FUNDING OPPORTUNITY
BOR-DO-20-F006

WATERSMART GRANT
SMALL-SCALE WATER EFFICIENCY PROJECT APPLICATION

NEW DROP LEAF GATE CHECK STRUCTURE

FOR THE

UTE LATERAL AND COCOPAH CANAL

FY 2020-2021

Submitted To:
Bureau of Reclamation Mail Services
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Please Note: A previous WaterSMART Grant: Small-Scale Water Efficiency Project Application was submitted for this project in July of 2018 and awarded in August 2019 (with an NTP). After much discussion and an recommendation from USBR, this award was declined because an error had been made in the budget (Costs for the contractual concrete work were NOT included – and the estimate for those services was an additional $40,000). Our General Manager of 38 years had just resigned, and we chose not cover theses additional costs.

1. Technical Proposal and Evaluation Criteria

1.1 Executive Summary

This application is being submitted on 04/03/2020 by:
Bard Water District
1473 Ross Road
Winterhaven, Imperial County, California

The Bard Water District proposes to construct a new "drop leaf" gate/check structure in the 6-mile-long Cocopah Canal just past the Ute Lateral (near end) for better water management. This new "drop leaf" gate/check structure will significantly reduce the quantity of water lost by preventing the flow of water downstream from the Cocopah Canal at the Ute lateral turnout. Currently, there is no check gate present on the Cocopah Canal immediately past the Ute Lateral to stop water flow downstream and it is 0.7 miles downstream to the next check gate at Picacho Road. This distance can extend even further because of the lower elevation of Cocopah canal sidewalls, proximity to Tribal facilities and structures (Tribal cemetery, new Indian Health Services Medical Complex, two major roads, new subdivision, and a few scattered homes). Sometimes, in order to prevent overflow or flooding of the area upstream, the check gate at Picacho, must be opened making us unable to reduce further losses downstream. The "drop leaf" gate and check structure has been selected rather than the traditional gate because it provides better water management by controlling the actual water elevation from the top, rather than from the bottom. Other ancillary water losses that occur with distribution such as seepage, evaporation, and overflow will also decrease. This new check gate structure is critically needed to better manage this water delivery system by providing controls, that are currently non-existent.

The funds received from this grant will be used for the fabrication and installation of this new "drop leaf" gate and associated structures. We will accomplish the goals established for the WaterSMART program by leveraging funding to conserve and better manage our water resources and increase efficiency of our system. A list of existing plans used for identifying, prioritizing and selecting projects have been provided in the Appendix.

We plan to complete the project in a two-week period and installation can begin in the summer anytime between May and July, depending upon the NTP. Since the primary use of the water is agricultural, this is the best time interval because there is less demand (quantity and time), thus minimal impact to our producers/growers. We would schedule our work as to accommodate them.

This project **is** located on a Federal facility.

1. Technical Proposal and Evaluation Criteria

1.2 Background Data

The Yuma Project, initiated in 1909, is a Federal Reclamation Project and lies within the historical boundaries of the Fort Yuma Indian Reservation in Southeastern California (Imperial County) along the lower Colorado River near Yuma, Arizona. The Bard Water District and Lands located in the Yuma Project includes the Valley Division in Arizona and the Reservation Division in California. The Reservation Division consists of approximately 14,700 irrigable acres of which 7,100 acres are in the Bard Unit (Bard Water District, mostly on the Eastern portion) and 7,600 acres in the Indian Unit (mostly on the Western portion).

On December 1, 1978, the Bard Irrigation District was renamed the Bard Water District. In March 1981, the Bard Water District entered a contract with the U.S. Bureau of Reclamation (USBR) for the operation and maintenance of the Bard Unit, In January 1983, BWD entered an additional contract to operate and maintain the Indian Unit facilities. The Indian Unit Water Users pay the Bureau of Indian Affairs (BIA) their O & M costs, then these funds pass through to the USBR and eventually BWD is compensated. *The overall condition of the delivery and drainage systems is relatively poor due to aging infrastructure , flood damage, maintenance challenges and other causes,* USBR TM 86-68210-2016-07, Evaluation of O & M Costs Allocation, July 2016.

The Fort Yuma Indian Reservation of California was established for the Quechan Indian Tribe by an Executive Order of January 9, 1884. These Indian lands are held in trust by the BIA for the individual Indian allottees in about 10-acre allotments. This acreage is pooled and leased to approximately 10 major farm operators in the area. The leases are administered by the Bureau of Indian Affairs. The Bard Unit contains patented lands held in private ownership. There are about 190 individual water user accounts in the Bard Water District and 10 in the Indian Unit.

Work began on the distribution system of the Reservation Division in 1909 and the patented land was opened to settlers in 1910. With the construction of the Laguna Dam from 1905-1909, approximately 38,000-acre feet per year were provided to the non-Indian sections. The Bard Irrigation District was organized in 1927 to represent landowners in the Bard District. Water for the project was diverted from the Laguna Dam.

Later after the construction of the Imperial Diversion Dam (1938), 5 miles upriver and the completion of the All-American Canal (1941), irrigation for the Reservation Division was diverted from 5 turnouts along the All-American Canal. This included the Siphon Drop Power Plant for additional turnouts off the Yuma Main Canal for the Valley Division located in Arizona.

The Bard water users originally contracted (beginning in 1909) with the Bureau of Reclamation under Present Perfected Rights to provide water under this pre-existing agreement. Bard's consumption is based upon these farm units. The Yuma Project Reservation District (YRPD) can divert all the water needed for crops; not to exceed 25,000 acres per year. The Bard Water District is just below the Laguna Dam, the first dam built on the Colorado River to divert water for the Yuma Project.

1. Technical Proposal and Evaluation Criteria

1.2 Technical Project Description

Background Data (Continued)

The Bard Unit is part of the Yuma Project Reservation Division and has 2nd Priority Water under the California Seven Party Agreement. Return water flows back into the Colorado River and continues to Mexico as specified by the International Agreement. The most important crops grown in the Bard Water District are produce, Medjool dates, citrus, cotton, alfalfa hay, and wheat. Crops can be grown year-round in this warm dry climate with little need for frost protection.

Currently, the Bard Water District operates and maintains 67 miles (353,760 Linear Feet) of irrigation ditches and canals; only 30% are lined with concrete or concrete piping. YPRD diverts approximately 90,000 acre feet per year to irrigate approximately 15,000 acres. Efforts to conserve water are challenging in Bard's antiquated system, but Bard works closely with its Water Users, USBR and other agencies to be pro-active in addressing these issues.

Source of Water Supply:
Colorado River ➡ All American Canal ➡ Cocopah Canal ➡ Ute Lateral

Total Quantity of Water Supplied: Bard Unit: 50,000 acre ft/yr Indian Unit: 49,000 acre ft/yr

Quantity of Water Supplied Cocopah/Ute: 1,000 acre feet **Water Rights Involved:** 2nd Priority

Current Users and Number Served: Agricultural Cocopah Canal: 35 Ute Lateral: 1

Current Water Demand: 17 cfs **Projected Water Demand:** 17 cfs

Estimated Water Loss Reduction if New "Drop Leaf" Gate and Check Structure installed:
100 – 250 acre feet/year

Major Crops: Wheat, Sudan Grass, Produce and Cotton (Listed by water demand: High ➡ Low

Total Acres Served: Cocopah Canal: 3,120 Acres Ute Canal: 200 Acres

Potential Shortfalls in Water Supply: If drought continues, quantities could be reduced. Increased demand from new users. Water conservation measures are critical. Farmers here have already been encouraged to implement seasonal fallowing, use drip irrigation methods, eliminate crops that require large quantities of water (i.e. wheat or Sudan grass – Estimated total of 16-acre feet (48 hours @ 4-6 intervals).

Bard Water District Water Delivery or Distribution System: Agricultural Use only.

1. Technical Proposal and Evaluation Criteria

1.2 Technical Project Description

Background Data (Continued)

Type and Approximate Total Lengths of Canals, Laterals and Pipes: 67 Miles 353,760 LF
Concrete Lined/Pipe: 25 Miles 132,000 LF (37%) **Unlined:** 42 Miles or 221,760 LF (63%)

Type and Approximate Total Lengths of Canals:			13 Miles	36,640 LF	
Concrete Lined:	7 Miles	36,960 LF	**Unlined:**	6 Miles	31,680 LF
Type and Approximate Total Lengths of Laterals:			50 Miles	264,000 LF	
Concrete Lined:	12 Miles	63,360 LF	**Unlined:**	36 Miles	190,080 LF
Fragmented/Deteriorated Concrete Lined Lateral:			1 Mile	5,280 LF	
Type and Approximate Total Lengths of Pipes:			3 Miles	15,840 LF	

Number of Irrigation Turnouts: 450

Significant Irrigation Improvements: Automated Controls Structures: 0 SCADA: 0
Remote Monitoring Devices: 5

Other: 3 Ram type Cipolletti weirs, 2 Long-throated flumes.

The Bard Water District Activities/Funding:

1) BWD maintains a continuous working relationship with the Bureau of Reclamation's office in Yuma (collaborating to update our Water Conservation Plan for 2020 as well as assisting with our new grants), USBR's Technical Service Center, the as well as with the USDA, NCRS, CDFA, Cal Poly Irrigation Testing and Research Center, and the University of AZ, Yuma campus.

2) BWD works diligently to maintain and repair our aging systems with very little funding and resources. In 2004, we received a North American Development Bank grant with 25% Tribal and 25% Bard Water District matching funds. 12 Miles of canals and ditches were lined with concrete or concrete piping and check structures were installed. Bard water users obtained this loan and pay $18.50 per acre per year until 2023 to cover the costs of this construction. All water saved may be used by a lower priority.

3) Also, in 2004, BWD received $225,000 from the USBR Water Conservation Program for Measuring Devices.

4) In 2016, BWD initiated a two-year pilot seasonal land fallowing project in 2016 (MWD) which we expanded threefold (approximately 500 acres initially to 1,500 acres in 2017 and 2018) then 1,641 acres in 2019 and a planned 3,000 acres in 2020 due to outreach and communication efforts. Agencies include USBR, CAWCD, MWD, DW, and SNWA.

1. Technical Proposal and Evaluation Criteria

1.2 Technical Project Description

Background Data (Continued)

5) In 2018, our water users pledged $25/acre for Capital Improvements. They also provide a percent of their fallowing funds for system efficiency improvements. They are very supportive of any funding we receive to help correct system deficiencies as well as improving efficiency.

6) In 2018, Bard Water Users partnered with the NCRS for two new Canal Lining Projects.

7) In 2017 - 2020, BWD was awarded six USBR grants:

***Third Funding for Two Year Voluntary Pilot System Water Conservation Program**, total of around 2,400 acres ($295K) 2015-2017.*

***Water Conservation Field Services Program for Lower Colorado River**: Demonstrating Conservation project Technologies for Measurement Devices and Flume Construction on the Reservation Main and Cocopah Canals ($80K). To be completed summer 2020. NTP 7/19*

***Water Conservation Field Services Program for Lower Colorado River**: Design and Engineering for the Five Gate Structure ($83K). A Priority 1 for these aging and barely operation structures. To be completed spring 2020. NTP 4/19*

***Two Small-Scale Water Efficiency Program (SWEP) grants** submitted April 2019 (Denver office) for Engineering/Design and Construction/Lining (First 1/2 of 4,250 LF Acoma Lateral). To be completed summer 2020. NTP pending*

***WaterSMART Water and Energy Efficiency** grant for Construction of Five Gate October 2019. To be completed summer 2021 NTP pending.*

***Please Note:** Quechan Indian Tribe Submitted and won award for a **Small-Scale Water Efficiency Program (SWEP) grant** the Tonawanda Lateral for the Replacement of the Check Structure and Culvert April 2019. They also applied for a new grant: **USBR Native American Affairs Technical Assistance Program** for Installation of Two Flow Measurement Devices in the Cocopah Canal (Baseline Road and Ranch 5 Diversion). January 2020.*

8) New Grants applied for in 2019 – 2020 (Pending):

***Two Water Conservation Field Services Program Lower Colorado Region** for Engineering/ Design of Acoma Lateral Lining and Appurtenances (Second ½ of 4,250 LF plus 1,300 LF of Lateral and for Engineering/Design for Mohave Canal Lining and Appurtenances (Phased for 1/5 of 2.7 miles). September 2019*

***WaterSMART Drought Resiliency grant** - Concrete Lining of Mohave Canal October 2019*

***Cooperative Water Management Program Phase 1 –** Watershed Planning November 2019*

1. Technical Proposal and Evaluation Criteria (Continued)

1.2 Technical Project Description

Background Data (Continued)

USDA RCPP Grant – *Mohave Canal Lining December 2019*

WaterSMART Drought Response Program: *Update Drought Contingency Plan February 2020.*

WaterSMART Water and Energy Efficiency *grant for Construction of Five Gate October 2019*

Cooperative Water Management Program Phase 1 – *Watershed Planning November 2019*

USDA RCPP Grant – *Matching Funds for Five Gate December 2019*

WaterSMART Drought Response Program: *Update Drought Contingency Plan February 2020.*

Two Water Conservation Field Services Program Lower Colorado Region *for Demonstration Project at Seminole and a System Optimization Review. February 14, 2020.*

Two Small-Scale Water Efficiency Program (SWEP) grants – *RL97 Gate Replacement on Cocopah Canal and Cocopah/Ute Drop Leaf Gate Replacement (Engineering/Design and Construction) March 4, 2020.*

USDA EQIP Grants – Working with local farmers Fall 2019-Spring 2020

IRWM – State of CA – Matching Funds for USBR Grants and New Projects TBD.

8) Our water users recently pledged $25/acre for Capital Improvements. They also provide a percent of their fallowing funds for system efficiency improvements. They are very supportive of any funding we receive to help to correct system deficiencies as well as improving our system efficiency.

9) BWD has developed a great partnership with our water users Irrigation methods that promote water use reduction (sprinklers, drip, etc.) and Crops that require less water. They actively participate our water conservation methods because not only is good for our water resources it provides them a cost savings.

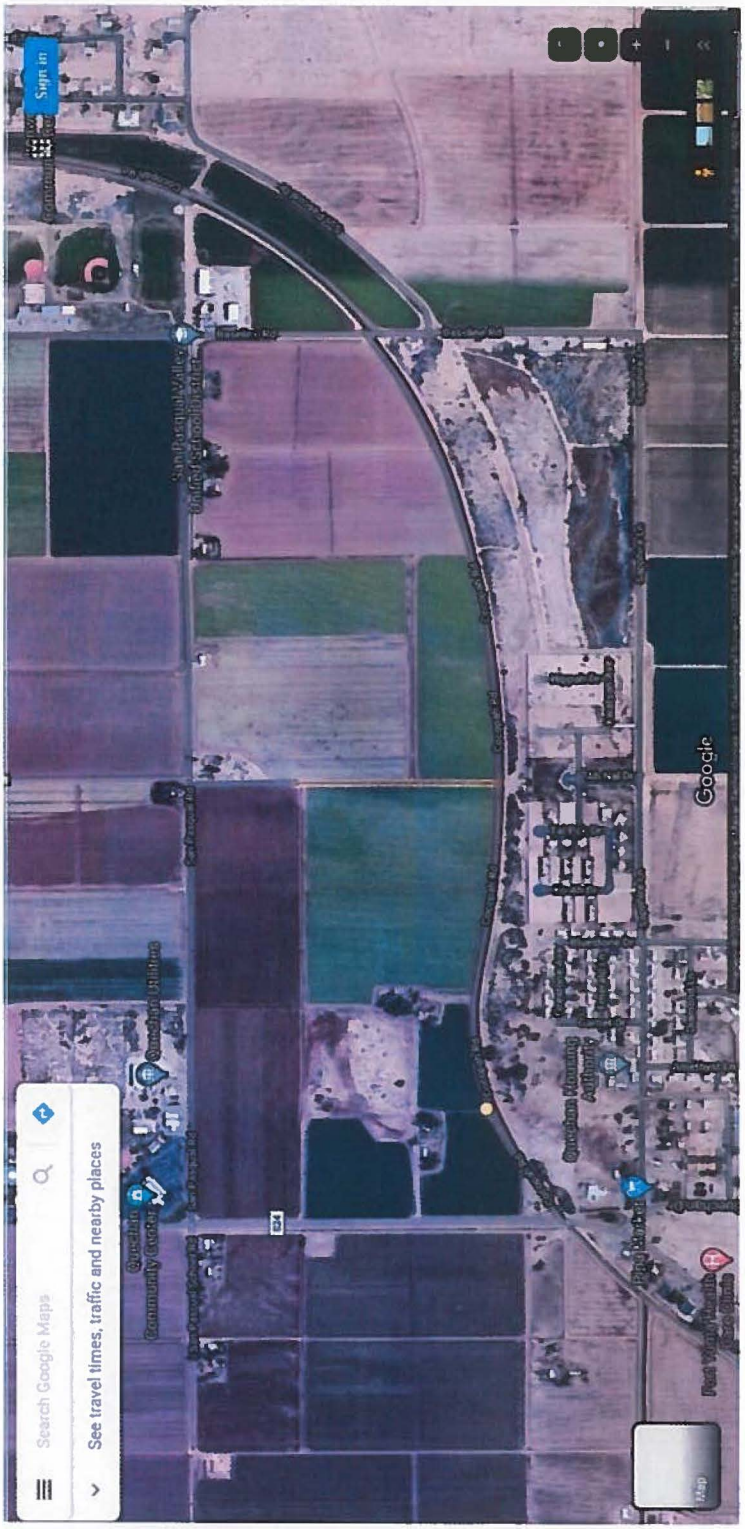
1.3 Project Location

Cocopah Canal just below the Ute lateral Turnout
Quechan Indian Reservation, Winterhaven CA (Imperial County)
Latitude: 32.760063 Longitude: 114.593754

Map and photos have been provided on the following page.

1. Technical Proposal and Evaluation Criteria (Continued)

1.3 Project Location



Location of New Drop Leaf Check Gate

1. Technical Proposal and Evaluation Criteria

1.4 Technical Project Description and Milestones

Problems and Needs:

The Bard Water District proposes to construct a new "drop leaf" gate/check structure in the 6-mile-long Cocopah Canal just past the Ute Lateral (near end) for better water management. This new "drop leaf" gate/check structure will significantly reduce the quantity of water lost by preventing the flow of water downstream from the Cocopah Canal at the Ute lateral turnout. Currently, there is no check gate present on the Cocopah Canal immediately past the Ute Lateral to stop water flow downstream and it is 0.7 miles downstream to the next check gate at Picacho Road. This distance can extend even further downstream because of the factors listed below.

1) The Cocopah Canal sidewalls/bank and structures are at a lower elevation downstream from the Ute Lateral, so the existing check structure will spill over during the irrigation of the 120 acres served by the Ute Lateral. It is not feasible to raise the sidewalls (access roads, location and costs).

2) There is loss from excess flow, seepage and evaporation of the water not entering the Ute Lateral and passing downstream (0.7 miles to check structure) and then continuing past the opened drain. The elevation is at the spill level which is the terminus of the Cocopah system and difficult to maintain causing overflows resulting in excess water flow to Mexico.

3) If the downstream (Picacho) gate is closed during delivery (high flows) to Ute Lateral, the water would overflow causing flooding and erosion of the canal sidewalls, making us unable to reduce further losses downstream.

4) The Cocopah Canal (Ute Lateral Area) is bounded by agricultural fields to the North, but the South (downstream) by the new subdivision, a few scattered homes, two major roads, the Quechan cemetery, and the new Indian Health Services Medical Complex, so the area cannot be flooded.

How Problems and Needs will be Addressed:

The installation of the new gate structure will prevent the loss of water downstream from the Cocopah Canal **when it is delivered to the Ute Lateral**, by stopping the unrestricted flow downstream to the next check gate before Picacho Road (terminus of the Cocopah Canal) a distance of 0.7 miles (3,696 LF) and even further downstream. This new check gate structure will significantly reduce the quantity of water lost (approximately 150 - 250 acre feet/year, based on type of crop and growth cycle, irrigation distribution method, and frequency and length of water delivery). Other ancillary water losses that occur with distribution such as seepage, evaporation, and overflow will also decrease. The "drop leaf" gate and check structure has been selected rather than the traditional gate because it provides better water management by controlling the actual water height from the top, rather than from the bottom. This new check gate structure is critically needed to better manage this water delivery system by providing controls, that are currently non-existent.

1. Technical Proposal and Evaluation Criteria

1.4 Technical Project Description and Milestones

The expected outcomes:

A list of outcomes has been provided below.

1) Better Water Management for water delivery and distribution from the Cocopah Canal by controlling the actual water height from the top, rather than from the bottom as traditional gates do.
2) While maintaining the desired elevation in the event of uncontrolled releases, the extra flow would pass over the gate and structure.
3) Reduction in quantity of water loss when water is delivered from the Cocopah Canal to the Ute Canal (Ranging from 100 - 250 acre feet/year).
4) Accomplish WaterSMART goals of conservation and efficiency.
5) Accomplish WaterSMART goal of preventing possible water-related crisis (shortfalls or flooding).
6) Accomplish WaterSMART goal by leveraging funding to conserve and better manage our water resources and increase efficiency of our system.
7) Improvement to our overall system.

Tentative Milestone/Task Schedule

Milestone/Task	Planned Start Date	Planned Completion Date
USBR NTP	12/01/20	12/01/20
Pre-Construction Sub/Vendor Procurement /Award for Engineering/Design and Materials/Supplies (Order Concrete and Gate Fabrication)	02/01/21	04/30/21
Construction/Installation Coordinate/schedule with affected water user(s) Site Preparation Concrete Foundation Gate Installation	05/03/21[1]	07/30/21[1]
Completion Closeout/Final Report	08/02/21	09/30/21

[1] Construction and Installation will only take two weeks but will take place in the summer between these two dates. There is less demand (quantity and time), thus minimal impact to our producers/growers. We would schedule our work as to accommodate them.

1. Technical Proposal and Evaluation Criteria

1.5 Evaluation Criteria

A. Project Benefits

Improve Water Delivery System: Efficiency, control, flow, less water lost) reducing excess flow to Mexico.

Improve Overall Reliability: Control overflow/flooding, water flow/quantity.

Geographic Scope Benefits:
Positive impact to entire system by reducing significant water loss ranging from 150 to 250 acre ft/yr (Based on type of crop and growth cycle, irrigation distribution method, and frequency and length of water delivery).

Positive impact to the local area (Below Cocopah Canal and Ute Lateral) by reducing the unrestricted discharge downstream, subsequent overflow, seepage and evaporation.

Collaboration and Information Sharing Among Water Districts in Region: This project demonstrates collaboration between our water district, BOR, the Quechan Indian Tribe, and our agricultural users. It can be used as an example to other water managers reflecting how assessment, planning, usage, need, and corrective measures can be achieved to benefit a district.

Local or Economic Positive Impacts/Benefits:
Agriculture – economic (less water needed, less restriction on crops types). Reduce O&M cost to BWD so funding can be used for other deteriorating structures and sites.
Environmental – health (less mosquito habitat, less noxious and invasive weeds, safer structure).
Food Safety – Less danger of catastrophic crop failure due better water elevation control to prevention of overflows/flooding of fields with food crops.
Recreation/Tourism – Cocopah Canal transverses reservation provides a jogging, walking, biking trail. It connects three Quechan subdivisions, the elementary, middle and high schools, the Quechan Cemetery, Tribal Store and Barber shop and the new IHS Medical Center.
Public Safety – cost or human life or injury by reducing drowning risk (no chance of being trapped under gate because of the design - water flows over the exposed top, not from below like the traditional gate). Less residual flooding from overflow and spillage resulting in unsafe driving conditions and erosion of road and ditch banks.

Complementing NRCS Projects:
In January 2020, Bard Water District hosted its first grant workshop for producers, farmers and ranchers. Thirty-two attended. Presenters included USDA: Rural Development, NRCS, and the Farm Service from AZ and CA. Also, the CA Dept. of Food and Agriculture and a researcher from the U of AZ who discussed previous and current research projects being conducted in our area.
We are working closely with NRCS and a *Conservation Implementation Strategy for Bard, CA Imperial County, Irrigation Improvement Project Plan was prepared by Steve Reddy – District Conservationist, NRCS Yuma, AZ for 24 projects (2 of which have been completed).* Several of them involve the Cocopah Canal and connecting laterals.

1. Technical Proposal and Evaluation Criteria

1.5 Evaluation Criteria

B. Planning Efforts Supporting the Project

This project entitled "New Drop Gate and Check Structure Installation" is part of our overall goals to save water and increase efficiency. Our existing "Reservation Improvement Project Plan" mandates that we periodically access our water delivery system and identify problems or needs as we continue to mature and adapt to meet changing conditions as well as identifying new technologies and strategies.

Each year, we identify and prioritize our system needs and problems and projects not addressed in the previous year are added. Our criteria include:

1) Is the project listed as a priority on our Capital Improvement Plan, USBR TSC Recommendations, Water Conservation Plan, Drought Contingency Plan or by us?
2) Can the problem or need be remedied with existing resources and funds?
3) What benefits will occur from the corrective action taken (water/monetary savings, efficiency, sustainability, annual maintenance, acre foot savings).
4) Are additional resources and funds available if the existing funds are not available?

This project has been second on our priority for the last 10 years, but we have not had the funds. Our priority was to line the six miles of the Cocopah Canal, but this was cost prohibitive (50% matching of $6,000,000) so we chose this.

C. Project Implementation

Implementation Plan:

Once the Categorical Exclusion is completed and we receive the NTP, we will begin initial planning. An Action Plan will be developed that lists each task, scheduled interval, responsible party, comments/notes and when the activity or task is completed and by whom (Sample provided in Appendix). A work plan will also be completed. Major phases will include:

Pre-Construction:

Subcontractor Selection and Vendor Procurement and Award for
Engineering/Design (Minimal – gate and surrounding support structures – sidewalls/apron)
Contractor: Concrete structure (Forms, attachments, support structures)
Materials/Supplies (Order Concrete and Gate Fabrication)

Construction/Installation

Project Manager/Water Master Coordinate/schedule with affected water user(s)
Site Preparation by Bard Equipment Operator
Gate Fabrication by Subcontractor
Concrete Foundation (Sidewalls and aprons) by Bard and Subcontractor
Gate Installation (Attach to concrete structures) by Bard

Closeout/Reports

1. Technical Proposal and Evaluation Criteria

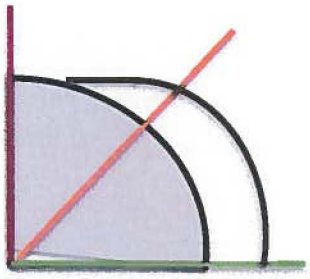
1.5 Evaluation Criteria

C. Project Implementation (continued)

Schematic Design for Before and After Installation of Drop Leaf Gate

Before: Cocopah Canal Unrestricted Flow Past Picacho Rd Gate

After: Cocopah Canal NO Flow Past New Drop Leaf Check Gate after Ute Lateral



Drop Leaf Gate

Red – Closed

Yellow – Half Open

Green – Completely Open

1. Technical Proposal and Evaluation Criteria

1.5 Evaluation Criteria

C. Project Implementation (continued)

Estimated Project Schedule (Nine Months):

Milestone/Task	Planned Start Date	Planned Completion Date
USBR NTP	12/01/20	12/01/20
Pre-Construction Sub/Vendor Procurement /Award for Engineering/Design and Materials/Supplies (Concrete and Gate Fabrication)	02/01/21	04/30/21
Construction/Installation Coordinate/schedule with affected water user(s) Site Preparation Concrete Foundation Gate Installation	05/03/21[1]	07/30/21[1]
Completion Closeout/Final Report	08/02/21	09/30/21

[1] Construction and Installation will only take two weeks but will take place in the summer between these two dates. There is less demand (quantity and time), thus minimal impact to our producers/growers. We would schedule our work as to accommodate them.

Permits Required: None

Engineering/Design Work Required for Project:
Will be performed by a subcontractor.
Design and Fabrication of Drop Leaf Gate, Controls and Framework
Design of Concrete Sidewalls, Aprons and Appurtenances

New Policies or Administrative Actions Required to Implement Project:
No new policies or actions, Bard Water District always coordinate these improvement projects with the water users to minimize impact to their agricultural operations.

Describe the Environmental Compliance Process and Estimate:
This project was discussed with Nohemi Olbert, USBR Yuma Office and a Categorical Exclusion was prepared in 2019 at no costs. No earth disturbing activities and no demolition of existing structures. New gate structure to be installed on elevated "borrow" material used to construct canal.

1. Technical Proposal and Evaluation Criteria (Continued)

1.5 Evaluation Criteria (continued)

D. Nexus to Reclamation

This project is connected to the Reclamation activity of improving efficiency and conservation of our water systems for the Indian Unit. This project will help reduce excess water flows to Mexico.

The Bard Water District receives Reclamation Water: ***Yes***
Via the All-American Canal.

Project on Reclamation lands or facilities: ***Yes***
Bard Irrigation District manages Colorado River water and the irrigation systems.

Project in same basin as Reclamation project or activity: ***Yes***
Lower Colorado River

Project contributes water to a basin where a Reclamation project is located: ***Yes***
Lower Colorado River

Tribal Benefit: ***Yes***
This project will help Reclamation meet their trust responsibilities to the Quechan Indian Tribe. This project is located on the Indian Unit (managed by Bard Water District).

E. Department of Interior and Bureau of Reclamation Priorities

Creating a conservation stewardship legacy second only to Teddy Roosevelt:
This project utilizes new scientific/hydrological strategies coupled with new "drop leaf" check gate design to create a more efficient and responsive water delivery system. Located in a rural area, and sharing land with the Fort Yuma Indian Reservation, we are uniquely positioned to promote stewardship. Through our partnerships with our water users (farmers) we are creating a balance between water conservation, planning, efficiency, and cost savings. We are addressing issues brought about by changes in the environment, especially drought. We are using a "Best Practices" model by conserving water and subsequent watersheds and habitats) by a variety of voluntary activities (Bard Water District as well as On-Farm) as previously discussed (seasonal fallowing, irrigation method, crop vs. water requirements, system delivery improvements, etc.).

In November, local water users, encouraged us to apply for a Watershed planning Grant again for a former oxbow of the Colorado River which has a series if three small lakes. Many drainage areas and riparian areas are left as buffer zones with native plants providing habitat for the Yuma Clapper Rail and Southwestern Willow Flycatcher. Low vegetation areas near the mesas and All-American Canal provide Burrowing Owl habitat. Wild at Heart a raptor rescue non-profit, has agreed to assist with habitat identification/restoration. The U of AZ has met with us about a Barn Owl project for predator control. The YPRD is part of the Lower Colorado River corridor between connecting lakes and wildlife preserves (KOFA, Cibola, Mittry Lake, Hidden Shores, Lake Martinez). Our district is included in the Lower Colorado River Multi-species Conservation Plan. Through our partnerships with our water users (farmers) we are creating a balance between water conservation, planning, efficiency, and cost savings.

1. Technical Proposal and Evaluation Criteria (Continued)

1.5 Evaluation Criteria

Utilizing our Natural Resources:
We have limited natural resources in this desert environment, other than water. We are using a "Best Practices" model by **conserving, protecting, and restoring** our natural resources (water and subsequent watersheds and habitats) by BWD system improvements and On-Farm voluntary activities (as discussed in previous sections).

Restoring Trust with Local Communities:
As a small close-knit community, our trust has been tried and tested through several generations. We have depended upon each other for many years and continue to foster that trust through our friendships, partnerships and communication. We work together with local, county, state, and Federal agencies (BIA, USBR and USFWS) as well as the Quechan Tribe. Our office is in Bard, surrounded by farmland. We and our staff are readily assessible to our community. Many of our workers and their parents have lived in this area for many years and have been involved in farming. Tribal families have lived on their land for four or five generations.

In January 2020, Bard Water District hosted its first grant workshop for producers, farmers and ranchers. Thirty-two attended. Presenters included USDA: Rural Development, NRCS, and the Farm Service from AZ and CA. Also, the CA Dept. of Food and Agriculture and a researcher from the U of AZ, who discussed previous/current research being conducted in our area. Through our outreach efforts we are developing a network of support from local and state offices.

Striking a Regulatory Balance:
We primarily work together to support our community, lifestyles, and our resources. Lately, our only regulatory challenges are the environmental compliance requirements for projects, but most of these areas are farmland and already disturbed. We work with local, county, state, and Federal agencies (BIA, USBR and UFWS) as well as the Quechan Tribe to resolve any issues. Watershed/riparian areas, drainages, and washes form a buffer zone and are not utilized. Our elected BWD Board addresses and votes on issues.

Modernizing our Infrastructure:
We are diligently pursuing all funding opportunities to improve and maintain our aging system. This has always included our water users' voluntary contributions. Our only limiting factor, is our available matching funding because these projects are quite costly. Improvements to our infrastructure have been based on priorities established by the BOR and BWD during their site visits and evaluation of our systems. We have utilized their technical guidance for this project for engineering design and construction. We currently utilize an O & M Agreement established between the BOR and BWG to maintain and operate both the Bard and Indian Units. This is implemented on a yearly basis. We have approximately 67 miles of canals, laterals, and ditches (30% lined) and 465 check gate structures of which the majority needs to be replaced as well as their peripheral structures. Our water users recently pledged $25/acre for Capital Improvements. They also provide a percent of their fallowing funds for system efficiency improvements. They are very supportive of any funding we receive to help to correct system deficiencies as well as improving system efficiencies.

2. Project Budget

2.1 Funding Plan and Letters of Commitment

The Federal share of this project is 43.50% The Non Federal Share is 56.50% BWD Indian Unit

In-kind Contributions: Salaries/Fringe, Equipment, Indirect Costs

This in-kind contribution will be provided by the Bard Water District during new "drop leaf" check gate and structure design, fabrication, and installation. We will utilize our staff and heavy equipment. The unit will be installed by a contractor, but Bard will prepare the site, provide support during installation and construction and remove debris and material at completion.

Bard Staff will be utilized for specific tasks during this four-week project (July-August). This will include Project Management, administration, on-site installation/construction (5 personnel, range of 8 to 24 hrs each). By using our own staff costs will be greatly reduced because less hours will be required, and they will utilize our own equipment as discussed below.

Costs incurred before start date: None

2.2 Budget Proposal

Total Project Costs

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal Funding	$48,000.00
Costs to be paid by the Applicant	$62,354.00
Value of third-party contributions	$0.00
TOTAL PROJECT COSTS	**$110,354.00**

Federal Funding

BUDGET ITEM DESCRIPTION	AMOUNT
Contractors: Three Engineering & Design, Gate Fabrication, Concrete Appurtenances	$47,500.00
Materials and Supplies	$500.00
TOTAL FEDERAL FUNDING	**$48,000.00**

Bard Water District Funding – In Kind

BUDGET ITEM DESCRIPTION	AMOUNT
Salaries and Wages	$15,743.00
Fringe	$9,269.00
Equipment	$27,310.00
In Direct Costs – De Minimus	$10,032.00
TOTAL NON-FEDERAL FUNDING	**$62,354.00**

Other Federal – None

2. Project Budget (continued)

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Limit	Quantity		
Salaries and Wages				
Project Manager	$42.91	148	Hrs	$6,350.68
Water Master	$25.24	148	Hrs	$3,735.52
Equipment Operator 1	$19.71	87	Hrs	$1,714.77
Gate Fabricator	$18.93	48	Hrs	$908.64
Gate Fabricator Helper	$13.67	48	Hrs	$ 656.16
Contracts & Grants Specialist	$24.31	80	Hrs	$1,944.80
Adm. Assistant	$21.63	20	Hrs	$ 432.60
Total		**559**	**Hrs**	**$15,743.17**
Fringe Benefits				
Project Manager 40.25%	$24.27	148	Hrs	$3,591.96
Water Master 38.59%	$9.74	148	Hrs	$1,441.52
Equipment Operator 46.83%	19.57	87	Hrs	$1,702.59
Gate Fabricator 49.34%	$8.76	48	Hrs	$420.48
Gate Fabricator Helper 59.84%	$8.18	48	Hrs	$392.64
Contracts & Grants Specialist 38.46%	$7.67	80	Hrs	$1,566.40
Adm. Assistant 35.46%	$7.67	20	Hrs	$ 153.40
Total		**559**	**Hrs**	**$9,268.99**
Equipment (Bard Water District)				
Front End Loader CAT 938G	$150.00	56	Hrs	$8,400.00
Rubber Tired Excavator CAT M318F	$155.00	22	Hrs	$3,410.00
Dump Truck – Kenworth	$135.00	6	Hrs	$ 810.00
Water Truck – GMC	$85.00	14	Hrs	$1,190.00
Service Truck 1 Ton 2000 Ford	$90.00	108	Hrs	$9,720.00
Project Manager Truck	$35.00	108	Hrs	$3,780.00
Total		**312**	**Hrs**	**$27,310.00**
Supplies and Materials				
Safety Supplies		**1**	**LS**	**$500.00**
Contractual/Construction				
Engineering and Design				$4,247.00
Dave's Welding (Fabricate Gate)				$3,253.17
Heimbach Construction (Furnish & Place)				$40,000.00
Total				**$47,500.17**
Environmental and Regulatory Compliance – Categorical Exclusion				**$0.00**
TOTAL DIRECT COSTS				**$100,322.33**
Indirect Costs – De-Minimus 10% Fixed	10%	$100,322.33		**$10,032.23**
TOTAL ESTIMATED PROJECT COSTS				**$110,354.56**

2. Project Budget (continued)

2.3 Budget Narrative

Salaries and Wages:

Project Manager: Nick Bahr, General Manager 148 Hrs
Manage Overall Project:
Bid Procurement Process (Engineering and Design and Measurement Devices)
Meet with Contractor for Engineering and Design for flumes, Construction of Flumes and Installation of Electronic Measurement Devices
Scheduling of Staff and Equipment.

Water Master: Shawn Weddle 148 Hrs
Assist Project Manager – supervise BWD employees

EQ Operators: 1 x 87 Hrs
Initial site preparation – some demolition activity and water diversion system if required, assist with construction – gate and concrete structure placement and testing.

Gate Fabricator 1x 48 Hrs and Helper 1x 48 Hrs
Assist with construction – gate attachment, testing and structural supports

Contracts & Grant Specialist: Arlene Kingery 80 Hrs
Contract Administration, Tracking, Quarterly and Final Reports

Administrative Assistant: Maria Alonso 20 Hrs
Purchasing, Payroll

The Bard Water District certifies that the labor rates included in the budget proposal represent the actual labor rates of the identified personnel.

Fringe: Fixed
Project Manager 40.25%
Water Master 38.59%
Equipment Operator 46.83%
Gate Fabricator 49.34%
Gate Fabricator Helper 59.84%
Contracts & Grants Specialist 38.46%
Adm. Assistant 35.46%

The Bard Water District certifies that the labor rates included in the budget proposal represent the actual labor rates of the identified personnel.

Travel: No Travel Required

2. Project Budget (continued)

2.3 Budget Narrative

Equipment: Will use Bard equipment (Bard Schedule)
Front End Loader – site preparation and final cleanup, installation
Rubber Tired Excavator – site preparation and final cleanup, installation
Dump Truck – Haul away construction debris and material
Water Truck – Dust Control
Service Truck – Used in support of Bard Crew on-site
Project Manager Truck – project management at site

Materials and Supplies:
Safety: Barriers, Level D Personal Vests, glasses, hard hats, gloves; Drinking Water
Concrete 30 cu yds for support structures

Contractual:
Engineering and Design
This work will be performed by Bard Water District Personnel & Equipment and augmented by
David Welding: Fabricate "Drop Leaf" Gate
Heimbach Construction: Check Structure/Concrete Appurtenances

Other:
Environmental Regulatory Compliance Costs: This project was discussed with Nohemi Olbert, USBR Yuma Office and a Categorical Exclusion was prepared in 2019 at no costs. No earth disturbing activities and no demolition of existing structures. New gate structure to be installed on elevated "borrow" material used to construct canal.

See responses to Environmental Compliance Questions on page 20 to determine what needed and preparation of Environmental compliance documents as required

3. Environmental and Cultural Resources Compliance

3.1 Impact to Surrounding Environment

No significant impact, all earth-disturbing work will occur within existing canal and sidewalls.

3.2 Threatened or Endangered Species, or Designated Critical Habitat

This area is greatly disturbed and in constant agricultural use. There are no threatened or endangered species present or critical habitat.

3.3 Wetlands or Other Surface Waters (CWA) – Waters of the United States

There are no wetlands within the project boundary.

3.4 Water Deliver System Date of Construction

The Cocopah Canal was constructed in 1909.

3.5 Modifications or Effects to Individual Features of a Delivery System (i.e., head gates, canals, or flumes)

There will be no effect on the existing delivery system.

3.6 Features in the Bard Water District Listed or Eligible for Listed on the National Register of Historic Places

These include The All- American Canal, USBR Dams, Head Gates, and Retention Areas, Old Southern Pacific Rail Line and Bridges, Fort Yuma, Potholes, Petroglyphs. None will be impacted by this project.

3.7 Archaeological Sites in Proposed Project Area

There are no archaeological sites in the project area.

3.8 Disproportionately High or Adverse Effects on Low Income or Minority Populations

No disproportionally high or adverse effects on low income or minority populations.

3.9 Limit Access to and Ceremonial Use of Indian Sacred Sites or Impact on Tribal Lands

Not limit access to and ceremonial use of sacred sites or impact Tribal lands.

3.10 Contribution to Introduction, Continued Existence, or Spread of Noxious Weeds or Non-Native Invasive Species

This project will reduce noxious weeds and non-native invasive species, including aquatic vegetation.

4. Required Permits or Approvals

There are no permits or approval required for this project.

5. Letters of Support

6. Official Resolution

Resolution is attached.

BARD WATER DISTRICT

RESOLUTION # 02062020 – 005

Drop Leaf Check Gate Installation at Cocopah and Ute

Bureau of Reclamation Small-Scale Water Efficiency Grant Application for Conveyance Improvements (BOR-DO-19-F006)

WHEREAS, at our Board Meeting held on February 6, 2020 at 9:00 a.m. The duly elected Board of Directors for the Bard Water District have discussed the Bureau of Reclamation ***Small-Scale Water Efficiency Grant Application for Conveyance Improvements*** (BOR-DO-19-F006). *Submission Date: 03/04/2020.*

WHEREAS, The Board of Directors of the Bard Water District acknowledges that it is the Districts' best interest to move forward with the Grant Application for the Small-Scale Water Efficiency Grant Application for Conveyance Improvements for the installation of a check gate at the Cocopah Canal and Ute Lateral. This project, when completed will improve water system management, efficiency and significantly reduce water losses. The grant will be completed in a timely manner within 2 years.

BE IT THEREFORE RESOLVED, the District approved the Bureau of Reclamation. Bureau of Reclamation **Small-Scale Water Efficiency Grant Application for Conveyance Improvements** (BOR-DO-19-F006). *Grant submitted and executed by Nick Bahr the District General Manager.*

Date: 2/6/20

Bill Scott

Bill Scott, President

BARD WATER DISTRICT

Attest:

Jerry Nagasawa Jr., Secretary/Treasurer

APPENDIX

WATERSMART GRANT
SMALL-SCALE WATER EFFICIENCY PROJECT APPLICATION
BOR-DO-20-F006

NEW DROP LEAF GATE CHECK STRUCTURE
FOR THE
UTE LATERAL AND COCOPAH CANAL
FY 2020-2021

List of Reports and Plans to be Used for References

Additional Maps

Sample – Action Table

Referenced Documents:

USBR Reservation System Evaluation Technical Memorandums/Reports;
Yuma Project Reservation Division, Lower Colorado Region
Conducted by the Technical Service Center (TSC) in July 2016:

Technical Report No. SRH-2016-15: Hydraulic Model Results for the Reservation Division Canal Capacity Assessment Laboratory

Hydraulic Laboratory Technical Memorandum PAP-1127: Recommended Flow Measurement and Remote Monitoring Upgrades for Delivery Systems Operations

Technical Memorandum No. 86-68210-2016-07
Evaluation of Operation and Maintenance Costs Allocation

Technical Memorandum No. 35-RDE-8150-STY-2016-02
Physical Assessment and Evaluation of Irrigation Delivery System

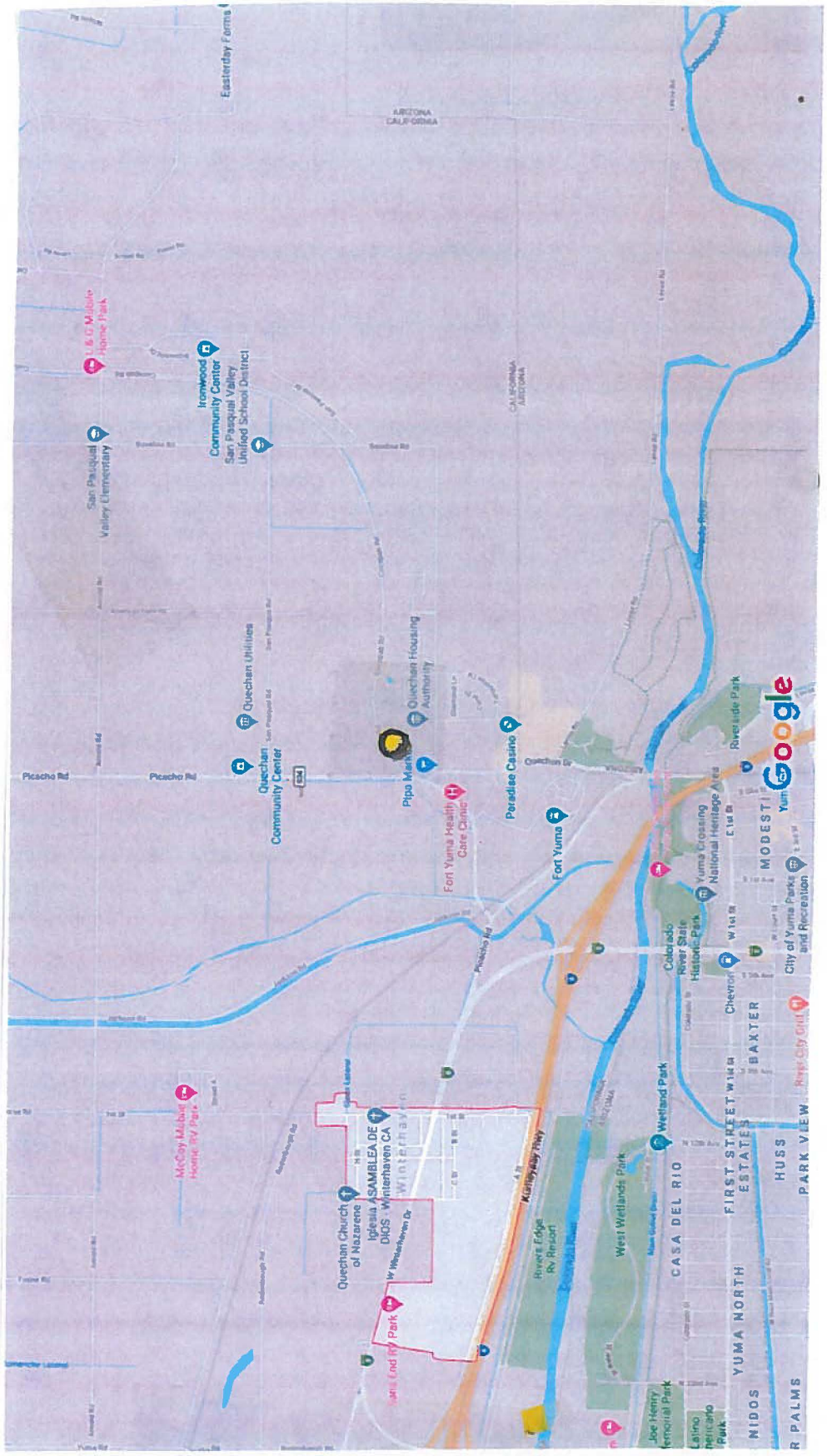
Bard Water District
Water Conservation Plan 2015

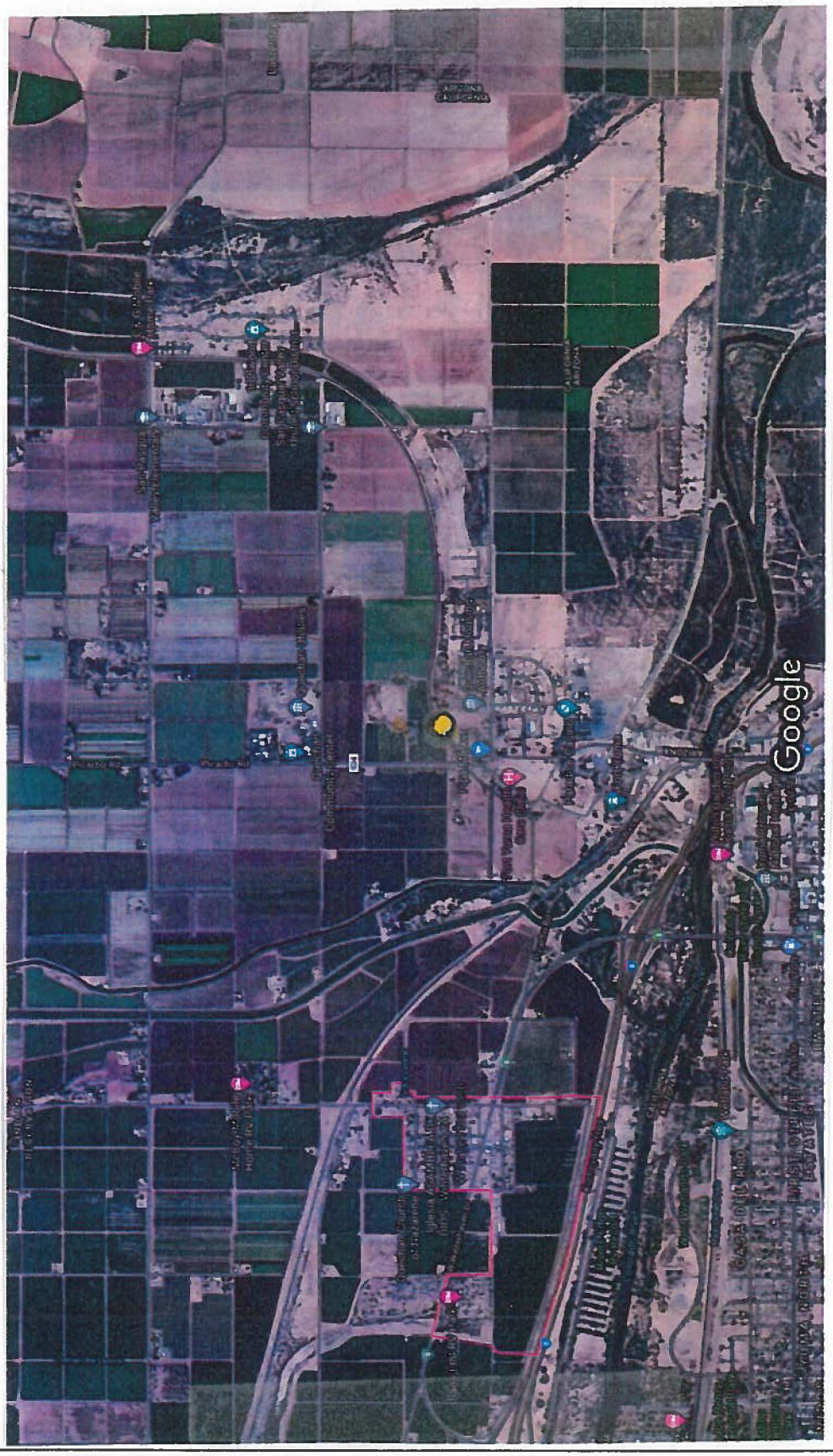
Ten-Year Capital Improvement Plan

Preliminary Drought Plan

USDA-NRCS
Conservation Implementation Strategy for Bard, CA Imperial County, Irrigation Improvement Project, Steve Reddy – District Conservationist, NRCS Yuma, AZ

U of AZ
Dr. Sanchez Evaluation Report


Project Location
Picacho Rd
Quechan Community Center
Quechan Utilities
Quechan Housing Authority
Pipa Market
Fort Yuma Health Care Clinic
Paradise Casino
Fort Yuma
Yuma Crossing National Heritage Area
Colorado River State Historic Park
Riverside Park
City of Yuma Parks and Recreation
Chevron
Wetland Park
West Wetlands Park
River Edge RV Resort
Quechan Church of Nazarene
Iglesia ASAMBLEA DE DIOS - Winterhaven CA
Mesa Linda RV Park
McCoy Mobile Home RV Park
Ironwood Community Center
San Pasqual Valley Unified School District
San Pasqual Valley Elementary
Easterday Farms
CASA DEL RIO
FIRST STREET ESTATES
BAXTER
MODEST
HUSS
PARK VIEW
YUMA NORTH
NIDOS
R PALMS
Google



Project Location

ACTIONS REQUIRED UPDATED 2/21/20

Title: Designing Water Management Improvements – Design of the Five Gate Structure

BOR Code: R19AP00020 **BWD Project No.:** _____

Grant: BOR-LC-18-F001 Water Conservation Field Services Program Lower Colorado Region **NTP/Contract:** April 3, 2019

Original Schedule Start: 04/03/19 **End:** 03/31/20 **Revised Schedule: Start:** 04/03/19 **End:** 06/30/20

Activity/Task	Comments	Initial	Date	Completed
Add AF Kingery and Shawn Weddle to USBR Point of Contact List	Ron Derma authorize before leaving to cover interim.	AFK	8/21/19	✖
Revise Internal Budget to separate USBR and BWD costs	Working copy to assign cost and track	AFK	08/05/19	✖
Add Nick Bahr to USBR Point of Contact	Letter sent to BOR	AFK	10/08/19	✖
Correct Budget for Personnel and Fringe	Personnel added and rate changes *Summary Budget Preparded – Need to get verbal approval from CO to increase Indirect Costs before finalizing*	AFK		
Revise Tasks and Milestone Schedule	Draft Prepared to Nick to review George may have provided one in his bid.	AFK	8/27/19 10/08/19	✖
Find George Cairo's Bid for Engineering/Design	Awarded – not have copy Found	AFK	9/27/19	✖
Get tentative Construction Bid from George $600,000 to $750,000	Need to Bid 5-Gate Construction in October	AFK	10/02/19	✖
Call George to get Updates on Project	On Schedule Next Meeting _____ *Final Plans due 4/20/20*	NB	10/03/19 Meeting	✖
Submit 1st Qtr Report – Due 9/30/19 2nd – 12/31, 3rd – 3/31, 4th/Final 6/30	1st, 2nd Completed	AFK	10/08/19	✖
Prepare Work Plan Responsibilities (staff and Subs)/Tasks	Quick reference – planning *In progress*	AFK		
Resolution from Quechan for support of project and 13.5% Contribution $21,600.00	*Ron met with Brian and Tribal Council about this project. Nick needs to follow -up.*	NB		