

# WaterSMART Grants: Small-Scale Water Efficiency Projects for Fiscal Year 2019

Funding Opportunity Announcement No. BOR-DO-19-F005

## Cortaro Water Users' Association

As Agents for

## Cortaro-Marana Irrigation District

12253 West Grier Road, Marana, Arizona 85653



## Supervisory Control & Data Acquisition (SCADA) Project Phase 3

Project Manager: Doug Greenland

Address: 12253 West Grier Road, Marana, Arizona 85653

E-mail: [cmid12253@comcast.net](mailto:cmid12253@comcast.net)

Telephone: 520-682-3233

# Table of Contents

Technical Proposal and Evaluation Criteria	
Executive Summary .....	3
Date, Applicant Name, City, County and State .....	3
Project Summary .....	3
Length of Time and Estimated Completion Date .....	3
Federal Facility .....	3
Background Data .....	4
Project Location .....	5
Technical Project Description .....	5
Evaluation Criteria .....	6
Evaluation Criterion A - Project Benefits .....	6
Evaluation Criterion B - Planning Efforts Supporting the Project .....	7
Evaluation Criterion C - Project Implementation .....	8
Evaluation Criterion D - Nexus to Reclamation .....	9
Evaluation Criterion E - Department of the Interior Priorities .....	10
Project Budget .....	10
Funding Plan and Letters of Commitment.....	10
Summary of Non-Federal and Federal Funding Sources.....	11
Budget Proposal .....	11
Budget Narrative .....	12
Environmental and Cultural Resources Compliance .....	12
Required Permits or Approvals .....	13
Official Resolution .....	13
Unique Entity Identifier and System for Award Management.....	13
<b>Appendix</b>	
Appendix Attachment A – Map of Project Sites .....	14
Appendix Attachment B – Map of Cortaro-Marana Irrigation District .....	15
Appendix Attachment C – Map of Cortaro Water Users’ Association .....	16
Appendix Attachment D – SCADA Master Plan Summary.....	17
Appendix Attachment E – Official Resolution.....	20

# Technical Proposal and Evaluation Criteria

## **Executive Summary**

*Date:* April 20, 2019

*Applicant name:* Cortaro Water Users' Association (CWUA) as Agents for Cortaro-Marana Irrigation District (CMID)

*City, County, State:* Marana, Pima, Arizona

## **Project Summary**

The proposed project is phase 3 of a Supervisory Control and Data Acquisition (SCADA) plan. This phase will connect eight additional wells of the Cortaro-Marana Irrigation District (CMID) to the system. Software and a computer for the system were purchased in Phase 1 as part of a small-scale water efficiency project grant from the Bureau of Reclamation's WaterSMART program. Phase 2, which will connect 6 wells to the system is funded by a grant from the Arizona Department of Water Resources, Groundwater Users Association Council and be completed in the winter of 2019.

This project will facilitate the installation of a SCADA system on 8 wells. The well numbers are, 4, 5, 7, 10, 16D1, 16D2, 16L, and 21C1. See attachment A for Location of the well sites. These wells were chosen based on their usage, difficulty of access during storms, and the time savings that will be realized by the District's employees. Three new starters will need to be purchased and installed, on wells 4, 5, and 21C1. Wells 10, 16D2, and 16L have already had new starters that are compatible with the SCADA program installed on them and Well sites 16D1 and 7 have had the new starter installed in the last 30-90 days. Antennas, remote terminal units and additional electronic wiring/configuration of the systems will be needed at all 8 wells. Upon completion of the project the wells will be able to be started and stopped remotely, as well as programmed to come on or go off at a set time. Alarm conditions at the well will be immediately sent to notify District personnel of the issue. This control will make it easier to time water deliveries and eliminate excess water being pumped as employees won't need to be at the well site to turn it on or shut it off.

## **Length of Time and Estimated Completion Date**

If authorization is received during the summer of 2019, environmental clearance could be completed in early fall and we could begin installations as early as November 2019 with completion of the project by March 2020. If project authorization or environmental clearance takes longer than a few months we could still begin during the 2019 winter or 2020 early spring, but completion could be delayed until spring of 2021 due to only be able to work on each well when it is not being used to supply irrigation water.

## **Federal Facility**

The proposed SCADA Project will not be on a Federal facility.

## **Background Data**

The Cortaro Water Users' Association (CWUA) is the agent for the Cortaro-Marana Irrigation District (CMID) who owns all the assets of the District. The District was organized in 1964 and the Cortaro Water Users' Association which has been known by various names was first organized in 1918 as Cortaro Farms. In 1946 holdings and land were sold to individuals and the Cortaro Water Users' Association was incorporated.

Currently CMID has a groundwater savings facility permit, a recovery well permit, and certificates of water rights. The groundwater savings facility can store up to 20,000 acre-feet of in-lieu water if the total withdrawn for the district is under 60,000 acre-feet. Certificate 33-43288 allows for 1800 acre-feet from the Santa Cruz River and Certificate 1292 allows for 29,190 acre-feet of appropriative surface water. Water withdrawn from wells in the lower part of the district is classified as groundwater.

The staff of CWUA maintains ditches, canals, and 43 wells and 3 pumps serving 10,950 acres of farm land in Pima County, Arizona. Delivered water has averaged over 41,000 acre-feet over the last 5 years, with 10-15,000 acre-feet being in-lieu water that is delivered by the Central Arizona Project and stored for customers including the Bureau of Reclamation, Arizona Water Banking Authority, Ak-Chin Indian Community, Metro Water and others. Water deliveries varies based on crops and rainfall but is within +/- 5% of the average. Cotton and alfalfa are the main crops with wheat, barley, corn, and sorghum also being grown as crops are rotated. CWUA also maintains a pressurized non-potable system that provides landscaping water to 1193 homes, as well as parks and homeowners' associations in the area. This allows potable water providers to conserve their treated water. The system has one supply tank with a capacity of 220,000 gallons, and 3 pumps that can supply up to 1200 gpm.

The water delivery system for the irrigation of farm land consists of 65 miles of canals and pipelines. This includes 12 miles of underground cement and HDPE pipelines and 53 miles of open cement lined canals. The non-potable system consists of 16.5 miles of PVC pipelines with another .4 miles to be added in the next year. There are approximately 95 irrigation turnouts. Currently a SCADA system has been installed on 2 wells and is accessible from the office. The Arizona Department of Water Resources, Groundwater Users Advisory Council has also awarded the District \$75,000 for SCADA which will allow an additional 6 wells to be connected to the system.

For 2018 CMID stored 2,000 acre-feet of in-lieu water for the Bureau of Reclamation and 1,095 acre-feet for the Ak-Chin Indian Community as well as for other municipal water companies. The water for our in-lieu water customers is delivered to the District by the Central Arizona Project (CAP) canal. CMID has been using the CAP canal to deliver water for storage for 21 years.

## **Project Location**

The CWUA SCADA project is in Northern Pima County, Arizona in the Northwest part of the Town of Marana. See appendix, attachments B and C, for maps of the District and Water Users' boundaries. The latitude and longitude of the district office is 32 degrees 27 minutes 11.3 seconds North and 111 degrees 13 minutes and 34.7 seconds West.

## **Technical Project Description**

The proposed project will give canal riders and District staff immediate remote contact with wells 4, 5, 7, 10, 16D1, 16D2, 16L, and 21C1, using Supervisory Control & Data Acquisition (SCADA) technology, utilizing both desktop and mobile technology. See attachment A, for a map of the well locations. Real-time access will maximize data collection which will lead to well-informed, fact-driven decisions, ultimately increasing reliability of the water delivery systems and saving water in a drought-stricken area. The SCADA installation will provide for the automatic shut down and turn on control of the wells, as well as the sending of alarm notifications. All of which will provide real-time response to help save water, energy and reduce costly repairs caused by flooding.

Project Milestones include:

- August 2019 notification of grant approval

- October 2019 environmental compliance complete

- November 2019-March 2020 Installation and testing of antennas and remote terminal units.

Three new starters will need to be purchased and installed, on wells 4, 5, and 21C1. Wells 10, 16D2, and 16L have already had new starters that are compatible with the SCADA program installed on them and Well sites 16D1 and 7 have had the new starter installed in the last 30-90 days. Some new wiring of these starters to connect them to the remote terminal units will be required and an antenna will need to be installed at each site to allow communication with our main office. Automatic oil drippers will also need to be installed on each well. The environmental compliance should not be an issue as all sites are existing well sites owned by CMID, and the remote terminal units will either be installed in existing electrical cabinets or a new cabinet will be placed on the electrical rack near the well. Testing of the antenna reception will need to be completed and any inadequate reception may result in a well with better radio reception being chosen to replace the well with poor reception. However, wells with poor reception will be picked up in later phases as the network of wells connected expands.

Current CWUA delivery systems require canal riders and staff to travel to a well site to manually turn-on, shut-off, check to see if a pump is running, and to look for alarm conditions. Some of our well sites are in remote areas and others are in locations that can become inaccessible when rain occurs. Delayed responses result in, flooding, pumping of unneeded water, and damage to District assets. Power brown outs are year-

round occurrences that also require manual checking of each well that was being used to see if it is still running. The farmers in the area use siphon hoses to get water from their canal to their fields. When water levels drop due to pumps going down, they must reset all their siphon hoses once the water levels return. If this occurs in the evening or at night the pipes won't be reset until morning causing wasted water as the water won't siphon into the field at the lower levels. With the SCADA system in place we will be able to immediately know which wells went down, troubleshoot them and restart them or other wells to keep things running smoothly. Timely information is critical when obtaining control, conserving water, and providing reliable service. This project is Phase 3 of our SCADA implementation. See attachment D, SCADA Master Plan Summary for a complete list of all phases.

### **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?*

Benefits of this project include the ability to remotely turn on and off wells in the event of severe weather, or if the canal rider is not immediately available in the area. The SCADA system will also allow us to schedule well start and stop times for when no one is around. The system can also send alarm notifications immediately notifying District personnel of any issues. This will be very helpful during the frequent power brown outs. The wells for this project were chosen based on their usage, difficulty of access during storms, and the time savings that will be realized by the District's employees. This will conserve water by allowing us to immediately stop or start a well and only deliver water where and when it is needed. This is especially helpful during monsoon season where one area of the district may need immediate shut off due to heavy rains and other areas may need to be restarted after a power failure to continue with irrigation. Shutting off the pumps in flooded areas will also prevent damage to the pumps and motors that could occur if they are left running.

*If Other benefits are expected explain those as well. Consider the following:*

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

The SCADA system will provide for a much more reliable irrigation system as it will allow wells to be turned on and off no matter where the canal riders are. When water deliveries are turned on, they need to be timed to arrive at the given field at a specific time when the farmer is ready and available to take it. Likewise, when they are turned off it is critical to time the well shut off. If wells are not turned on or shut off at the appropriate time it can result in flooding or lack of water and the need to reset siphon tubes for nearby farmers. Currently we only find problems when a canal rider visits that location or when a customer calls to complain. Most of the time we find out about wells being down from customers who call to complain about low/no water. Due to time constraints the canal rider can only visit each site 2-3 times a day.

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

This project will save the district money by conserving water and electricity, by enabling us to shut-off wells remotely so that they are only running for the exact amount of time that they are needed. The unused water will remain in the aquifer, for later use by us and other local water companies. The District is located along the Lower Santa Cruz River and within the Tucson Active Management Area (AMA) which is managed by the Arizona Department of Water Resources (ADWR). Saving groundwater in this area has been a focus of the state since 1980 and with the extreme drought and low reservoir levels in the lower Colorado River Basin it is even more critical today. The Bureau of Reclamation and ADWR are currently working on Drought Contingency Plans that include this area.

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

The construction and results of this project will be shared with the Avra Valley Irrigation District, the Red Rock Irrigation District and the Town of Marana. CWUA board members/landowners serve on these irrigation district boards as well as the Town Council. Collaboration between these entities is already occurring and will continue going forward.

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

This project will help the district to better control costs which will help agriculture in the area remain competitive by delivering water where and when it is needed to maximize crop yield.

*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.*

Currently there are no active projects with the NRCS. CWUA members have used them in the past for help with land leveling and ditch construction and it is anticipated that they will use them for similar projects in the future. We do participate in the Tucson, Arizona Active Management Area Groundwater Users Advisory Council meetings which promote the conservation of water for the Tucson AMA.

## **Evaluation Criterion B – Planning Efforts Supporting the Project (35 Points)**

*Describe how your project is supported by an existing Planning effort.*

This project is the result of a system analysis project done by the District and George Cairo Engineering. This is the third phase in a multi-phase plan to implement electronic

controls across the district. These wells were chosen based on their usage, difficulty of access during storms, and the time savings that will be realized by the District's employees. See Appendix D for the District Plan title page, table of contents, and a summary of the SCADA plan.

*Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?*

The system analysis revealed that the negative effects of delays in turning on and off wells and problem notification could be solved by having a Supervisory Control and Data Acquisition (SCADA) system with the immediate ability to receive system error messages and turn on and off wells. This will save water and energy, as well as prevent possible damage to the system.

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

The system analysis looked at where SCADA controls would be the most helpful, and where they could be implemented given radio signals, well usage, site access, and time savings to District employees. These considerations determined which wells will be implemented during the third phase.

**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.*

<b>Major Tasks</b>	
<b>Date</b>	<b>Description</b>
Aug 2019	Notification of Grant award
Sept 2019	Determine electrical layout & antenna placement for each site
Sep 2019	Determine Radio connectivity between sites and office
Oct 2019	Environmental Compliance Completed
Nov 2019-Feb 2020	Installation of Hardware at all Sites
Jan-Mar 2020	Testing of system, Complete Punch list items

This schedule is based on approval by August 2019. If approval is delayed beyond this, it may require parts of the installation to wait until Fall/Winter of 2020 when our water deliveries are at their lowest point.

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

In checking with the Town of Marana, no permits are anticipated for this work.

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

George Cairo Engineering has been involved with the development of the SCADA Master Plan, Evaluation of Vendors and determining the site priority. Interactive Controls will be providing the hardware and design work for the SCADA system as they have already done work for the first two phases.

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

Meetings to follow-up on tasks, and assignments will be held with staff and contractors. Training will need to be done to teach the canal riders and staff how to view and operate the SCADA equipment remotely.

*Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?*

The environmental compliance estimate was developed in consultation with Jessica Asbill-Case of the local Phoenix Bureau of Reclamation office. Installation will be on current CMID sites, little or no environmental issues are anticipated.

#### **Evaluation Criterion D – Nexus to Reclamation (10 Points)**

*Is the proposed project connected to a Reclamation project or activity? If so how?*

*Please consider the following:*

*Does the applicant receive Reclamation project water?*

CMID is the facility operator for the Lower Santa Cruz managed recharge project in which the Bureau of Reclamation participates and receives storage credits for their portion of the water in the Santa Cruz River. We also receive water from the Central Arizona Project (CAP). For 2019 we are scheduled to receive 11,337 acre-feet of water through the CAP. Our customer number is 1080. When requested we also use CAP water in-lieu of pumping to store water using our GSF Permit. In 2018 we stored water for the Bureau of Reclamation, the AK-Chin Indian Community, Arizona Water Banking Authority and municipal water companies in Pima County.

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

This project is not on Reclamation lands and does not involve Reclamation facilities.

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

This project is in the same basin as the Central Arizona Project which delivers water throughout Central and Southern Arizona.

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

This project will help to conserve water in the Tucson Active Management Area which is currently experiencing drought conditions. The Central Arizona Project is also located in this area.

*Will the project benefit any tribe(s)?*

This phase of the project will not directly benefit any tribe. Later phases will indirectly benefit tribes as we will be able to more closely control and monitor any water that they store with us.

### **Evaluation Criterion E – Department of the Interior Priorities (10 Points)**

This Project supports the following Department of the Interior Priorities.

*1a. Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment.*

We will be working with companies who have implemented this technology for other irrigation districts and water companies. This will ensure that we are using the best technology for our situation and that we will be successful with our implementation. We will also be sharing this information with other water utilities.

*2a. Ensure American Energy is available to meet our security and economic needs.*

By using SCADA technology, we can conserve water and energy on the wells that will be updated. This will occur by running the wells only for the time they are needed and being able to shut them off in an emergency without having to go to the site.

*3a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands.*

This project's plan, implementation, and learnings will be shared with the Avra Valley and Red Rock Irrigation Districts and the Town of Marana where most of our District is located.

*3b. Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes and local communities.*

We have been in contact with the Town of Marana, viewing their SCADA system and capabilities. We have also talked with other irrigation and water districts in the area about their technology and will continue to share information with the Red Rock and Avra Valley Irrigation Districts so that they can duplicate the processes that would meet their needs.

## **Project Budget**

### **Funding Plan and Letters of Commitment**

The non-Federal share of the project cost will be paid by the Cortaro Water Users' Association as agents for Cortaro-Marana Irrigation District. These contributions will be

monetary. The funds will come from tax revenue as well as water sales revenue. These funds are currently available. There is no funding from other Federal or non-Federal Partners. See Appendix E for board of directors' support letter.

*Costs incurred before the project start Date*

Wells 16D1 and 7 were updated in January and March of 2019 respectively. These wells failed and it was determined to be more cost effective and time saving to update them while they were being repaired in the slow season rather than to wait for approval of the WaterSMART grant. This amounts to approximately \$13,000 for the well 7 WEG soft start and wiring and \$3,000 for well 16D1 for the new starter and wiring.

**Summary of Non-Federal and Federal Funding Sources**

Funding Sources	Amount
CWUA as agents for CMID	\$ 75,000
Other Federal Entities-None	\$ 0
Requested Reclamation Funding	\$ 74,469
<b>Total Amount of Project</b>	<b>\$149,469</b>

**Budget Proposal**

Budget Item Description	\$/Unit	Quantity	Type	Total
<b>Salaries and Wages</b>				
Maintenance	\$19.77	120	hours	\$ 2,372
Equipment Operator	\$15.97	20	hours	\$ 319
Laborer	\$13.92	20	hours	\$ 278
<b>Total</b>				<b>\$ 2,969</b>
Fringe Benefits	\$0			
<b>Equipment</b>				
New Starter wells 21C1, 16D1	\$ 3,000	2	each	\$ 6,000
Soft Start wells 4, 5, 7	\$10,000	3	each	\$ 30,000
<b>Supplies &amp; Materials</b>				
Electrical wire, conduit, cabling				\$ 4,000
<b>Contractual</b>				
Remote Terminal Unit & Install	\$11,000	8	each	\$ 88,000
Electrical Installation	\$ 1,000	8	each	\$ 8,000
Antenna Installation	\$ 1,000	8	each	\$ 8,000
Environmental & Regulatory Compliance per BOR recommendation				\$ 2,500
<b>Total Direct Costs</b>				<b>\$149,469</b>

## **Budget Narrative**

District personal will be used as necessary to help with the antennae installation and electrical wiring. Because we are a small district with limited personnel our employees need to perform many jobs that their title may not reflect. For example, we don't anticipate needing our equipment operator to run any equipment, but he will be helping with wiring and cabinet installation. SCADA software and software to allow us to receive alarms was already purchased as part of the Phase 1 installation. Remote Terminal Units (RTU) will need to be installed at each well site and will need to work with the existing software. Electrical Installation will consist of placing cabinets, conduit, and wires to provide power to the RTUs. Wells 21C1 and 16D1 will need new starters and wells 4, 7, & 10 will require soft starts to meet the district update standards and work with SCADA. The Environmental and Regulatory Compliance costs were determined with Jessica Asbill-Case of the Phoenix BOR office. No issues are anticipated as we are installing electrical equipment at existing well sites.

## **Environmental and Cultural Resources Considerations**

*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 project does not take place in an environmentally sensitive area. Installations will be on existing well sites. Water is available on site if needed to minimize dust, No effect on water quality or animal habitat. Earth may need to be disturbed to bury electrical conduit or placing a concrete pad. Where possible antennas will be connected to existing structures.

*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.*

No endangered species or designated critical habitat are within the well sites.

*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.*

There are no wetlands or other surface waters in our well sites.

*When was the water delivery system constructed?*

The wells were originally drilled in the late 1930's to mid-1950's. They are typically pulled every 5-10 years and parts are replaced as needed. The district has a program of updating 2-3 wells per year with new electronics including soft start controllers.

*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.*

No headgates, canals or flumes will be modified in this phase. We do plan to install self-leveling gates with SCADA capability in a later phase of our master plan.

*Are any buildings, structures or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? Are there any known archeological sites in the proposed project area?*

There are no buildings, structures or features in the irrigation district listed on the National Register of Historic Places. There are some known archeological sites within and bordering the district but none of the well sites to be upgraded are near them.

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

The proposed project will not have any adverse effects on low income or minority populations.

*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?*

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

### **Required Permits or Approvals**

No Permits or approvals are required for installation of the SCADA equipment.

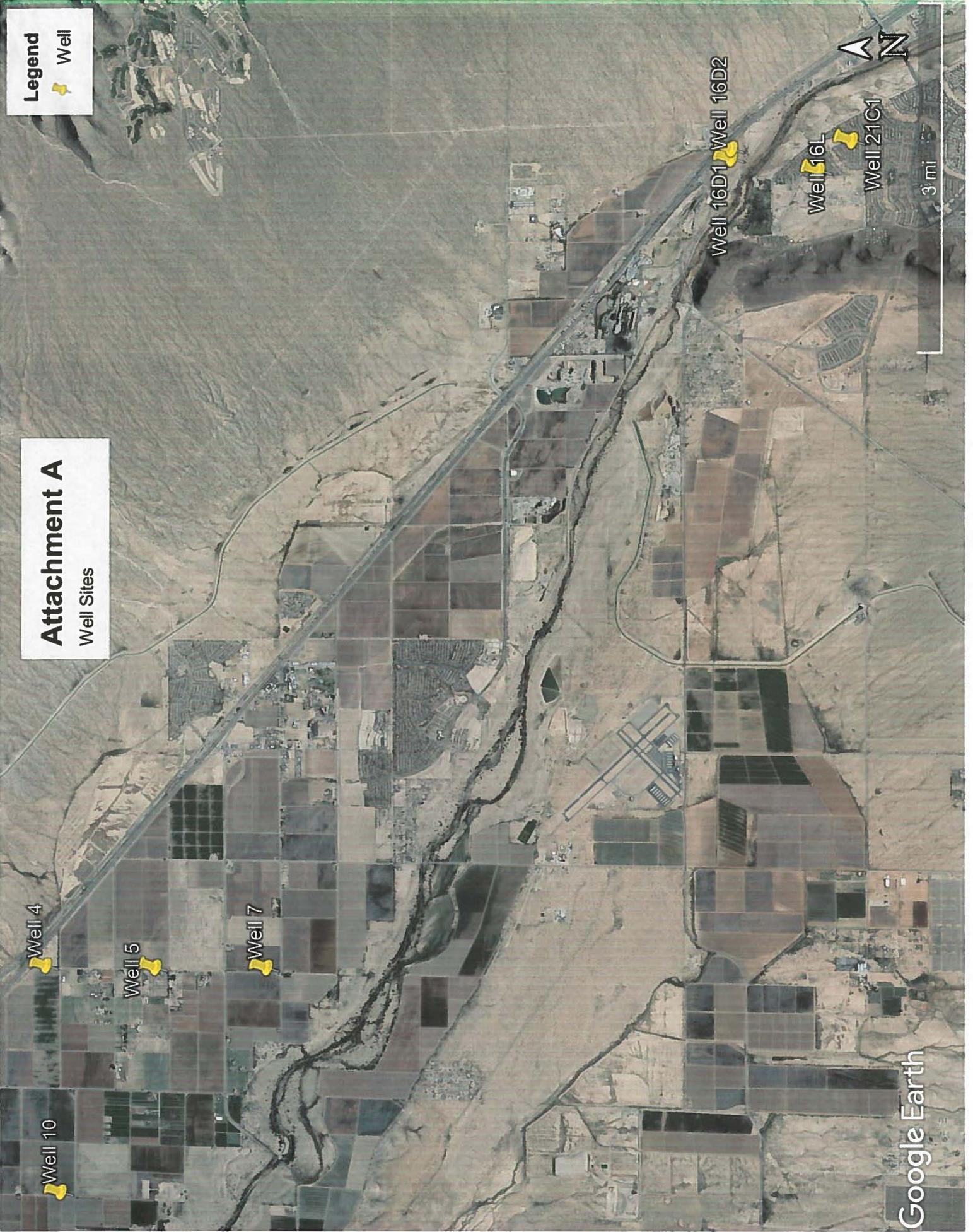
### **Official Resolution**

The Official Resolution was passed at the April 9, 2019 Board meeting and is included in the packet. See appendix E for the signed copy of the Official Resolution.

### **Unique Entity Identifier and System for Award Management**

Cortaro Water Users' Association is currently registered with in the System for Award (SAM). Our CAGE code is 6RM36 and our DUNS number is 072434467.

**Appendix - Following 7 pages**



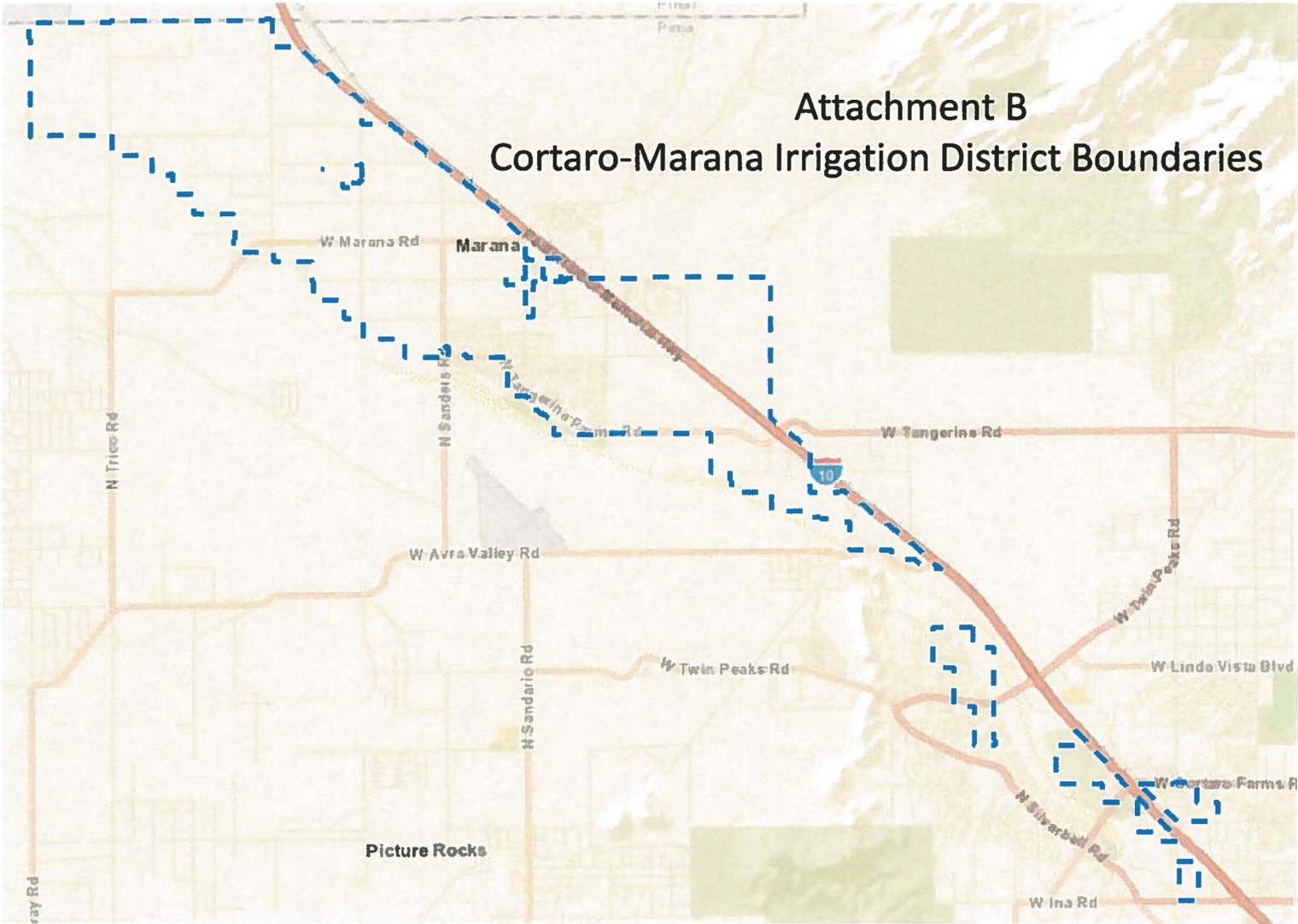
Legend  
Well

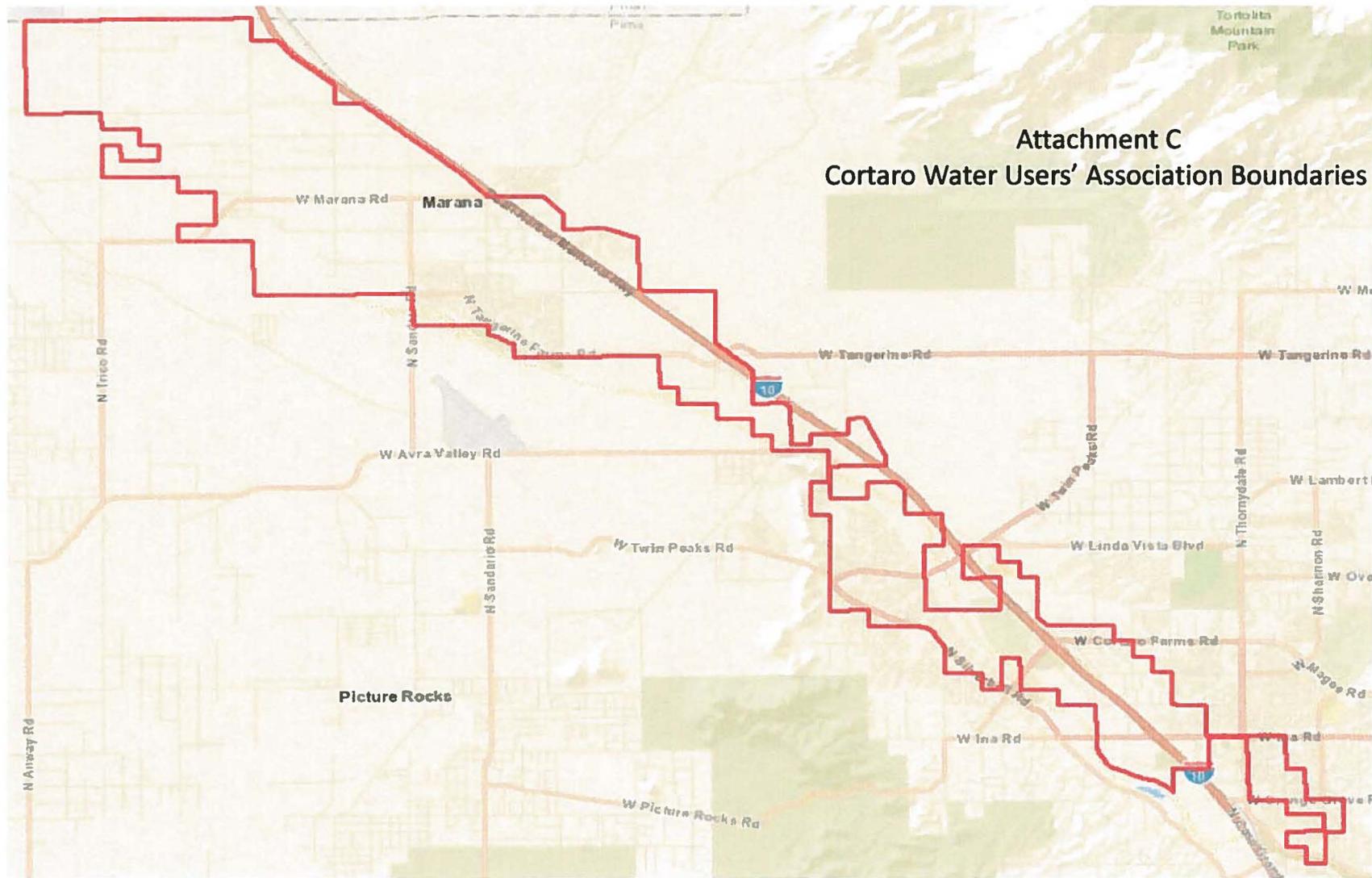
**Attachment A**  
Well Sites

3 mi

Google Earth

# Attachment B Cortaro-Marana Irrigation District Boundaries





**Attachment C**  
**Cortaro Water Users' Association Boundaries**

Attachment D



**Cortaro–Marana Irrigation District  
Cortaro Water Users' Association**

12253 West Grier Road • Marana, Arizona 85653

Telephone: (520) 682-3233 • FAX: (520) 682-3456

[CMID12253@comcast.net](mailto:CMID12253@comcast.net)

## Irrigation District Review & Plan

Revised

April 12, 2019

# Attachment D

## Table of Contents

Existing Gravity Flow Canals & Pipelines.....	3
Well Sites.....	3
Non-Potable System.....	4
<b>SCADA system.....</b>	<b>5</b>
Equipment.....	7
Facilities.....	7
Land.....	7
Computers and systems.....	8
Power and Water .....	9

**Attachment D  
SCADA Phase Plan-Subject to Change**

	<b>Well #</b>	<b>Soft Start Installed?</b>	<b>CFS</b>	<b>Needs for Installation</b>
<b>Phase 1</b>	2018 Bureau of Reclamation Small-Scale Water Efficiency Project			
	Office	NA		Complete
	18	Y	5.5	Complete
	6	Y	8	Complete
	Purchase of Wonderware and Win911 Software for SCADA Control and Alarm Notification			
<b>Phase 2</b>	2019 ADWR Groundwater Users Advisory Council Grant			
	17I1	Y	5.25	
	21C2	N	6	Soft Start 2/19
	14	N	7.5	Soft Start
	16F1	N	3	New Starter
	15	Y	6	
	8J	Y	1.25	
<b>Phase 3</b>	16L	Y	2.75	
	21C1	N	2.5	New Starter
	16D2	Y	2.75	
	10	N	5	
	16D1	N	3	New Starter 1/19
	4	N	5	Soft Start
	7	Y	7	Soft Start Installed 3/19
	5	Y	6	Soft Start
<b>Phase 4</b>	Installation of Automated Gates in Main Canal			
<b>Phase 5</b>	21O	Y	2.25	
	21K	Y	1.5	
	25M	Y	1.5	
	26J2	N	4	Soft Start
	26J3	Y	2	
	22P	N	4.5	Soft Start
	17	Y	6	
	26E	Y	2.25	
<b>Phase 6</b>	Small CAP		9	
	Medium CAP		17	
	Large CAP	N	38	
	21F	Y	1.25	
	35H	Y	1.5	
	16P	Y	1	
<b>Phase 7</b>	36H	N	2	New Starter
	21P	N	2	New Starter
	8	Y	5.75	
	21B	Y	1.75	
	36C	N	1.25	New Starter
	3	Y	6	
<b>Phase 8</b>	2	Y	4	
	1	Y	5	
	9	Y	5	
	16	Y	3	
	11	N	4.5	Soft Start
	12	N	5	Soft Start
<b>Phase 8</b>	Installation of Automated Gates in Main Canal			
<b>Others</b>	22N			Golf Course
	1F			Sports Park
	36N			Tanks Green Stuff
	13			Will be added as part of the non-potable pressurized system

## Appendix Attachment E

### RESOLUTION NO. 2019-4-9 Cortaro Water Users Association

As agents for **Cortaro-Marana Irrigation District**

WHEREAS, The Cortaro Water Users' Association Board must maintain, provide for, and service the water delivery system,

WHEREAS, The Board sees the need to construct the Supervisory Control and Data Acquisition (SCADA) Project to improve water and energy efficiency,

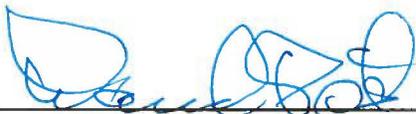
WHEREAS, The Board desires to obtain grant funding from the Bureau of Reclamation through the WaterSMART: Small-Scale Water Efficiency Grant.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors, agrees and authorizes that:

1. The WaterSMART: Small-Scale Water Efficiency Grant application has been reviewed by the Board of Directors and supports the contents therein;
2. The Cortaro Water Users' Association is capable of providing the amount of funding specified in the funding plan; and
3. If selected for a WaterSMART: Small-Scale Water Efficiency Grant, the Board will work with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement.

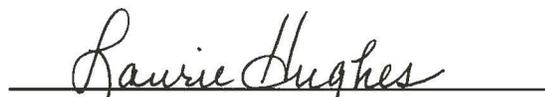
**DATED:** 9 April 2019

**SIGNED:**



Daniel Post, Chairman CMID & CWUA

**ATTEST:**



Laurie Hughes, Secretary