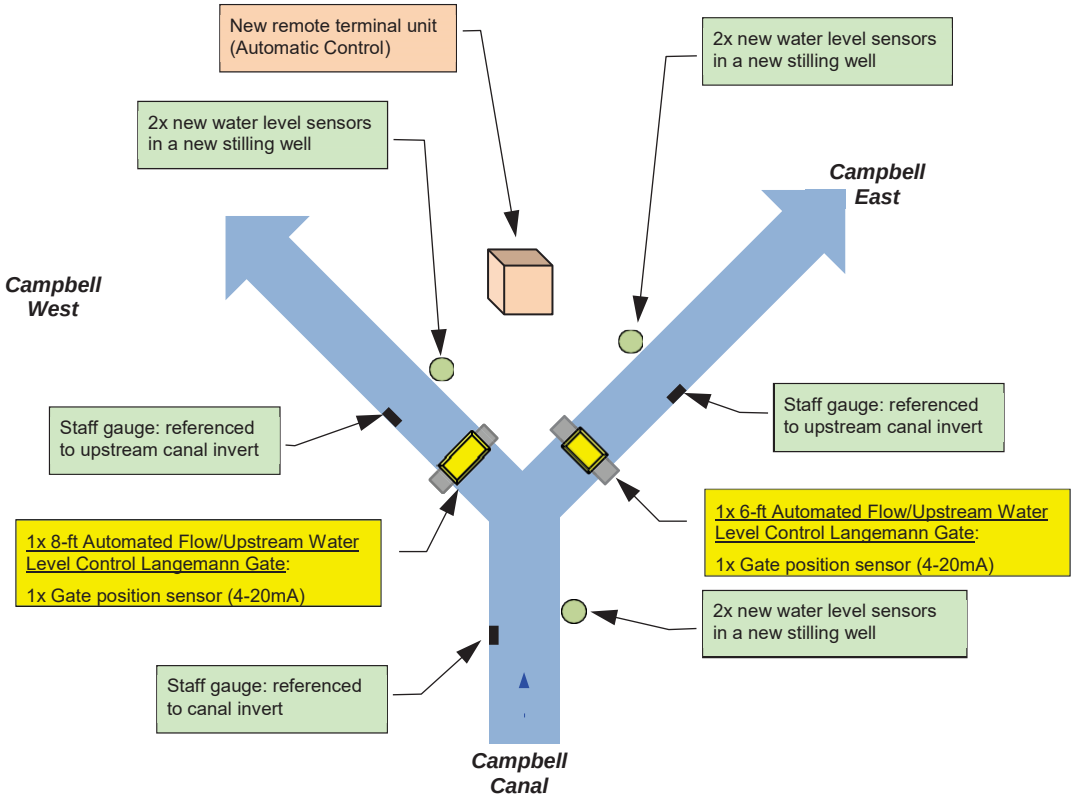
The Walker River irrigation District has recently completed upgrades to the Campbell Canal headworks including two automated flow control gates controlled by Supervisory Control and Data Acquisition and Automation (SCADA), one radio sub-master station, and one broad-crested weir. These improvements were coupled with the installation of data loggers for continuous flow monitoring and tracking. The Campbell Canal Company plans to upgrade the remainder of the canal where it splits into the East and West Canals.

Figure 1. Layout of the existing Campbell Canal Split

Phase I will replace the existing headworks structures in both canals at the split between the East and West canals with two automated Langermann (overflow) flowgates. These gates will serve as a slanted weir, and with the addition of a data logger in each of the two flumes, will enable recordation of flow in cubic feet per second throughout the irrigation season. The data loggers collect and store the data electronically, which is downloaded at regular intervals by the WRID SCADA technician for inclusion into the WRID database. These features will be designed to accommodate future automation compatible with the SCADA system currently in use by WRID. To enable access below the structures to the gates and fields below the structures, two 20 foot wide culverts will be installed below the new headworks structure in both the East and West, and the canal will be groomed one half (½) mile above and ½ mile below the structure on both the East and West canals to remediate any disturbances caused by the construction. Data loggers will be installed downstream in both the East and West Canals at key points to determine instream flow changes and problematic areas within the canal system. In accordance with Section 9504(a) (3) (B) of Public Law 111-11, the Campbell Canal Company agrees not to: 1) use any associated water savings to increase the total irrigation acreage of the canal users, and 2) otherwise increase the consumptive use of water in the operation of the canal, as determined pursuant to the law of the State of Nevada.

Installation of the overflow flowgates and devices will mitigate the inaccuracy of the in-stream flow measurements by allowing real-time and more precise adjustments of the flow. With improved accuracy of instream measurement, surplus water may be available for return to the river system. The Design suggests the following key points be included in the structure:

1. The devices will consist of vertical concrete walls on each side of the canal with a footing across the Canal.
2. The devices will be installed to reduce water level fluctuations due to flow rate fluctuations.
3. A catwalk will run across the top of the Canal to allow access for adjusting flow, measuring flow via a weir stick, and for maintaining the gates.



Schematic overview of the control improvements at the Campbell Canal Split

With the completion of phase I of the project in early 2019, the lack of sufficient data will be resolved. Once Phase I is completed, WRID staff will monitor and maintain the data loggers during the irrigation seasons, and will collect data approximately thirty (30) times throughout the season. That data will be paired with the SCADA data and appropriate corrective actions will be taken by the Campbell Canal Company, if necessary, to ensure sustained flows in the Canal.

Evaluation Criteria

A. QUANTIFIABLE WATER SAVINGS

The Campbell Canal Water Conservation Project is expected to conserve water as well as improve water transport and delivery efficiency through the installation of cross regulating-structures and instream data loggers. Water loss, averages per the Nevada State Engineer

(NSE,) are at 30%. These losses include seepage, evaporation, and transit losses. Thus, the total annual system loss, based on the 30% figure, from March 1, 2016, through October 31, 2016 for the Campbell Canal is calculated to be 4,470.6 acre feet per year. This annual loss is based on the calculation of Total Water (acre feet) ordered in 2016 multiplied by the Daily Water Loss Percentage per NSE. The Project is expected to reduce water losses by at least 5%. Therefore, upon completion of the Project, the Campbell Canal Company anticipates a total water savings of 745.1 acre feet per year.

Total Water Ordered 2016	14,902.14 Acre Feet
Daily Water Loss Percentage per NSE	30%
Current Annual Total Projected Water Loss	4,470.64 Acre Feet
Annual Projected Water Savings @ 5%	745.10 Acre Feet

Total Water Ordered 2017	33,242.67 Acre Feet
Daily Water Loss Percentage per NSE	30%
Current Annual Total Projected Water Loss	9,972.80 Acre Feet
Annual Projected Water Savings @ 5%	1,662.13 Acre Feet

Average Water Ordered 2016/2017	24,072.41 Acre Feet
Daily Water Loss Percentage per NSE	30%
Average Annual Total Projected Water Loss 2016/2017	7,221.72 Acre Feet
Average Projected Water Savings @ 5%	1,203.62 Acre Feet

The reduction in water loss resulting in water savings is expected to increase return flows to the Walker River, which is the primary water source for Walker Lake, a desert Terminal lake at the end of the Walker River corridor.

1. Annual current Campbell Canal Seepage Losses: 30%

2. Expected post project average annual daily losses are estimated at 25% which is a 5% decrease from the 2016/2017 average. The estimated savings are based on the facts that modernizing the structures will allow for more accurate water delivery, and that the installation of instream data loggers will yield more accurate flow measurements which will result in increased return flow to the Walker River System.

3. Transit loss reductions included in the 5% identified above are expected by installing the new overshot gate structures due to minimization of fluctuation in Canal flows. Transit loss reductions will be measured and noted via the instream data loggers. All transit loss reductions are estimated and will be contingent on availability of water each year.

4. Flows are currently measured at the headworks of the canal, and at crested weirs in each channel below the existing structure. When high or low flows are identified by the ditch

rider on site, adjustments are made with flash boards. This process induces a time lag between incidence of the flow anomaly and adjustment of the flow. The proposed structure will provide more accurate measurement, and real-time flow adjustments when inconsistencies occur, than the existing flash board system.

5. Annual farm deliveries in 2016 totaled 14,902.14 acre feet. In 2017, a record water year, deliveries were 33,242.67 acre feet.

6. The slanted weirs in the proposed structure design are used to measure in-flow rates at the head gate, and out-flow rates at the downstream side of the canals. Measuring the in-flow rates and out-flow rates, as well as analyzing data collected by instream data loggers, will allow loss calculations to be determined. This will also assist in identifying problematic areas along the Canal.

7. Materials to be used on the Campbell Canal Water Conservation Project include:
   a. Concrete
   b. Lumber
   c. Re-bar
   d. Snap Ties
   e. Steel
   f. Telog Data loggers (3)

B. WATER SUPPLY RELIABILITY EXPECTED TO RESULT FROM THE PROJECT

1. Campbell Canal is owned and operated by the Campbell Canal Company under the governance of a company elected board of supervisors. The Campbell Canal Company is incorporated in the State of Nevada, and membership includes all of the irrigation users supplied by the canal.
2. Irrigation water in the Walker River Basin is dependent on climate and water availability from the reservoirs. The Campbell Canal system is designed to return excess irrigation water to the Walker River System. With the loss reductions expected from the completion of the Campbell Canal Water Conservation Project, it is projected that excess water will now either remain in the Walker River, or ultimately return to the river system. Any return flow or water left in the river system will benefit the efforts to preserve Walker Lake, a desert terminal lake at the end of the Walker River system.
3. Benefits of increased return flows and allowing water to remain in the river system include improved stability and diversity of riparian and lacustrine habitats, as well as improved physical water quality composition for both fish and wildlife. Three federally listed threatened species in this area of the river, are the: 1) Lahontan Cutthroat Trout (LCT), 2) Yellow-billed Cuckoo, and 3) wolverine. The most notably discussed is the LCT which was originally listed as endangered on October 12, 1970, but reclassified as a threatened species in 1975. In the Walker River Basin, LCT habitat includes both the Walker River and Walker Lake, a Terminal lake located in Mineral County, NV at the end of Walker River. Due to drought conditions and upstream water use, Walker Lake only

receives sporadic freshwater inflow from the Walker River. The Walker Lake water level has been declining since 1882 and in 2016 was at its lowest level. With the absence of freshwater inflow, and the increase in total dissolved solids, Walker Lake has become uninhabitable for LCT. Increased instream and return flows could possibly assist in reestablishing freshwater delivery to Walker Lake and lower the total dissolved solid concentration, thereby making the lake more habitable for LCT and the diminishing Tui Chub species (a major prey species for the LCT).

4. The BOR Desert Terminal Lakes Program has funded projects that directly influence fish and wildlife populations. The Walker River Basin Restoration/Acquisition Program was established to purchase/acquire surface water rights held by farmers and ranchers within the Basin with the intent to deliver the purchased water to Walker Lake in an effort to save the lake and its native species. The BOR was involved in the Walker River Basin Cloud Seeding Project that intended to enhance precipitation in an effort to increase stream flows within the Walker River.
5. Increased instream flows will not specifically benefit federally designated critical habitat.
6. Economic benefits from increased instream flows will apply to many businesses along the Walker River who rely on recreation activity. The businesses include hunting, fishing, water activity, and wildlife viewing/guiding.
7. The primary concern for water supply sustainability in the region is upholding historic water rights for agricultural users while preserving the Walker Lake ecosystem. Efforts and support to such projects, in addition to the BOR, can be associated with the US Fish and Wildlife Service, the National Fish and Wildlife Foundation, the Walker Basin Conservancy, Cal Trout, the Desert Research Institute, the University of Nevada, the Walker Basin Restoration Foundation, the Walker River Paiute Tribe, the Natural Resources Conservation Service (NRCS), Lyon County, and the State of Nevada.
8. The Campbell Canal Water Conservation Project will address a water supply sustainability concern by increasing upstream water use efficiency and ensuring water users receive accurate requested amounts while increasing return flows. The number of diversions and users is to remain the same. Water usage increased in the 2017 irrigation season due to the above average snowpack.
9. The Project is expected to increase instream return flows, which by way of the Walker River, may provide additional water through the Walker River Paiute Tribe Reservation (WRPT). WRPT is a disadvantaged community in pursuit of additional water, therefore the return of additional water to Walker Lake may be somewhat dependent on additional water usage requirements on the WRPT Reservation.
10. The completion of the Project will allow for future improvements along the Campbell Canal and other canals within the Walker River Basin. All improvements noted by the design will decrease water losses and increase instream flow and efficiency.

C. COMPLEMENTING FUTURE ON-FARM IRRIGATION IMPROVEMENTS

1. There are two current on-farm projects that are ongoing. One, on the East Canal, involves approximately 2,700 feet of pipe replacing open ditches for irrigation. A second project

on the West Canal, involves 5,400 feet of pipe replacing open ditches. The water use efficiency as developed by the NRCS Farm Irrigation Rating Tool (FIRE) increased from 71.3% to 83.5% for an increased benefit of 12.2% on each of these projects. These projects have received NRCS EQIP funding, and are currently under construction with expected completion in 2018.

2. The Yerington Paiute Tribe has been working with the Natural Resources Conservation Service on a project to modernize the water delivery infrastructure throughout the entire Campbell Ranch portion of their reservation. NRCS has completed initial design for this project.
3. On-farm irrigation improvements recently performed on another farm along the Campbell Canal involved converting 16,006 feet of open ditch into pipeline. This project also increased the water use efficiency by 12.2%. Many of these projects were initiated because of the prolonged drought. This Project will complement the on-the-farm improvements by minimizing water loss due to transport as well as creating stabilized and controlled flows which will result in a more accurate water delivery system.
4. Reliability of water delivery will improve with the instream flow measurement and data collection. Campbell Canal staff will be able to identify problematic areas and rectify the issue(s) in a timely manner. A more reliable water transport system will increase the availability of water and possibly extend the irrigation season. Users will be allowed more flexibility in ordering and using the water. With order and use flexibility, water stays in the river system and allows for increased ground infiltration. Increased ground saturation allows for stability and the possibility for increase in the water table.

D. DEPATMENT OF THE INTERIOR PRIORITIES

1. The Project supports the White House Public/Private Partnership Initiative to modernize U.S. infrastructure. The Campbell Canal Company proposes to fund more than half of the Project in cash. Individuals served by the Canal are modernizing their individual farms using a combination of public and private funds. This modernization includes construction of pipelines to reduce evaporation and transportation losses which allows the requested amount of flow to reach the individual property while diverting less water from the Walker River.

E. IMPLEMENTATION AND RESULTS

a. Project Planning

1. Planning for the Project has been in cooperation with WRID, the Campbell Canal Company, the Mason Valley Conservation District (MVCD), and the Irrigation Technical Resource Center (ITRC), a part of California Polytechnic State University in San Luis Obispo, California.
2. Listed below are two adaptation strategies which have been developed with a focus on water savings and return instream flows. Both studies are being conducted along the

Walker River, therefore the Campbell Canal Company will be a critical component in their pursuit of success.

i. Conservation Assessment for Walker Lake in Mineral County, NV – the Nature Conservancy

This assessment has a primary restoration strategy to increase the quantity and quality of freshwater inflows to Walker Lake. The conservation program seeks to increase instream flows to Walker Lake through a comprehensive basin-wide strategy that relies on voluntary water transactions and water management initiatives, community-based conservation and stewardship, and applied research and demonstration projects. The Action Plan utilizes adaptive management to resume long-term recovery strategy as well as short-term activities and research that will further understanding of the conservation needs of LCT specific to the Walker River Basin.

ii. Walker Basin Restoration Program – A Business Plan for the Conservation of the Lahontan Cutthroat Trout: A Ten-Year Plan for Conservation Throughout Its Range-National Fish and Wildlife Foundation

The Walker River Basin Restoration Program was established in accordance with Public Law 111-85 in October, 2009, for the primary purpose of restoring and maintaining Walker Lake, a natural desert lake in Nevada at the Terminal of the Walker River Stream System of Nevada-California. The lake's elevation has been steadily declining since the early 1900's, resulting in a steady increase in salinity, or Total Dissolved Solids (TDS), to levels which today threaten its complete ecological collapse. Range-wide diversity for native trout includes genetic integrity, life history diversity, and geographic (or ecological) diversity. For this Initiative, Trout Unlimited completed analyses based on the 3-R strategy to evaluate the LCT 'conservation portfolio' as well as the effectiveness of possible restoration projects under the Initiative.

3. This project is expected to result in future collaboration among Basin Study partners in utilizing the Project as a basis for future projects which are win/win for agricultural use and ecological conservation.
4. WRID and ITRC have been planning and implementing water efficiency projects throughout the Walker River Watershed.
5. Discussions are being conducted with WRID to use their construction capability for the site preparation (earthwork and concrete work), installation of the conduit, wiring, and stilling wells. Aqua Systems 2000 Inc. (AS2I) would be contracted to provide two automated gates and a stand-alone remote terminal unit. Estimated costs are shown in the budget section.
6. The primary aspect of this project is that it serves to conserve water. Secondarily, the project has a goal of increasing instream flows, benefitting federally listed species and downstream users. Shortfalls in the water supply, which have led to litigation, may be improved with the potential of increasing flow to Walker Lake.

b. Support and Collaboration

1. The Project has widespread support from a variety of stakeholders in the community. The following entities are supporting the project and have provided letters outlining that support:
   a. Walker River Paiute Tribe
   b. Walker River Irrigation District
   c. Walker River Watermaster
   d. Nevada Division of Water Resources
2. The broad spectrum of stakeholders supporting the Project will lend support to similar water efficiency projects throughout the Walker River system which will provide additional water savings and efficiencies as these additional projects are implemented.
3. The drought of the previous five years created considerable conflict among water users. Reduced allocations were common because water was not available to meet the requests. This project will help prevent these reductions in the future due to the reduction in water losses.
4. There has been litigation over the water in the Walker River beginning in the late 1800s, and still continuing today. By contributing to additional instream flow, the Project will provide relief to some of the litigants.
5. With the conception of this project, many other canal companies in the Walker River System are considering water conservation improvements. The Campbell Canal Company is planning an additional water conservation project for development in the next 24 months which will provide greater water savings than the current project. This project will place 6,000 feet of the current open canal into pipe to further reduce losses, and improve efficiency.

c. Performance Measures

1. Post project metrics to be utilized to quantify actual benefits of the project include:
   a. Annual water loss measurements along the Campbell Canal from the head gate to the downstream end of this project.
   b. Annual daily flow ordered
   c. Water transit loss through the project section.
   d. Annual water returned to instream flow.
   e. Water savings calculated from baseline and post-project data.

F. ADDITIONAL NON-FEDERAL FUNDING

1. Non-federal funding in the amount of $82,500 has been committed to the project by the Campbell Canal Company. This is slightly over 50% of the project cost.
2. The structure that diverts water into the canal from the Walker River washed out in March, 2018. The structure had to be rebuilt at a cost of approximately $40,000. Farm Services Agency (FSA) provided 75% of the construction cost through their Emergency Rehabilitation Program, or $30,000, and the Campbell Canal company cost-shared 25%, or $10,000 in non-federal funding..

G. CONNECTION TO RECLAMATION ACTIVITIES

1. The proposed project is connected to the Reclamation goal of conserving water, protecting agriculture, reduction of environmental effects, and improving wildlife habitat.
2. The applicant does not receive Reclamation water.
3. The proposed project is not on Reclamation Land, and does not involve Reclamation facilities.
4. The proposed project is in the same basin as other Reclamation projects such as the Walker Basin Restoration Program with the National Fish and Wildlife Foundation and Walker Basin Conservancy, and the Walker Basin Project with the University of Nevada, Reno and the Desert Research Institute.
5. Project results will include an increase in return flows due to more efficient use of water, and decreased water losses along the Campbell Canal. The increase in return flows has the potential to increase the amount of water reaching Walker Lake.
6. The waters of the Walker River Basin have been an integral part of life for many Native American tribes including the Bridgeport Indian Colony, the Washoe Tribe, the Yerington Paiute Tribe, and the Walker River Paiute Tribe. Since the Project does not adversely affect current flows, and has the potential to increase flows, it is a mutual benefit to all users. The Federal Indian Trust Responsibility is a legally enforceable fiduciary obligation of the United States to protect tribal resources, including water. The Yerington Paiute Tribe has water rights at the end of the West Campbell Canal and the Walker River Paiute Tribe has water rights along the Walker River. Both would benefit from increased flow, thus fulfilling a portion of the trust responsibility. Additionally, Federal projects under Executive Order 13175 provide the opportunity for Tribal consultation which further helps Reclamation meet trust responsibility.

FUNDING PLAN AND LETTERS OF COMMITMENT

1. A total monetary payment of $ 82,500 is planned as the applicant contribution toward the project.
2. Costs of $40,000 were incurred in March, 2018, to repair the diversion structure in the Walker River that was washed out after numerous storms in March that created a period of very high flow. The Campbell Canal Company contributed $10,000 of this cost.
3. Annual assessment fees are collected from the water right holders within the Campbell Canal boundaries, and the funds are available as cost share. In addition, in-kind use of equipment and labor is available as well.
4. An Official Resolution to accompany this proposal was approved and signed January 16, 2018, at the Campbell Ditch Company Board Meeting.
5. No other funding or project partner contributions have been requested.

6. Letters of Support from:
    i. Walker River Paiute Tribe
    ii. Walker River Irrigation District
    iii. Walker River Watermaster
    iv. Nevada Division of Water Resources

7. The project is focused primarily on water delivery, accuracy and efficiency in addition to the reduction of water loss. The project does not allow for changes in allocations nor does it negatively affect downstream users. All interested parties have shown adamant support for the project.
8. Current support for the project will result in increased collaboration for future water conservation projects. ITRC has collaborated with WRID and the Campbell Canal governing board to prioritize Canal improvements. Because of these collaborations, other independent canal companies within the Walker River Basin are expressing interest in improvement projects that would contribute to water conservation efforts.
9. With additional canal companies in the Walker River Basin expressing interest in increased water conservation, problematic areas will be addressed and mitigated, which could reduce the probability of a water-related crisis in the future.
10. Tension and litigation within the Walker River Basin have been present for decades. With extended droughts such as the period ending in 2016, and decreased water availability, tension will build. Diverse and competing interests exist from the top of the Walker River's two forks to the Terminal at Walker Lake. Litigation has been ongoing, primarily with surrounding Native American populations. The benefit of this project is that no water rights will be affected, and it has the potential to increase flows in the river to the native populations and Walker Lake.
11. The possibility of future water conservation improvements by water users and canal companies will be enhanced by this project, setting an example of possible water saving improvements.

BUDGET PROPOSAL

Funding Sources	Amount
Non-Federal Entities	
1. Campbell Canal Company	$ 82,500 Cash
2. Campbell Canal Company	$ 10,000 In-Kind
Non-Federal Subtotal	$ 92,500
Other Federal Entities	
1. Farm Services Agency	$ 30,000
Other Federal Subtotal	$ 30,000
Requested Reclamation Funding	$ 82,272

BUDGET PROPOSAL

Budget Item Description	Computation		Quantity	Total Cost
	Cost	Unit		
Phase 1				
Planning				
Grant Preparation	$ 46	Hour	100	$ 4,600
Engineering	$ 3,000	Unit	1	$ 3,000
Salaries &Wages				
Grant Administration	$ 46	Hour	25	$ 1,150
Administrative	$ 39	Hour	25	$ 975
Management	$ 39	Hour	18	$ 702
Site Crew	$ 28	Hour	400	$ 11,200
Equipment				
Heavy Equipment	$ 115	Hour	40	$ 4,600
Supplies & Materials				
HDPE Pipe 60”	$ 150	Foot	40	$ 6,000
Concrete	$ 115	Yard	60	$ 6,900
Lumber, Rebar, Wire, Ties	$ 2,000	Unit	1	$ 2,000
Steel	$ 1,900	Unit	1	$ 1,900
Solar System & Enclosure	$21,970	Unit	1	$ 21,970
Telog Data Loggers	$ 1,425	Unit	3	$ 4,275
Site Supplies	$ 2,500	Unit	1	$ 2,500
ITRC Products				
Langemann Gate 8’x4’	$37,000	Each	1	$ 37.000
Langemann Gate 6’x4’	$35,000	Each	1	$ 35,000
SCADA Ready Controller	$14,000	Each	1	$ 14,000

Shipping & Handling	$ 4,000	Unit	1	$ 4,000
Other				
Environmental/Cultural	$ 3,000	Project	1	$ 3,000
TOTAL PHASE 1 COSTS				$ 164,772

BUDGET NARRATIVE

Salary and wages for grant writing and administration are based on an hourly wage of $32.00 plus 44% fringe. Duties include researching, writing and submitting the grant, compliance, invoicing, paying contractors, and necessary reporting once the grant is awarded. Salaries and wages for WRID administrative and management staff are based on an hourly wage of $35.45 plus 10% fringe. Duties of management and administrative staff include time tracking, management, and supervisory duties of the site crew. Site crew salaries and wages are based on WRID Board approved hourly rates. There are no travel charges applicable to this grant. Equipment charges are based on current unit prices and quotes from distributors.

ENVIRONMENTAL AND CULTURAL RESOURCE COMPLIANCE

1. All applicable environmental and cultural requirements for Federal Funding, including the National Environmental Policy Act, the Endangered Species Act and the National Historic Preservation Act, will be followed and documented. Preliminary review of the project area has not identified any adverse effects to environmental or cultural resources.
2. As the proposal is planned for replacing existing structures and in-stream data loggers within an irrigation canal, it is exempt from dredging permits from the Environmental Protection Act and the US Army Corps of Engineers under the Clean Water Act. The canal, which is man-made, does transport surface water from the Walker River as permitted by users for irrigation purposes.
3. No known occurrences of federally listed species have been documented in the project area, nor does the project area contain any critical habitat.
4. The proposed project will modernize an existing water control structure which was installed in 1979. The project is not expected to contribute any significant water transported sediments.
5. No historical or culturally sensitive properties lay within the project area.
6. No known archaeological sites are present within the project area.
7. The project will not have a high or adverse effect on low income or minority populations.
8. Access will not be allowed to any Native American ceremonial grounds or sacred sites.
9. It is not anticipated that the project will introduce or contribute to the spread of noxious or non-native invasive weed species known to occur within the area.

REQUIRED PERMITS OR APPROVALS

1. There are no Federal, State, or County permits or approvals required for this project.

LETTERS OF SUPPORT

1. Walker River Paiute Tribe
2. Walker River Irrigation District
3. Walker River Watermaster
4. Nevada Division of Water Resources

OFFICIAL RESOLUTION

1. Campbell Ditch Company Board of Directors Minutes, January 16, 2108
2. Campbell Ditch Company Shareholders Meeting Agenda and Minutes
3. Official Resolution To Endorse WaterSMART Application

UNIQUE ENTITY IDENTIFIER AND SYSTEM FOR AWARD MANAGEMENT

A. SAM Registration: Confirmed
B. EIN: 88-0158729
C. DUNS: 619420925

ATTACHMENTS

1. ITRC Technical Memorandum January 18, 2018
2. Project Location Map
3. Project Area Map

moving water in new directions
IRRIGATION TRAINING AND RESEARCH CENTER
California Polytechnic State University
San Luis Obispo, California 93407
Tel: (805) 756-2434 Fax: (805) 756-2433 www.itrc.org

TECHNICAL MEMORANDUM

Date: 18 January 2018

To: Bert Bryan, General Manager, bert@wrid.us
Walker River Irrigation District
410 N. Main Street
Yerington, NV 89447-2322

From: Dr. Stuart Styles, Director – ITRC
Sierra Layous, Senior Engineer – ITRC

Subject: ***RFP – Request for Proposals***
Water Measurement Upgrade
Campbell Canal Split

ITRC is working on behalf of WRID to implement remote monitoring and automated control sites as part of Walker River ID's Phase 1 Water Measurement Upgrades. This technical memorandum provides hardware and software specifications for the installation of:

Campbell Canal Split

a) Two (2×) automated Langemann (overflow) gates
b) One (1×) stand-alone remote terminal unit (RTU) and operator interface terminal (OIT)

Aqua Systems 2000, Inc. (AS2I) will provide the controls work, a majority of the hardware, and commissioning assistance for this site. Walker River Irrigation District (WRID) will provide misc. hardware, hardware installation, and commissioning of the site with support from AS2I.

AS2I has provided a budget for the equipment and services for this site of **$90,000** (excluding taxes). This estimate is for the gates and RTU only; it does not include:

- Site preparation (earthwork and/or concrete work)
- Supply and installation of the conduit, wiring, stilling wells, staff gauges, concrete work, NEMA-4 enclosure for RTU, solar system batteries
- Installation of the gate hardware, RTU, water level sensors, and solar power system[1]

A detailed description of the budget components is included in **Attachment A**.

[1] AS2I estimates the installation will require 6 person-days (3 persons × 2 days) and a one-ton capacity crane on-site for 12 hours.

Campbell Canal Split - Location and Site Conditions

The Campbell Canal diverts water from the Walker River near Yerington on the north side of State Route 95. The design capacity of the canal headworks is approximately 110 CFS. About 1.5 miles downstream of the headworks, the canal splits into a west fork and an east fork.

The layout of the existing water control and measurement infrastructure at the split of the Campbell Canal is shown in **Figure 1**. The configuration and function of the existing structures consist of two sites:

1. One (1×) 8-ft flashboard bay (Campbell West); estimated capacity of 60 CFS
2. One (1×) 6-ft flashboard bay (Campbell East); estimated capacity of 50 CFS

Figure 1. Layout of the existing Campbell Canal Split

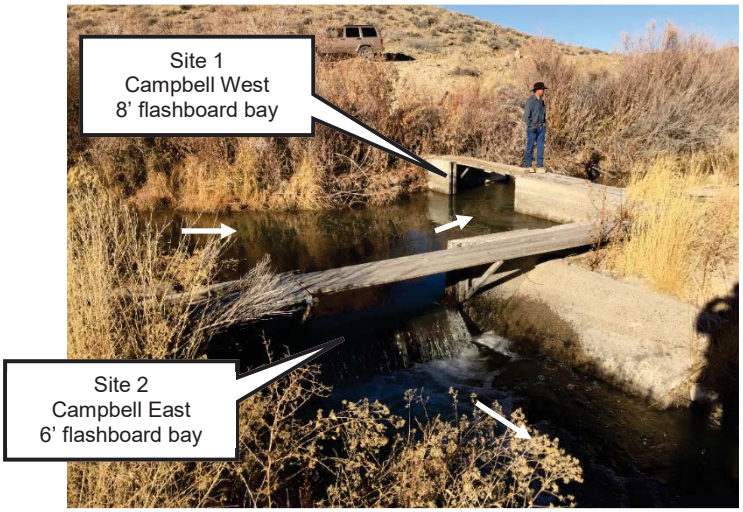


Figure 2. Photograph of the existing Campbell Canal Split

The WRID project at the Campbell Canal Split involves the following features:

- Retrofit of flashboard bay at Site 1 with one (1) 8-ft Langemann gate
- Retrofit of flashboard bay at Site 2 with one (1) 6-ft Langemann gate
- Control schemes:
    - Either gate in flow control, with the other in upstream water level control
    - Either gate in upstream water level control, with the other in manual mode (target gate height)
    - Both gates in manual mode (target gate height)
- The flow rate will be calculated over each gate
- The flow rate and upstream water level targets are re-settable from the operator interface terminal (OIT) at the site
- The gates and control system are solar-powered (12/24 VDC)
- On-site display and control of flow rates (CFS) over each gate, upstream and downstream water levels (feet), and other control parameters, in addition to local data logging and storage
- Implementation by a team (AS2I, WRID, and ITRC)

Modernization Improvements

Site 1: Campbell West 8-ft Langemann Gate

The one (1) 8-ft flashboard bay will be retrofitted with one (1) 8-ft Langemann overflow gate. Upstream and downstream water level sensors will be used to calculate the flow past the gate.

Figure 3. Campbell Canal West location of Langemann gate, Site 1

A Langemann gate can control either the upstream water level or the flow through the gate by moving the gate up and down. The gate folds open and closed, allowing water to flow over the

top of the gate. **Figure 4**, below, shows a Langemann gate in a canal, retrofitted into the existing flashboard bays.

Figure 4. Example Langemann gate in existing flashboard bays

Site 2: Campbell East 6-ft Langemann Gate

The one (1) 6-ft flashboard bay will be retrofitted with one (1) 6-ft Langemann overflow gate. Upstream and downstream water level sensors will be used to calculate the flow past the gate.

Figure 5. Campbell Canal East location of Langemann gate, Site 2

Site 3: Remote Terminal Unit
A new, stand-alone solar-powered remote terminal unit (RTU) for automated control of the gates will be installed by WRID near Sites 1 and 2. The RTU will not be connected to the district's SCADA system at this time, but may be integrated into the system in the future, if desired.

Summary

Figure 6 shows an overview of the locations of the upgrades.

1. New: Retrofit flashboard bay with one (1×) 8-ft Langemann gate
2. New: Retrofit flashboard bay with one (1×) 8-ft Langemann gate
3. New: Stand-alone RTU with OIT

Figure 6. Layout of the proposed upgrades to the Campbell Canal Split

Project Features

The required WRID project at the Campbell Canal Split involves the following features:

- Campbell Canal Split Controller Remote Terminal Unit (RTU) & instruments
- Flow rate target down either canal (one or the other) and upstream target water level will be re-settable from the OIT in the field
- Redundant water level sensors (6× total)
- Gate sensors (2× total)
- On-site display water levels (upstream and downstream), flows and gate statuses, targets and alarm set points and list alarms, in addition to local data logging and storage
- Implementation by a team including:

- AS2I: Supply of the gate hardware, RTU (with secure OIT and gate controls, excluding NEMA-4 enclosure), solar system (excluding batteries), gate and water level sensors.
- WRID: Supply and installation of the conduit, wiring, stilling wells, staff gauges, concrete work, NEMA-4 enclosure for RTU, solar system batteries; installation of the gate hardware, wiring, RTU, gate and water level sensors, solar power system.

Control System Operation

The Team shall furnish, install, and place into operation a control system to automatically operate the two (2) new control gates as described herein. The RTU shall be pre-assembled, bench-tested, and ready for operation prior to delivery to WRID. Control, metering, alarm, and all other logic components used in the control system shall be provided in the PLC code by AS2I.

An overview of the new control system components at the Campbell Canal site is shown in **Figure 7**.

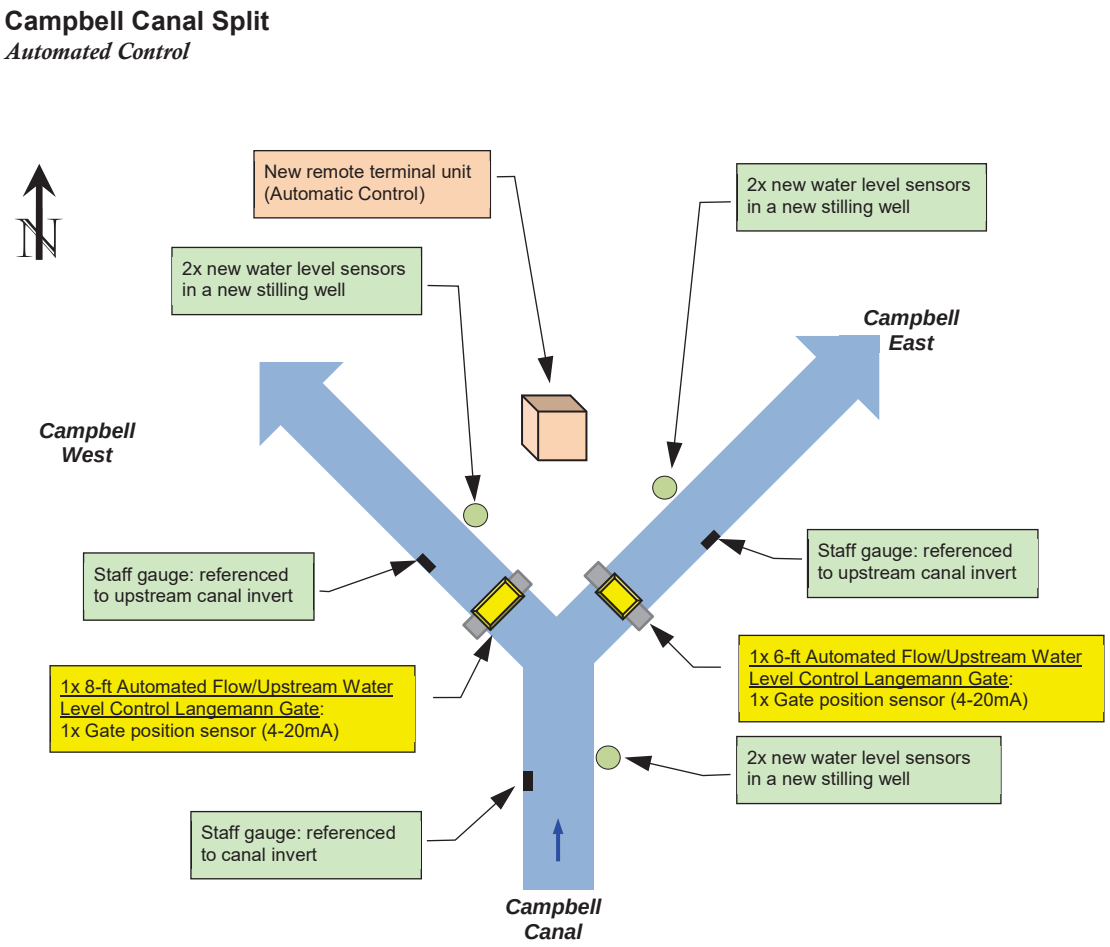


Figure 7. Schematic overview of the control improvements at the Campbell Canal Split

The RTU shall consist of a stand-alone distributed control center with self-contained electronics and sensor systems including a graphical operator interface terminal (OIT). The control system

shall consist of a PLC which will control the timing of operation, gate alteration, control, and alarm functions, in addition to other specified equipment. A single PLC shall be used to control the gates.

Other components of the system shall include:

- water level sensors;
- gate position sensors;
- solar power and a battery backup system;
- hand/off/auto selector switches; and
- miscellaneous electrical wiring.

Design and Functions

The system at Campbell Canal Split shall perform the following functions through the OIT:

1. Allow any of the following control schemes:
    - One gate automatically adjusts to maintain a user-defined target flow rate; the other gate automatically adjusts to maintain a user-defined target upstream water level (and vice-versa)
    - One gate automatically adjusts to maintain a user-defined upstream water level; the other gate manually adjusts to a user-defined gate height (and vice-versa)
    - Both gates manually adjust to user-defined gate heights
2. Adjust targets and alarm set points
3. Monitor:
    - System status (positions, alarms, gate status)
    - Water levels
    - Canal flow rates measured over the gates
4. Change the operation from automatic to manual
5. Change key controller set points
6. Select which of the two redundant sensors (for water level measurements) should be considered the "primary" sensor for control purposes

The PLC will be programmed to provide the following information and controls to the OIT (as specified):

- Water level sensors statuses and values
- Flow rates
- Gate positions statuses and values
- Gate control status (hand/off/auto)
- Gate and water level alarms
- Power status
- Intruder status
- Loss of power
- Low battery output voltage alarm
- Various control set-up parameters and diagnostics inputs/outputs

Stilling Wells

The stilling wells to be installed by WRID shall have the following characteristics:

- The stilling wells will be located on the upstream side of the concrete wall structure at a location to be identified by WRID that will not interfere with the installation and operation of the gates or flow measurement weir.
- The stilling wells will consist of a minimum 18" diameter rigid, PVC pipe.
- If the stilling well is permanent (in ground), the diameter of the connecting tube should be 1/4 to 1/5 the diameter of the stilling well.
- If the stilling well is portable (mounted in the canal), the stilling well should be open at the bottom and be drilled with many holes to cover about 1/3 to 1/2 the available pipe surface. The more holes (open space) for the water to move into the stilling well, the less susceptible it is to plugging.
- The stilling wells will contain a metal guide rod that can be affixed to a permanent attachment inside the stilling well. The sensor and cable will be attached to the metal rods so extra sensor cable length is necessary to allow easy removal for cleaning. The metal rod shall be permanently marked or etched at the sensor tip location

Integration Responsibilities

AS2I Responsibilities

As part of upgrading the control and measurement at this site, AS2I shall be responsible for the following items:

- Provide the gate hardware
- Provide and program the RTU (except NEMA-4 enclosure) and all components for a fully-functioning local automated control site
- Provide solar power system (excluding battery/combination of batteries)
- Specify battery/combination of batteries required for solar power system
- Provide and program the OIT (Operator Interface Terminal)
- Assist with installation, commissioning and training

ITRC Responsibilities

As part of upgrading the control and measurement at this site, ITRC will be responsible for the following items:

- Prepare specifications and Request for Proposals (RFPs)
- Assist with planning/design of concrete infrastructure, gate sizing, material requirements, etc.

WRID Responsibilities

As part of upgrading the control and measurement at this site, WRID will be responsible for the following items:

- Provide and install three (3) stilling wells:
    - Upstream of the Campbell Canal Split
    - Downstream of the Campbell Canal West Langemann Gate
    - Downstream of the Campbell Canal East Langemann Gate
- Provide and install buried conduit, junction boxes, wiring, etc. between sensors and RTU

- Provide and install the NEMA-4 enclosure for RTU
- Provide and install external staff gauges at each stilling well location, three (3) total
- Install and commission the gate hardware
- Install two (2) water level sensors in each stilling well, six (6) total.
- Install one (1) gate position sensor per automated gate, two (2) total
- Calibrate the sensors
- Install the RTU and all components
- Install and verifying RTU earth ground. Ensure less than 1 Ohm or 1 Volt is measured between the DIN rail and the ground rod
- Provide battery/combination of batteries for solar power for the site
- Install and verifying DC power supply systems including batteries for each site
- Commission the automated control logic and flow measurement with assistance by AS2I

Materials Requirements Summary

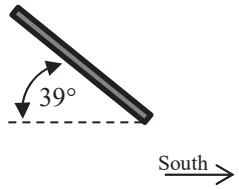
The major components to be supplied at the Campbell Split by **AS2I** include:

- Campbell Canal Split Remote Terminal Unit (RTU)
  - *8' Langemann Gate for Campbell West, including associated hardware*
  - *6' Langemann Gate for Campbell East, including associated hardware*
  - *Water level sensors (6)*
  - *Gate position sensors (2)*
  - *PLC*
  - *OIT Touchscreen*
  - *Wiring*
  - *Voltage regulator between batteries and equipment*
  - *Laminated copy of wiring diagram in RTU, digital copy with District*
- Solar Power System
  - *All components for a fully-functioning solar power system for the site, excluding batteries*
  - *The criteria for the battery/combination of batteries shall be provided by AS2I (batteries will be purchased by WRID)*

The major components to be provided by **WRID** at the Campbell Split include:

- Stilling wells and staff gauges
  - *1× 24" Green Diamond Sewer Pipe PS46 PVC or approved equivalent upstream of gates, with an external staff gauge referenced to the canal invert on the concrete apron in front of the control gate structure*
  - *1× 24" Green Diamond Sewer Pipe PS46 PVC or approved equivalent downstream of Campbell West Langemann Gate, with external staff gauge referenced to the canal invert on the concrete apron in front (upstream) of the control gate structure.*
  - *1× 24" Green Diamond Sewer Pipe PS46 PVC or approved equivalent downstream of Campbell East Langemann Gate, with external staff gauge referenced to the canal invert on the concrete apron in front (upstream) of the control gate structure.*
- Conduit and wires
  - *Buried conduit and wires between all sensors/actuators and the RTU*
- RTU enclosure

    - *Hoffman NEMA-4 enclosure or approved equivalent*
    - *Concrete pad with vehicular protection (pipe bollards)*
    - *Lightening protector*
- Solar Power System
    - *Solar panel should be mounted oriented due south at an angle from horizontal equal to the latitude of the location (39°)*



    - *The controller and charger must be housed in a NEMA-4 enclosure.*
    - *Battery/combination of batteries (criteria shall be provided by AS2I)*
- Earth ground (recommended):
    - *8' copper grounding rod with conductor clamp*
    - *#10AWG or larger grounding conductor wired from grounding clamp directly to an individual, large grounding terminal block mounted to DIN rail.*

Attachment A
Aqua Systems 2000, Inc. Budget

Aqua Systems 2000 Inc.
5, 4006 - 9 Avenue North, Lethbridge, Alberta, Canada T1H 6T8
Phone: (403) 380-2724 or (800) 315-8947 Fax:(403) 327-8543

13 March 2017

Irrigation Training and Research Center
California Polytechnic State University
One Grand Avenue, Building 8A
San Luis Obispo, CA 93407

Attention: Sierra Layous, PE
Senior Irrigation Engineer

RE: Langemann Gate Budgets

The following is our budget for the supply of the following equipment and services:

Description	Langemann Gate	Langemann Gate
Width (ft) x Height (ft)	**8.0 x 4.0**	**6.0 x 4.0**
Movement (ft)	**3.1**	**3.1**
Quantity	**1**	**1**
BUDGET		
Manual Electric 12 Vdc Langemann Gate	$37,000	$35,000
SCADA Ready Controller	$14,000	
Shipping & Handling	$4,000	
TOTAL BUDGET	**$90,000**	
Currency – USA$		
Budget does not include federal, state or local taxes.		

The following is a description for the above budgets:

- **Manual Electric 12 Vdc Langemann Gates -**
  - 3CR12 Stainless steel gate frame.
  - 3CR12 Stainless steel gate leaves and side plates.
  - Mild steel with Amerlock® 400 epoxy coating:
    - for sprockets boxes, main strut and enclosure.
  - Side seals – gate to side plates.
  - Vertical rising mast.
  - Waterproof roller chain in an omega configuration.
  - Nord helical worm speed reducer.
  - ¼ HP - 12 Vdc motor.
  - Electrical includes ammeter, limit switches, overload relay reversing motor starters, switches, fuse and terminal blocks.
  - 1 x 50 (24 Vdc) solar panel(s).
  - Solar regulator.
  - Group 27 AGM batteries to be supplied by others.
  - Installation assistance

- **SCADA Ready Controller -**
  - Schneider 334 SCADA Pack programmable controller.
  - Red Lion Human – Machine Interface.
  - Upstream water level sensor - two
  - Downstream water level sensors - four
  - Gate position transmitter.
  - Various control scenarios.
  - Commissioning and training.

The following summarizes the labor and equipment requirements to install one gates and outer enclosure at one site – total installation time is usually less than twon days:

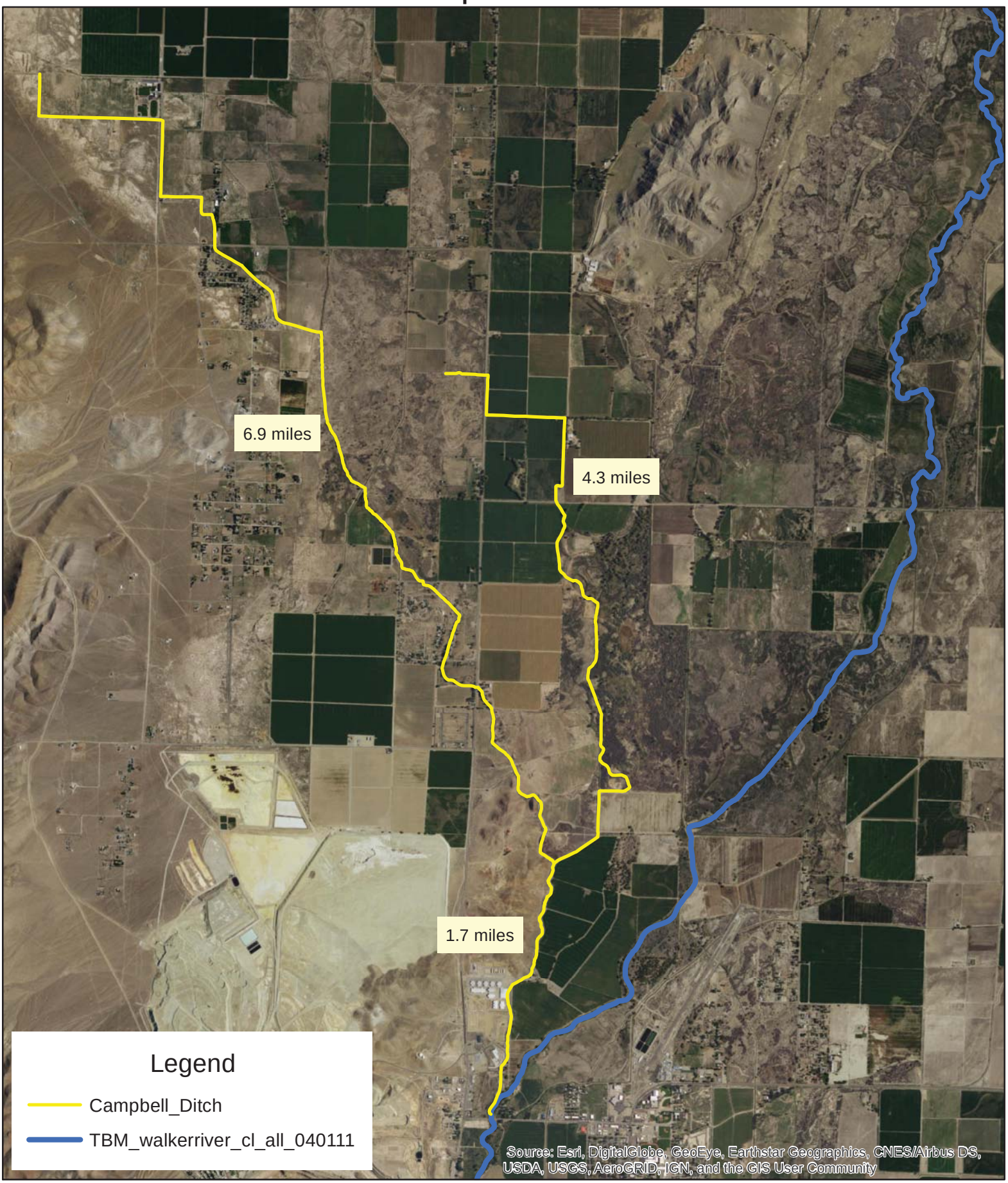
- Crane capable of lifting and placing 2,000 pounds – 12 hours on site time.
- Labor – three men – 16 hours on site time.
- Concrete drill and anchor bolts.
- Miscellaneous tools.

Thank you for the opportunity for providing a budget on this project. If you wish to discuss please call me at 1-800-315-8947.

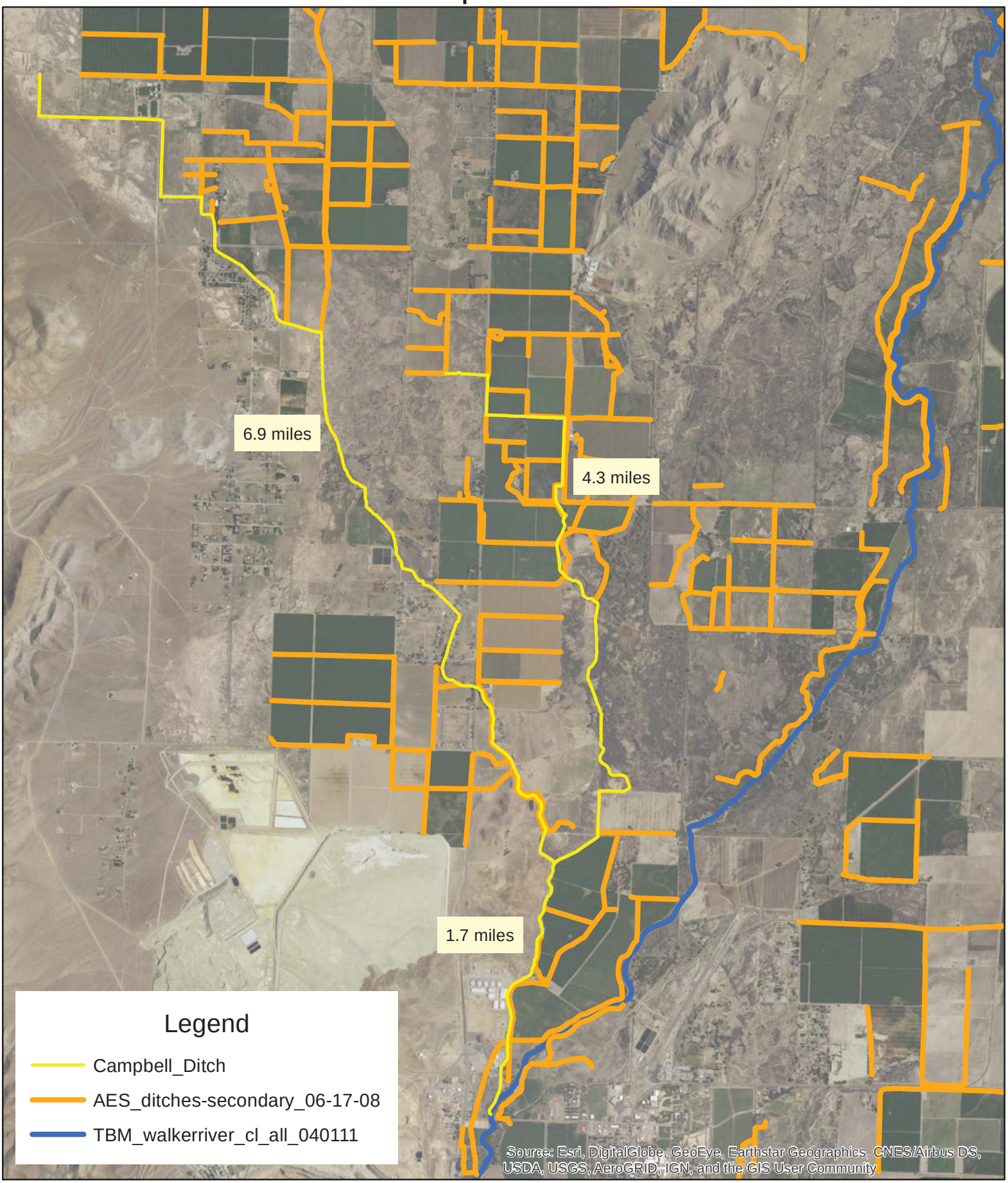
Sincerely,

Gerald D. Robinson
Aqua Systems 2000 Inc.

Campbell Ditch



Campbell Ditch



Walker River Paiute Tribe

1022 Hospital Road • P.O. Box 220 • Schurz, Nevada 89427
Telephone: (775) 773-2306
Fax: (775) 773-2585

April 12, 2018

RE: Campbell Ditch Company/Letter of Support for Grant Application

To Whom It May Concern:

The Walker River Paiute Tribe fully supports the WaterSMART Water and Energy Efficiency Grant (WaterSMART Grant) proposed by the Campbell Canal Company. The improvements proposed will benefit all users along the canal, as well as leaving more water in the Walker River itself.

Automation of the diversion will improve the efficiency of irrigation water delivery by allowing greater accuracy of flow rate, real time monitoring, decreased waste and improved reporting.

The reduced waste in the canal system will result in more water remaining in the river channel, which will in turn provide more water to the downstream users, including our Tribe and Walker Lake, which has great cultural ties to our people.

Respectfully,

Amber Torres

Amber Torres, Tribal Chairman
WALKER RIVER PAIUTE TRIBE

Walker River Irrigation District

Established in 1919

Ed Ryan, District Manager
Mason Valley Conservation District
215 W Bridge St; Ste 11A
Yerington, NV 89447

RE: WaterSMART Water and Energy Efficiency Grant

Dear Mr. Ryan,

The Walker River Irrigation District (WRID) is pleased to submit this letter of support for the WaterSMART Water and Energy Efficiency Grant (WaterSMART Grant) proposed by the Campbell Canal Company. WRID and the Campbell Canal Company have maintained a great working relationship and have completed water conservation projects in the past. WRID fully supports the next steps in modernizing the canal and implementing further water saving efforts along the canal in its entirety.

WRID is optimistic that the coordinated efforts made between our agencies will continue, and that our shared commitment to water conservation will be continue to beneficial to the Walker River Basin.

If you have any questions or comments regarding this letter, please do not hesitate to contact me.

Sincerely,

Bert Bryan
General Manager

U.S. BOARD OF WATER COMMISSIONERS

JOANNE SARKISIAN,
WATER MASTER
410 N. Main Street
Yerington, NV 89447
Phone: (775) 463-3540
Fax: (775) 463-7008

WALKER RIVER
In the District Court of the United States
In and For the District of Nevada
In Equity, Docket No. C-125
The United States of America, Plaintiff
vs.
Walker River Irrigation District, et al.

April 6, 2018

RE: Campbell Ditch Company

To Whom It May Concern:

The Campbell Ditch Co has applied for grant funding for the improvement of the existing ditch system. These improvements will benefit all users along the canal as well and the Water Master, Ditch Rider and River Rider.

The automation of the diversion will create the ability to remotely control the canal through the SCADA system. This will improve the efficiency of irrigation water deliveries by allowing for greater accuracy of flow rate, real time monitoring, decreased waste and improved reporting.

On behalf of the U.S. Board of Water Commissioners I am pleased to support this project and look forward to its completion.

Should you have any questions, don't hesitate to contact me.

Respectfully,

Joanne Sarkisian
Chief Deputy Water Commissioner
WaterMaster

BRIAN SANDOVAL
Governor

STATE OF NEVADA

BRADLEY CROWELL
Director

JASON KING, P.E.
State Engineer

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES
901 South Stewart Street, Suite 2002
Carson City, Nevada 89701-5250
(775) 684-2800 • Fax (775) 684-2811
http://water.nv.gov

April 30, 2018

Mr. Ed Ryan, District Manager
Smith Valley and Mason Valley Conservation Districts
215 W. Bridge St., Suite 11A
Yerington, NV 89447

RE: WaterSMART Water and Energy Efficiency Grant

Dear Mr. Ryan,

The Nevada Division of Water Resources (NDWR) is pleased to submit this letter of support for the **WaterSMART Water and Energy Efficiency Grant (WaterSMART grant)** for the project titled "Campbell Canal Water Conservation Project" proposed by the Mason Valley Conservation District. This office fully recognizes that this proposal will incentivize conservation practices which enhance the basin's water resource.

Furthermore, NDWR believes that this WaterSMART grant proposal will fill a critical niche which supports our conservation efforts within the Walker River basin. Observing the unique water use concerns within the Walker River Basin, we believe that this proposal will ultimately benefit both surface and groundwater water rights. There is a delicate balance of water diverted from both the Walker River and from groundwater wells which supports a diverse network of irrigated crops, including alfalfa, onions, garlic and leafy green vegetables. Because the Walker River basin comprises the largest agricultural district in the State of Nevada, projects which enhance water conservation efforts are invaluable.

We are optimistic that our shared commitment to water management will continue to aide in the conservation and protection the state's most valuable natural resource. If you have any questions or comments regarding this letter please do not hesitate to contact me.

Sincerely,

Jason King, P.E.
State Engineer

Campbell Ditch Company

Board of Director Meeting

January 16, 2018

Present:

David Sceirine	Erik Allison	Jim Snyder	Ed Ryan	Bert Bryan
Henry Moreda	Joanne Sarkisian		Samuel Rubio	Cindy Tibbals
Chad Walling, NSE	Sarah Overton, NSE		Jessica Smith	

Called to order: 1004

Discussion on Phase 2 of the WaterSMART Grant Proposal: SCIERINE advised Phase 2 of the grant proposal would include work on the 4G property and he has requested Samuel Rubio to be present to discuss the work to be done. RUBIO advised the problem is that the property cannot receive water because of where the line is. MOREDA asked whether there are homes on the current pipeline; BRYAN advised there are homes on top of the pipeline. SCEIRINE advised that, if awarded the grant money, the current pipeline would be eliminated and another pipe would be put in place to supply water to the 4G property. SCIERINE advised the owner of 4G needs to understand that there needs to be an easement; RUBIO advised the owner is okay with an easement. RUBIO advised the owner is concerned with children playing in the ditch and under the bridges, so he would like to see something done.

Adjournment: Adjournment at 1008 hours.

Campbell Ditch Company

Annual Stockholder's Meeting

January 16, 2018

Present:

David Sceirine	Erik Allison	Jim Snyder	Ed Ryan	Bert Bryan
Henry Moreda	Joanne Sarkisian		Samuel Rubio	Cindy Tibbals
Chad Walling, NSE	Sarah Overton, NSE		Jessica Smith	

Called to order: 1009

Reading of last year's meeting minutes: This item was tabled.

Treasurer's Report- Bank balance is approximately $30,000.00 with three outstanding bills. Last year's expenses totaled approximately $30,000.00 with Rick Blakely's cleaning expenses totaling $11,207.50 and WRID labor, cell, worker's compensation, and fuel totaling approximately $18,000.00. If the current assessment rate is kept, there should be approximately $40,000 to put toward the WaterSMART Grant.

Delinquent shareholders- There are very few people who owe money; most are very low amounts. There is one account owing $600, but it will be paid up.

Old business-

Rotation and ditch limits- SARKISIAN stated the east and west ditches are separate and should have two different rotations making it easier for the ditch rider. SCEIRINE advised he has given permission to the ditch rider to stop a water order if there is too much water in the ditch. SARKISIAN advised the orders are first come, first serve based on the time the order is received.

Rotation- MOREDA made a motion to keep the ditch limits and rotations the same; SNYDER offered a second. The vote was called for and passed unanimously.

New business:

WaterSMART Grant- Ed RYAN reported that he has been working with WRID, ITRC and other sources in developing a proposal to replace the entire structure at the split with Langemann gates, adding a parshall flume, adding cross regulating structures, placing two culverts downstream of the split, and adding SCADA automation. The current structures are aged and are deteriorating. Phase 1 is approximately $160,000. MOREDA questioned what the max capacity would be; BRYAN advised it would

be based on maximum flows. SARKISIAN advised 115 feet was the most in the ditch last year. SCEIRINE advised the old flashboards are causing problems and the water is not being utilized efficiently. SCEIRINE advised Phase 2 would include piping sections to remedy safety and water loss problems. BRYAN advised there has been data collection and it will continue this year. The ITRC engineers will be given the data and can track the losses and identify the problematic areas. RYAN advised to progress with the application, a resolution is needed from the Board. SMITH read the resolution:

BOARD RESOLUTION

At the meeting of the Board of Directors of the Campbell Canal Company on January 16, 2018, the following resolution was proposed and approved by the board:

Resolved:

WHEREAS the mission of the Campbell Canal Company is to provide a structured system for the delivery of irrigation waters to users within the company;

WHEREAS Campbell Canal Water Conservation Project supports the mission of the Campbell Canal

Company;

That the Campbell Canal Company Board is in full support of a grant proposal to the Bureau of Reclamation for the Campbell Canal Water Conservation Project.

Signed:

David Sceirine, President

SNYDER made a motion to accept the resolution; ALLISON offered a second. The vote was called for and passed unanimously. SNYDER questioned the gate size; the ITRC report states two 8' gates. BRYAN advised the ITRC report is a draft only and could be modified based on what the engineers recommend as a final product.

RYAN offered a brief Phase 2 proposal report. The proposal would include restructuring the ditch where it crosses Highway 95A-N and then west through the empty field to Scarsdale Road, then due north on the west side of Scarsdale until it hits the Penrose subdivision then across the county road then go to the east side on 4G property, then continue north to the sewer plant where it would dump into the original Campbell Canal. That would include placement of 60" pipe for approximately 6830 feet, a junction box at the Hunewill fields, a junction box/air vent at 4G properties, and a diversion and pipe for SCEIRINE's fields. The pipe cost at $1.50 per foot is over $1 million. MOREDA asked if that price includes pipe installation; RYAN advised the price is for the pipe only. RYAN advised he is uncertain how the piping will tie into the junction boxes, but he has spoken with David Peri and David was going to get more information. BRYAN advised he has spoken with Jim Chisum w/ Yerington Ready Mix and he can provide the pre-fab junction boxes. SNYDER questioned how the pipe size was determined; RYAN and BRYAN advised the size is based on the max flow and the recommendation from Dr. Styles with ITRC. RYAN advised the size was originally 42" but there is a high-pressure gas line interfering with the design, so the larger pipe was settled on. WALLING stated he appreciates the information regarding the projects and the Nevada State Engineer's office appreciates the effort to reduce groundwater pumping. SNYDER questioned whether the Board is apt to receive negative feedback. SCEIRINE advised there will be

people mad because the water is leaving, and there will people happy that the water is leaving and the safety risk is eliminated. SNYDER inquired about the legal obligations to the landowners. BRYAN advised the system was in place prior to the subdivision so there should be no ramifications. SCEIRINE advised he is happy with the progression of the grant proposal; RYAN reminded the board that there is a 100% monetary match. SCEIRINE advised there is approximately $29,000 in the bank and the remaining money could be raised quickly via a short-term loan, increased assessment, or a special assessment. RYAN advised now is the time to think about Phase 2 as well. He has looked into programs and the EPA offers a WIFIA grant, but the WaterSMART match cannot be federal money. Another option would be EQUIP from NRCS. SCEIRINE advised he would check on the NRCS options; in the past, the Peri operation could not be funded because of the way it is structured. SCEIRINE advised Phase 1 must be completed whether the grant is awarded or not; the cement is deteriorating and is becoming a danger. MOREDA questioned when the current structure was put in; SCEIRINE advised 1979.

WRID report- BRYAN advised the headworks are finished. The Fresno gates, replugal flumes and data loggers are all in place and are operational. There are sensors below the east and west split on the Peri fields because there were concerns about flows. The data and cross sectional measurements have been collected and will be given to SCEIRINE. SCEIRINE asked if the District is happy with the ditch rider; BRYAN advised Cindy is doing a great job. SCEIRINE would like to see automation and a measuring device at the Campbell Ranch takeouts. BRYAN advised the sites could be surveyed. The chairperson and manager would need to be contacted and the Tribe would have to cover the survey and report. SCEIRINE advised the ditch company could possibly pay a portion of the survey, but the headgate would be the Tribe's responsibility. SNYDER advised the Board cannot require the Tribe to do the project if others along the ditch are not mandated. SCEIRINE advised the Tribe has contacted the Water Master regarding delivery problems. Their measuring devices do not work properly and do not display accurate measurements. BRYAN advised the approach could be that the ditch company is requesting they stay consistent with the modernization along the canal. The WRID technician could go to the takeout and take cross sectional measurements so the ditch company has data to fall back on. SCEIRINE advised he and MOREDA would talk to the chairman and/or the manager.

Discussion on water season: SARKISIAN advised the reservoirs are 90% full and there is a 20% average snowpack. The decree is going to be tough this year. WALLING advised he attended a forecast meeting on Friday and the projection is bleak so far. The watershed would need greater than 70% exceedance for the remaining of the season. WALLING advised the reservoirs are full and the soils are still highly saturated. The projection is that there will not be a high amount of loss via saturation for the beginning of the season, but the higher temperatures may change that. SCEIRINE questioned what the recovery was from last year; WALLING advised the water levels were measured at the end of season 2017; compared to end of season 2016, Smith Valley rose 15 ½- 16 ½ feet; Mason Valley rose 9 ½- 10 feet. The Smith Valley pumping numbers were on track with other wet years and the Mason Valley pumping decreased 40%. WALLING stated some areas of the basin recovered up to 50% of what was lost during the drought. He also warned that we might be on the cusp of the next drought, so keep making alterations to make the surface water go further.

Discussion on stock water: SARKISIAN advised there is a broken gate at the weir that is supposed to be fixed during the first week of February. The pond will need to be lowered prior to the work, so stock water cannot be guaranteed as of February 1st; WRID also has work to do so the canal needs to be dried out. SCEIRINE questioned what work needs to be done on the Wabuska Drain; BRYAN advised a culvert must be replaced. MOREDA advised the water could be diverted on his property. SCIERINE inquired whether the water could be diverted to the Hyland; SARKISIAN advised that would not be an option because the pool at the weir would be too low to supply the water. BRYAN advised a culvert must be fixed on Masini's property. SCEIRINE advised Masini's have cattle; ALLISON advised they have been bringing water via trucks each day.

Discussion on maintenance and cleaning: TIBBALS advised there are a few headgates that could be repaired; they are leaking. TIBBALS reported there are two headgates on David Little's property and two on the Scierine property that leak. SCEIRINE advised one on his property is caved in but seems to hold well. TIBBALS advised the worst one is on David Little's property by the Poli stockyard; currently the water is being measured at the Snyder takeout at the end of Poli Lane. SCEIRINE advised there needs to be a directive from the Board to get the headgates fixed. SCEIRINE directed TIBBALS to take pictures and get them to him. TIBBALS also advised there are a few bad spots, but the water goes around them. At the diversion, the water has to be kept low and there is not an accurate way to measure to ensure both ditches get fair amounts of water. The west does have some debris that needs to be cleaned out. SCEIRINE advised Rick Blakely has offered to do the cleaning again this year. SNYDER made a motion that the Board of Directors is responsible for maintenance and cleaning; MOREDA offered a second. The vote was called for and passed unanimously.

Report and discussion of hiring ditch rider: SCEIRINE stated Cindy TIBBALS is doing a great job; he has heard nothing but positive feedback. SCEIRINE did request of TIBBALS that if help is needed, do not be afraid to ask. MOREDA advised she did call for help on the West Hyland Ditch. TIBBALS advised she does not have any problems to bring to the Board. SARKISIAN advised TIBBALS uses the USBWC vehicle and the Board is billed for fuel and vehicle maintenance. SCEIRINE asked if the cell phone could be billed to the Campbell Canal Company as well; SARKISIAN advised she could start billing for that item. After discussion of the current wage; SNYDER made a motion to increase the salary by 6% making the total $1484 per month; ALLISON offered a second. The vote was called for and passed unanimously.

Open discussion: SARKISIAN advised the Frade Ranches have applied to move surface water to Desert Ranch. They are swapping surface water and underground water. The US Board of Water Commissioner's stance on the application is that it is okay as long as it is okay with the Fox Ditch Company and does not harm other water users. The comments for the underground were already due; the comments for the surface water are due to the State Engineer's Office today. The USBWC submitted a letter for the underground that there were concerns, but as long as they are taken care of, the USBWC was okay with the application. The Fox Ditch Company was concerned that if the Fox Ranch decides not to participate in the rotation, the users at the end of the ditch would be affected. The USBWC did receive a letter from David Peri and Jeff Rife stating they will remain in the rotation. SCEIRINE advised

the reason he had SARKISIAN bring this to the Board was that it may set precedence for future requests. MOREDA confirmed that the application just changes the origin of the water. SARKISIAN advised the application does have to go to Judge Jones. SCEIRINE recommends that the Board trusts the Nevada State Engineer and that they will not allow other users to be hurt.

Open discussion: MOREDA questioned what happens when improvements are made to the canal and the water loss decreases from 30% to 18%; will that affect the users? WALLING advised the 30% was calculated based on a system wide loss average. He does not see any problems with the loss improving based on improvements in the canals, and it may be beneficial as more water is actually getting to the place of use.

Discussion on Liability Insurance: SCEIRINE presented an email from the insurance carrier stating the premium has decreased from $6,072 to $5,920 for the upcoming year. The coverage is still the same as previous years. It would not be beneficial for the Board to seek other options, as it has been done in the past and the current policy offers the best coverage for an affordable amount. MOREDA moved that the Company stay with the existing policies; SNYDER offered a second. The vote was called for and passed unanimously.

Discussion on Assessments: SCEIRINE advised there is approximately $29,000 in the bank account; last year's expenses totaled approximately $32,000 and a significant increase is not expected. MOREDA does not project that the cleaning would be as much this year since last year's cleaning was done so well. SNYDER advised if the assessment is increase by 50% that would leave approximately $45,000 in the bank at the end of this year. MOREDA reminded the Board that whether the WaterSMART grant is awarded or not, the improvements must be made soon. MOREDA suggested setting the assessments so that the money is in the bank when the time comes for the project to begin rather than having a bill at the end of the project and scrambling for money. SNYDER inquired what the current assessment is set at; SCEIRINE advised it is at $5 per acre. SARKISIAN advised it is costing the ditch company $3.60 per acre to maintain. SNYDER made a motion to set the assessment at $6/acre; MOREDA offered a second. The vote was called for and passed unanimously.

Election of officers: MOREDA motioned to keep the officers the same; SNYDER offered a second. The vote was called for and passed unanimously.

Adjournment: SNYDER made a motion to adjourn with a second from ALLISON. The vote was called and passed unanimously. Adjournment at 1159 hours.

BOARD RESOLUTION

At the meeting of the Board of Directors of the Campbell Canal Company on January 16, 2018, the following resolution was proposed and approved by the board:

Resolved:

WHEREAS the mission of the Campbell Canal Company is to provide a structured system for the delivery of irrigation waters to users within the company;

WHEREAS Campbell Canal Water Conservation Project supports the mission of the Campbell Canal Company;

That the Campbell Canal Company Board is in full support of a grant proposal to the Bureau of Reclamation for the Campbell Canal Water Conservation Project.

Signed:

David Sceirine, President