

WaterSMART

Small-Scale Water Efficiency Projects for FY 2021

Notice of Funding Opportunity No. R21AS00300

Genola SCADA System Integration

Genola, Utah

Strawberry Highline Canal Company

Marty Larson, General Manager
1608 American Way
Payson, Utah 84651
mlarson@shlcco.com
Phone: 801-465-4824

Franson Civil Engineers

Lauren C. Ploeger, Project Manager
1276 South 820 East, Suite 100
American Fork, Utah 84003
lploeger@fransoncivil.com
Phone: 801-756-0309

March 18, 2021



3/18/21
1219

Table of Contents

Technical Proposal and Evaluation Criteria	3
Executive Summary	3
Project Summary:	3
Project Location.....	3
Project Description	5
Evaluation Criteria.....	5
Evaluation Criterion A: Project Benefits (35 Points).....	5
Evaluation Criterion B: Planning Efforts Supporting the Project (35 points)	7
Evaluation Criterion C: Project Implementation (10 points).....	8
Evaluation Criterion D: Nexus to Reclamation (10 points).....	9
Project Budget	10
Funding Plan and Letters of Commitment.....	10
Budget Proposal.....	11
Budget Narrative.....	12
Salaries and Wages	12
Fringe Benefits.....	13
Travel.....	13
Equipment.....	13
Materials and Supplies.....	13
Contractual.....	13
Third-Party In-Kind Contributions	13
Environmental and Regulatory Compliance Costs	13
Other Expenses	14
Indirect Costs.....	14
Environmental and Cultural Resources Compliance	14
Required Permits or Approvals	15
Official Resolution	15

Appendices

Appendix A – Signed Official Resolution

Technical Proposal and Evaluation Criteria

Executive Summary

Date: March 18, 2021

Applicant: Strawberry High Line Canal Company, Genola, Utah County, Utah

Project Title: Genola SCADA System Integration

Category: Category A

Project Summary:

The Strawberry High Line Canal Company (SHLCC) located in south Utah County, Utah, will upgrade and integrate their SCADA system using a series of new meters and advanced metering infrastructure (AMI). SHLCC has historically delivered irrigation water for agricultural purposes. Due to development throughout their large service area, SHLCC now finds itself serving several residential connections in locations where there had once been a single agricultural connection. SHLCC is seeking an efficient method of gathering measurement data and monitoring their system remotely. Specifically, in the Town of Genola, Utah, SHLCC will be adding five magnetic flow meters to the outlet pipes of some irrigation storage ponds and installing meter interface units (MIUs) to existing meters at 55 residential connections. Two remote SCADA sites and one repeater station will also be installed. The main benefit of this project will be improved water management. The installation of this equipment will help maintain an already large and expanding system and will complement the other SCADA equipment that already exists throughout the system. Through remote data acquisition, SHLCC will save significant time obtaining measurement data. Additionally, the MIUs have the capability for leak and backflow detection.

Approximate Length: 18 months

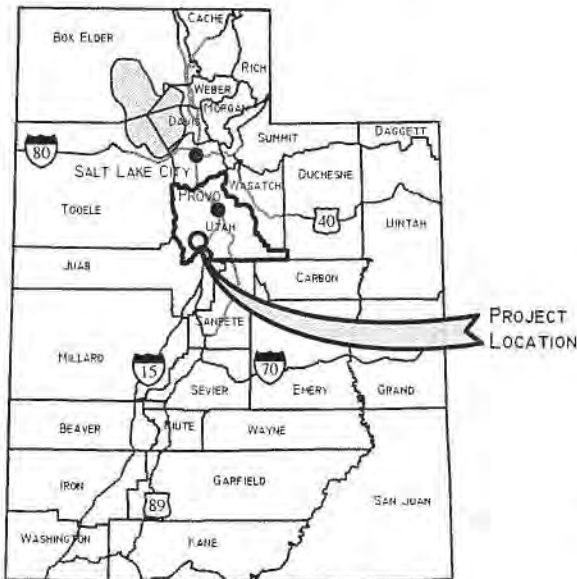
Construction Start Date: Spring 2022

Completion Date: Fall 2023

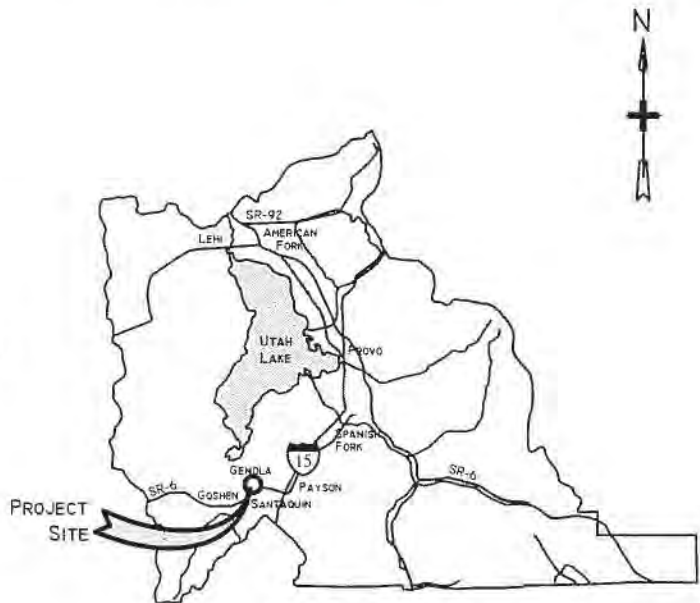
Federal Facility: The High Line Canal is a facility of the Strawberry Valley Project

Project Location

The SHLCC Genola SCADA System Integration Project is located in Genola, Utah. The project latitude is 39°59'48" N and longitude is 111°50'36" W. See Figure 1 on following page.



State of Utah



Utah County



DATE: MARCH 16, 2021
 SCALE: 1" = 7000'
 Genola Location Map.dwg
 C:\Users\vcoppom\Documents\Figure for Genola

STRAWBERRY HIGH LINE CANAL COMPANY
 WATERSMART: SMALL-SCALE WATER
 EFFICIENCY PROJECT

FIGURE 1 - LOCATION MAP
 GENOLA SCADA
 SYSTEM INTEGRATION PROJECT

Project Description

The purpose of the Genola SCADA System Integration Project is to add additional remote data acquisition equipment to portions of the High Line Canal system within Genola, Utah. The new equipment will complement the existing SCADA System already in place throughout the SHLCC service area. Genola is located at the western end of the canal system and is served out of Laterals 31 and 34, as well as a pipe along 400 North in Genola, as shown in Figure 1. Several years ago, WaterSMART funding was used to pipe the 400 North ditch to deliver irrigation water to new residential development.

The proposed project consists of three parts. First, at the north end of Lateral 34, there is an irrigation pond with two outlet pipes. Magnetic flow meters will be installed on each of the outlet pipes. One will be a 16-inch meter, and the other will be a 12-inch meter. A traditional SCADA station will be installed to gather meter data from the two meters and to transmit the data remotely to the existing SHLCC SCADA System. Due to the location of this site, a repeater station will also be installed.

Second, Ewell Ponds are located at the southern end of Lateral 31. There are three outlet pipes that need to be measured. One 12-inch and two 16-inch magnetic flow meters will be installed to measure flow from the three outlets from Ewell Ponds. A traditional SCADA station will be installed to gather meter data and to transmit the data remotely to the existing SHLCC SCADA System.

Third, two new residential subdivisions have been developed that are served by the 400 North pipeline. There are a total of 55 lots in the two subdivisions. As the lots have been built out, meters have been installed at each connection. SHLCC will be implementing advanced metering infrastructure (AMI) to facilitate reading of the meters. Meter interface units (MIUs) will be installed at each meter. Through cellular service, data from the MIUs will be transmitted to a mobile app.

The Genola SCADA System Integration Project consists of SHLCC purchasing the necessary materials and supplies, receiving installation training and assistance for both the SCADA sites and AMI units, and performing the installation themselves.

Evaluation Criteria

Evaluation Criterion A: Project Benefits (35 Points)

Describe the expected benefits and outcomes of implementing the proposed project. What are the benefits to the applicant's water supply delivery system?

The main benefit of this project is increased water management and water use efficiency resulting from accurate measurement and real-time data acquisition.

The canal company benefits in multiple ways. First, having remote measurement equipment saves SHLCC time and money associated with having to travel and manually read meters. Especially now that agricultural areas are being replaced with residential subdivisions, the number of meters to read is increasing throughout their large system. Next, the additional measurement devices provide more information as to how much water is being used and where it is going. Meter data can be used to calculate water loss due to theft, leakage, or overflow. Lastly, the remote data acquisition allows

SHLCC to gather data more frequently as it is automatically transmitted to a website on an hourly or daily basis as determined by the needs of the canal company. This real-time data can be used to analyze water usage and historic patterns to detect leaks or other issues. The proposed AMI units have the ability to set alarms for leak detection or reverse/zero flow detection.

The water users themselves will also benefit from the proposed project. The AMI units are linked to a mobile app that can be accessed by each individual user to see and track their own water usage. This knowledge should lead to more efficient use. This project will also serve as a template for future residential subdivisions within the SHLCC that will be required to implement AMI.

If other benefits are expected, explain those as well. Consider the following:

- *Extent to which the proposed project improves overall water supply reliability*

The proposed project improves overall water supply reliability by allowing the canal company to have more knowledge regarding how water is used in the Genola area. By better managing the water in this section of the system, more water could be available throughout the system. As theft, leakage, and/or overflow issues are detected, SHLCC will be able to respond more quickly, therefore resulting in water not being wasted but being available in other areas of the system.

- *The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)*

The immediate benefits of the project will be localized to the Genola area; but as stated above, the entire canal company could be benefited indirectly.

- *Extent to which the proposed project will increase collaboration and information sharing among water managers in the region*

SHLCC maintains a website where data from their SCADA system is posted. Data from the proposed project would also be posted to the website and available to anyone who desires it. Those who would most likely benefit from this information would be other participants of the Strawberry Valley Project and Central Utah Project who share the same water source.

- *Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)*

As stated above, this project will benefit the agricultural users along the High Line Canal system.

- *Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the district's water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.*

There is no direct correlation between this project and NRCS projects in the area.

Evaluation Criterion B: Planning Efforts Supporting the Project (35 points)

Describe how your project is supported by an existing planning effort. Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?

SHLCC has adopted a Water Management and Conservation Plan (WMCP) in order to improve overall water management and conserve water. Implementing the measures in the WMCP allows SHLCC to supply Reclamation water more efficiently to lands within its boundaries. The issues and goals identified in the WMCP are tabulated below.

ISSUE	GOAL
Lack of data regarding water in system	Determine flows and develop a water budget, therefore better management
Water loss due to theft, leakage, or overflow	Determine water loss locations and amounts
Canal Safety	Risk assessment and reduction
Efficiency and optimization of the system	Improved water delivery and reduced lag times
Urbanization changes	Continued development of infrastructure and increased communication and coordination with surrounding cities and water users
Education and water conservation	Conservation through education of users

The proposed project addresses many of these identified issues and goals. One problem that SHLCC has is monitoring their system because it is so large. Serving over 17,500 acres that spread over a half-dozen communities, measurement devices and SCADA equipment has been implemented in phases. This project is the next step in adding additional measurement devices that could help SHLCC develop a water budget.

Specifically, in the Genola area, the proposed project could help SHLCC determine amounts and causes of water loss, particularly with respect to the water used out of Ewell Ponds and Pond 34-32 at the end of Lateral 34.

SHLCC has long understood that urbanization was a key issue. This project addresses that specifically by installing modern AMI technology to better manage residential irrigation. Water conservation is a likely consequence of educating those users through the availability of the AMI data.

Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.

The first measure identified in SHLCC’s WMCP to address the issues and goals was to install measurement devices that would be linked to the SCADA System. It was prioritized as the highest measure on the implementation schedule following ongoing measures of education and risk assessment.

Evaluation Criterion C: Project Implementation (10 points)

Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

The following table provides a milestone schedule for implementing the proposed project.

MILESTONE/TASK/ACTIVITY	PLANNED START DATE	PLANNED COMPLETION DATE
Final Selection of SCADA and AMI Equipment	January 1, 2022	March 31, 2022
Environmental Compliance	January 1, 2022	March 31, 2022
Installation of Meters, SCADA Sites, and AMI units	April 1, 2022	October 31, 2023
Final Calibration of Equipment and Project Closeout	November 1, 2023	December 31, 2023

Pending notification of the success of this grant application, SHLCC will proceed with final selection of project proponents and working with Reclamation on environmental compliance on January 1, 2022. Since some of the project components, such as meters, cannot be installed during the irrigation season, a limited amount of installation could begin in the spring or summer of 2022. Most likely, the majority of the construction will occur between October 2022 and April 2023. Remaining items could be completed in the fall of 2023.

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

No permits should be required.

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

Minimal design work and engineering will be required to implement this project. Selection of SCADA and AMI equipment will be finalized between SHLCC and the material suppliers once the

grant is awarded. The suppliers will then offer installation training and implementation assistance during construction.

Describe any new policies or administrative actions required to implement the project.

No new policies or administration should be required. However, SHLCC currently has in place policies related to overuse and abuse of water use. This project will aid SHLCC in enforcing those policies.

Describe the timeline for completion of environmental and cultural resource compliance. Was the timeline for completion of environmental and cultural resource compliance discussed with the local Reclamation office?

It is expected that the environmental compliance for this project will fall under the requirements of a categorical exclusion. The applicant acknowledges that the project will need to be reviewed by Reclamation and the appropriate level of environmental compliance will be determined. It is expected to conduct a cultural resources survey and any other environmental surveys deemed necessary. Based on the anticipated schedule outlined above, there should be ample time to complete the environmental compliance between award of the project grant and construction. An initial conversation regarding this project and the necessary environmental compliance has been discussed with the local Reclamation office in Provo, Utah.

Evaluation Criterion D: Nexus to Reclamation (10 points)

How is the proposed project connected to a Reclamation project or activity? Please consider the following: Does the applicant receive Reclamation project water?

Yes. The Strawberry High Line Canal Company delivers water from the Strawberry Valley Project (SVP) and the Central Utah Project (CUP). SHLCC entered into an agreement with Reclamation and has received water since 1916 to deliver an average annual supply of 39,500 ac-ft of SVP water to 17,500 acres of land in southern Utah County. SHLCC also receives 6,500 ac-ft of water from the CUP, another Reclamation project, and has contracts with Reclamation for operation. SHLCC services Payson, Genola, Salem, Spring Lake, and West Mountain. The system delivers 3,500 ac-ft of the SVP water as irrigation water to secondary connections in Payson and Salem serving approximately 22,000 people. SHLCC also has approximately 3,000 ac-ft of well water, uses approximately 1,800 ac-ft of their return flow right, and approximately 6,000 ac-ft of water from Spanish Fork and Payson Canyons. The total average annual delivery is 56,800 ac-ft of water.

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

Yes. The High Line Canal system is a Reclamation facility used to deliver municipal and irrigation water. The main section of the concrete-lined canal diverts water out of the Spanish Fork River and travels approximately 18 miles to the southwest through the communities of Spanish Fork, Salem, Payson, Santaquin, and Genola. An additional 60 miles of laterals are used to convey water throughout the area. Over the years, SHLCC has worked with Reclamation to update and improve the management of the canal system. Several projects have been completed to pipe portions of the system for conservation and safety, as well as to enhance the measurement and efficient use of the water through SCADA equipment. The purpose of this project is to continue those objectives in the Genola area of the system.

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

Yes. See above.

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

Yes. See above.

Will the project benefit any tribe(s)?

Not directly.

Project Budget

Funding Plan and Letters of Commitment

Describe how the non-Federal share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability.

Please identify the sources of the non-Federal cost-share contribution for the project, including: Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments)

Any costs that will be contributed by the applicant

SHLCC will be responsible for the non-Federal cost share contribution for the proposed project. This will occur mostly through in-kind contribution of labor associated with installation of the proposed SCADA equipment. Any monetary contributions provided by the applicant will be from assessments.

Any third-party in-kind costs (i.e., goods and services provided by a third party)

No goods or services will be provided by a third-party.

Any cash requested or received from other non-Federal entities

No cash will be requested or received from other non-Federal entities.

Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied

There are no pending funding requests from other sources. SHLCC is dependent on this grant to implement this project.

In addition, please identify whether the budget proposal includes any project costs that have been or may be incurred prior to award. For each cost, describe: The project expenditure and amount, the date of cost incurrence, and how the expenditure benefits the project.

No pre-award costs have been included in the budget proposal.

Budget Proposal

The total project cost (Total Project Cost), is the sum of all allowable items of costs, including all required cost sharing and voluntary committed cost sharing, including third-party contributions, that are necessary to complete the project (Table 1). Applicants must include the costs of all equipment, materials and supplies, and labor required to complete the project in the budget proposal (Table 2).

Table 1 – Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$54,000
Costs to be paid by the applicant	\$54,000
Value of third-party contributions	\$0
TOTAL PROJECT COST	\$108,000

Table 2 – Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/UNIT	QUANTITY		
Salaries and Wages				
General Manager	\$ 38.73	15	Hour	\$ 580.95
Office Assistant/Accountant	\$ 28.45	15	Hour	\$ 426.75
Operator 1	\$ 35.83	420	Hour	\$ 15,048.60
Operator 2	\$ 23.41	420	Hour	\$ 9,832.20
Fringe Benefits				
General Manager	\$ 7.29	15	Hour	\$ 109.35
Office Assistant/Accountant	\$ 13.34	15	Hour	\$ 200.10
Operator 1	\$ 16.91	420	Hour	\$ 7,102.20
Operator 2	\$ 13.17	420	Hour	\$ 5,531.40
Travel				
None				

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/UNIT	QUANTITY		
Equipment				
Excavator	\$ 160.00	50	Hour	\$ 8,000.00
Backhoe	\$ 80.00	55	Hour	\$ 4,400.00
Supplies and Materials				
AMI Readers	\$ 360.00	55	Each	\$ 19,800.00
AMI Installation Kit	\$ 3.00	55	Each	\$ 165.00
16-inch Magnetic Flow Meter	\$ 4,934.00	3	Each	\$ 14,802.00
12-inch Magnetic Flow Meter	\$ 3,681.00	1	Each	\$ 3,681.00
10-inch Magnetic Flow Meter	\$ 2,933.00	1	Each	\$ 2,933.00
Meter Cables	\$ 35.29	5	Each	\$ 176.45
Remote SCADA Site	\$ 1,775.01	2	Each	\$ 3,550.02
SCADA Base Station/Repeater	\$ 3,428.39	1	Each	\$ 3,428.39
Contractual/Construction				
AMI Installation Assistance	\$ 1,000.00	3	Day	\$ 3,000.00
SCADA Installation Assistance	\$ 2,500.00	1	Lump Sum	\$ 2,500.00
Other				
Environmental Compliance	\$ 2,732.59	1	Lump Sum	\$ 2,732.59
TOTAL DIRECT COSTS				\$108,000.00
Indirect Costs				
None				
TOTAL ESTIMATED PROJECT COSTS				\$108,000.00

Budget Narrative

Salaries and Wages

Hourly estimates for salaries and wages came directly from SHLCC payroll records. These rates are consistently applied to Federal and non-Federal activities.

Time has been estimated for the general manager and office assistant to prepare the required financial and performance reports throughout the project. It was estimated that each would spend 3 hours on

each report. Given a two-year window to complete the project, this would require four semi-annual reports and one final report. The salaries and wages and fringe benefits associated with these tasks have been included on SF-424C as Administrative.

Time has been estimated for two operators to install the AMI and SCADA equipment. This is based on the expectation that it will take each operator ten hours to install each meter and 4 hours to install each AMI unit. The salaries and wages and fringe benefits associated with these tasks have been included on SF-424C as Site Work.

Fringe Benefits

Hourly estimates for fringe benefits came directly from SHLCC payroll records. The hours correspond to those included in the Salaries and Wages section.

Travel

No travel expenses have been included in the budget proposal.

Equipment

SHLCC will use their own equipment to install the meters, SCADA sites, and MIUs. Their accepted billing rates for such equipment have been included in the budget proposal. These costs have been included on SF-424C as Equipment.

Materials and Supplies

SHLCC has researched several types of AMI units and received quotes from various suppliers on options for MIUs, magnetic flow meters, and other SCADA equipment. The costs associated with these items have been included on SF-424C as Construction.

Contractual

Subject to selection of SCADA and AMI equipment, the material suppliers will offer installation training and implementation assistance. These charges will be part of the bid for materials but have been separated out in the budget proposal. The costs associated with these tasks have been included on SF-424C as Other Engineering.

Third-Party In-Kind Contributions

There will be no third-party in-kind contributions.

Environmental and Regulatory Compliance Costs

Approximately 2.5% of the project costs have been estimated for the applicant's portion of environmental compliance costs. This amount should cover a cultural resources survey and

preparation of a project description and environmental resources summary. The costs associated with these tasks have been included on SF-424C as Miscellaneous.

Other Expenses

No other expenses have been included in the budget proposal.

Indirect Costs

No indirect costs have been included in the budget proposal.

Environmental and Cultural Resources Compliance

Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why.

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The main aspect of this project is to install SCADA equipment on existing facilities within the SHLCC system. Minimal ground disturbance will be necessary for installation of AMI units, SCADA collection sites, and the small number of meters.

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

As this project would be implemented in previously disturbed and developed areas, there are no species or habitat that should be affected.

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

No wetlands or Waters of the United States should be affected by the proposed project.

When was the water delivery system constructed?

The High Line Canal system was constructed in about 1915.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were

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

The project will install meters on existing pipes from Ewell Ponds which were constructed around 1977. The proposed AMI units will be installed on recently installed meters within new subdivisions.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

No sites eligible for listing on the National Register of Historic Places should be affected by the proposed project.

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

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

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

No.

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

No.

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

No.

Required Permits or Approvals

No permits or approvals are needed for the scope of this project.

Official Resolution

The signed Official Resolution is shown in Appendix A.

.

Appendix A

Signed Official Resolution

OFFICIAL RESOLUTION
of
STRAWBERRY HIGH LINE CANAL COMPANY

RESOLUTION NO. 2021 - 4


WHEREAS, the United States Department of the Interior, Bureau of Reclamation has announced the *WaterSMART Grants: Small-Scale Water Efficiency Projects (R21AS00300)* in order to conserve and use water more efficiently, mitigate conflict risk in areas at a high risk of future water conflict, and accomplish other benefits that contribute to water supply reliability in the western United States, and has requested proposals from eligible entities to be included in the WaterSMART Program, and

WHEREAS, Strawberry High Line Canal Company has need for funding to implement a SCADA system integration project which will improve the overall measurement and management of their water supply.

NOW, THEREFORE, BE IT RESOLVED that the **Strawberry High Line Canal Company Board of Directors** agrees and authorizes that

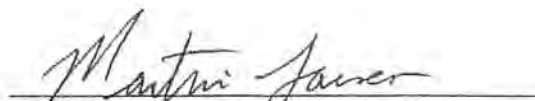
1. The Strawberry High Line Canal Company Board of Directors has reviewed and supports the proposal submitted;
2. The applicant is capable of providing the amount of funding and/or in-kind contributions, specified in the funding plan; and
3. If selected for a WaterSMART Grant, the applicant will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

DATED: March 3, 2021



Mark Dehart, President

ATTEST:



Martin Larson, Secretary