WaterSMART: Water and Energy Efficiency Grant for Fiscal Year 2018 Grant Application

Installment of SCADA, Pipe-less Sludge Mechanisms, High Service Pumps with VFDs, and Backwash Pumps with VFDs Project



Applicant:

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Date: May 10, 2018



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Technical Proposal Executive Summary Applicant Information

Date: May 10, 2018

Applicant Name: Sharyland Water Supply Corporation (SWSC)

City, County, State: Alton, Hidalgo County, Texas

Project Manager: Randall Winston, P.E.

Project Funding Request \$300,000.00 of Total Project cost of \$2,891,392.00

Project Summary

Sharyland Water Supply Corporation (SWSC) is proposing to install SCADA, pipe-less sludge mechanisms, high service pumps with VFD controls, and backwash pumps with VFD controls into their 6 MGD WTP #1. Funding for this project will conserve water and energy, as well as benefit disadvantaged communities and endangered species. This project will result in a significant and sustainable water savings of 269 acre feet per year (AF/yr) for the full plant flow of 6 MGD with an energy savings of 1,892,915 kilowatt per year. SWSC is seeking funding from the Bureau of Reclamation under Funding Group I.

This project meets the FOA goals by using SCADA along with other components to conserve water and energy use at the water treatment plant.

Estimated Schedule

The project will be accomplished within the two year allowance. Estimated start date is January 3th, 2019 and end date is June 3, 2020.

Federal Facility

The project is not located on a federal facility.

Background Data

Sharyland Water Supply Corporation (SWSC) was created in the 1960's as a means to build a rural water system to service approximately 700 property owners from the surface waters of the Rio Grande River through a series of irrigation canals. Today, SWSC services approximately 18,011 connections across a service area of approximately 100 square miles including Alton, Palmhurst, Mission, Edinburg, McAllen, McCook and numerous colonias in north and westernmost Hidalgo County. Colonias are defined by the Texas Attorney General as "typically, a residential area lacking some basic infrastructure like a drinking water supply, sewage treatment, paved roads, adequate drainage, etc..."

SWSC applied and completed an amendment to Water CCN #10558 to provide utility service in Hidalgo County. The total area being requested includes approximately 51,077 acres and 613 current customers. Please see SWSC's service area map below as **Exhibit 1.**

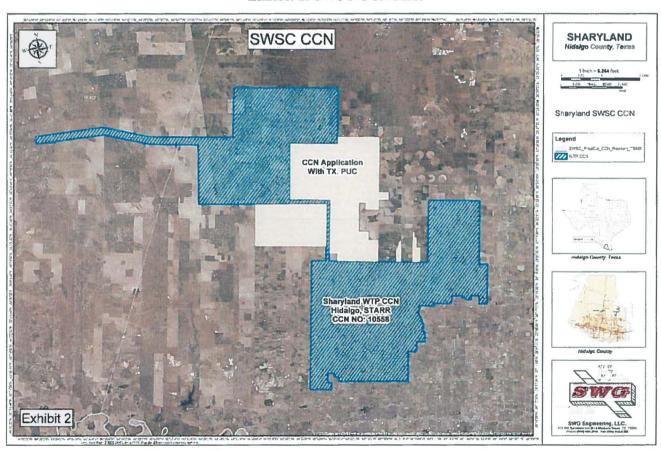


Exhibit 1: SWSC CCN MAP

SWSC currently operates three water treatment plants (WTP)s 6, 8, & 8 MGD for a total capacity of 22 MGD. In addition to the water treatment plants, SWSC relies on over 800 miles of water lines, and five elevated storage tanks to ensure the wellbeing of customers by providing safe, sanitary water.

SWSC's water treatment plant #1 (pictured below) was built in 1972 as a 1 MGD and was later expanded to 6 MGD in 1980. The 38 year old water treatment plant was designed with few moving parts.



SWSC WTP #1

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Water Supply

• Source of water supply:

Water is sourced from United Irrigation District's pump station at the Rio Grande River.

• Water rights involved:

Sharyland Water Supply has three sources of water rights for their three plants:

- 2,000 acre-feet from Santa Cruz #15 through District 1 for plant #2
- 3,465 acre-feet through HCID #1 for water treatment plant #2
- 5,200 acre-feet through United ID for water treatment plants #1 and #3.

• Current water users and number of water users served:

Today, SWSC services approximately 18,011 connections which consist mostly of residential single family connections. Out of 18,011 connections there are 16,791 residential single family, 73 institutional, and 1,147 commercial connections.

• Current and projected water demand:

Sharyland Water Supply Corporation is located in Rio Grande Water Planning Group (Region M). Current water demands for the year 2020 are 8,026 acre-feet. Based on the 2016 Texas State Water Plan, Sharyland's water demands are expected to increase to 16,896 acre-feet by the year 2070. Please see **Table 1** below for TWDB projections for SWSC.

Table 1: SWSC TWDB Projections

| | 2011 Regional Water | 2016 Regional Water | 2016 Regional Water |
|------|---------------------|---------------------|---------------------|
| | Plan Water Demand | Plan Water Demand | Plan Population |
| | Projections* | Projections* | Projections |
| 2020 | 5,469 | 8,026 | 45,075 |
| 2030 | 6,095 | 9,722 | 55,970 |
| 2040 | 6,747 | 11,460 | 66,908 |
| 2050 | 7,492 | 13,252 | 77,869 |
| 2060 | 8,365 | 15,094 | 88,829 |
| 2070 | N/A | 16,896 | 99,485 |

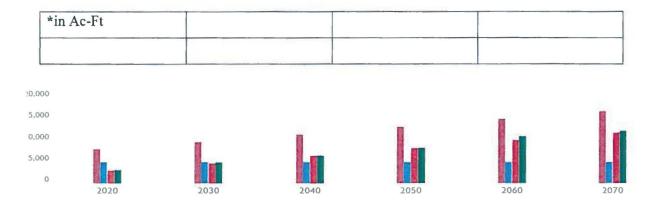


Table 2: SWSC Totals by Decade (Acre-feet/ year)

Purple= Demands

Blue= Existing Supplies Red=Need (potential shortages)

Green=Strategy Supplies

Image Source: https://2017.texasstatewaterplan.org/entity/131

Potential shortfalls in water supply

The Rio Grande River is the valley's main source of water. Currently, river water is able to meet the majority of demands but there are some shortages in supplies. However, it will not be sufficient to supply the growing population. According to the 2013 LRGV Basin Study, an additional 592,000 ac-ft/year (35% of total water demand) will be needed by the year 2060. The Rio Grande Valley's population is expected to grow to over 4 million by 2070, according to TWDB's 2016 Region M Water Plan.

Water demands are switching from irrigation to municipal as the population grows and citrus fields and ag lands are leveled to make way for the construction of lots for future developments. Please see Table 3. According to the 2016 Rio Grande Regional Water Plan, "municipal demands are expected to increase regionally from a projected 311,591 acre-ft/year in 2020 to 612,127 acre-ft/year in 2070." Please see Table 4.

Steps must be taken now to preserve the river's water before there are serious shortfalls in the supply. Currently, water treatment plants can be improved to insure they save as much water and energy supply in the system as possible. This will enable them to stretch the raw water supplies further before municipalities have to turn to brackish and saltwater desalinization plants, as is suggested in both the 2013 LRGV Basin Study and the 2016 Region M Water Plan.

Table 3

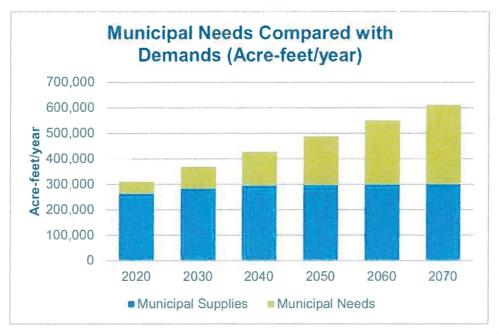


Figure 8 Municipal Supplies Shown relative to Municipal Demands (Acre-feet /year)

Image source: 2016 Region M Water Plan

Table 4

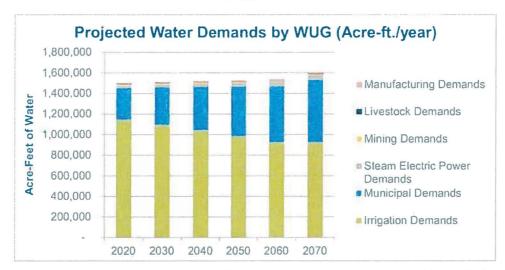


Figure 6 Water demand projections for each water user group type in Region M (Acre-feet/year)

Image Source: 2016 Region M Water Plan

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• Water Delivery System

SWSC currently has 18,011 connections.

Energy Efficiency:

Currently, water treatment plant #1's yearly energy costs are \$120,534.53 based on Sharyland's 2017 electric bill. WTP #1 uses an average of 5,717 kilowatts of energy on a daily basis with a peak summer demand of 6,508 kilowatts daily with an average plant flow of 3.3 MGD.

High service pumps with VFDs and SCADA are estimated to save will save 1,891,260.37 kwh/year and \$85,918.74 a year. Please find savings calculations below.

| Average Current Service Pumping Rate: | . , |
|---------------------------------------|--|
| Projected 20-year Growth: | 0% |
| Average Future Service Pumping Rate: | 6,000,000 gpd |
| | 4,167 gpm |
| Pumping Rate Through Planning Period: | 6,000,000 gpd |
| | 4,167 gpm |
| | 2,190,000,000 gallons/year |
| Service Pumps | |
| Existed Motor Efficiency (Estimated): | 83% |
| Existing Pump Efficiency (Estimated): | 66% |
| New Motor Efficiency: | 96,4% |
| New Pump Efficiency: | 84% |
| Total Dynamic Head: | 222 |
| Current Power Cost: | \$ 0.095 |
| Existing Service Pumps/Motors: | (222' x 0.00315) x (6,000,000/1,000)/(0.83 x 0.66) = |
| | 7,659.36 kWh/day x 365 days/year = |
| | 2,795,668.13 kwh/year x \$0.095/kWh = |
| | \$ 265,588.47 |
| | $(222' \times 0.00315) \times (6,000,000/1,000)/(0.964 \times 0.84) =$ |
| New Service Pumps/Motors: | 5,181.54 kWh/day |
| | 1,891,260.37 kwh/year |
| | \$ 179,669.74 |
| Service Pump Savings: | \$ 85,918.74 |

Backwash pumps with VFDs and SCADA are estimated to save 1,655 kwh/year and \$368.43 a year. Please find savings calculations below.

| Backwash Pumps | | | |
|---------------------------------|--|-----------|----------|
| Existing Backwash Pum | p Head (Estimated): | 34 | feet |
| Existed Motor Efficiency | (Estimated): | 86% | |
| Existing Pump Efficiency | (Estimated): | 69% | |
| New Backwash Pump He | ead | 71.32 | feet |
| New Motor Efficiency: | | 99.5% | |
| New Pump Efficiency: | | 83% | |
| Current Power Cost: | | \$ 0.095 | |
| Calculated | | | |
| Existing Filter Backwa | sh Pumps: | | |
| Backwash Volume: | | 54,840 | gallons |
| Backwash Losses: | 54,840 gallons/3,948,480 gallons = | 1.4% | |
| Power Requirements: | $(34' \times 0.00315) \times (6,000,000 \times 0.014/1000)/(0.86 \times 0.69) =$ | | |
| Existing Backwash Pum | ps/Motors | 15.16 | kWh/day |
| | 11,37 kWh/day x 365 days/year = | 5,533 | kWh/year |
| | 5,533 kWh/year x \$0.095 = | \$ 525.64 | /year |
| New Filters Backwash | Pumps: | | |
| Backwash Volume: | | 28,000 | gallons |
| Backwash Losses: | 28,000 gallons/3,948,480 gallons = | 0.3% | |
| Power Requirements: | $(71,32' \times 0.00315) \times (6,000,000 \times 0.003/1000)/(0.995 \times 0.83) =$ | | |
| New Backwash Pumps/N | Motors | 4.53 | kWh/day |
| | 4.53 kWh/day x 365 days/year = | 1,655 | kWh/year |
| | | \$ 157.21 | |
| Energy Savings: | \$525.64 - \$157.21 = | \$ 368.43 | /year |

• Past Relationship with Reclamation

Sharyland Water Supply Corporation has not worked with The Bureau of Reclamation before.

Project Location Map

Sharyland Water Supply's 6 MGD Water Treatment Plant #1 is located at 3907 E. Main Avenue, Alton, Texas in Hidalgo County. The project site is within Alton's city limits. The project latitude is 26°16'56.8"N and the longitude is 98°16'36.3"W. Please see attached Site Location Map (Exhibit 2) below.



Exhibit 2: Site Location Map

Technical Project Description

Sharyland is planning to rehabilitate its' Water Treatment Plant #1 with major modifications in order for the plant to operate more efficiently than originally designed and bring the nearly 40 year old plant into modern controls while meeting TCEQ standards. The entire project cost is \$14,637,336.00. Please find total cost estimate attached in **Appendix A**. SWSC would like to submit on WaterSMART portions of it that will help save energy and water and are not OM&R. The total cost of WaterSMART components is \$2,891,392.00. Please find proposed improvements to the water treatment plant map below as **Exhibit 3**.



Exhibit 3: Watersmart Improvements

The first item of rehabilitation that SWSC would like to submit on is the modifications to the existing TracVacs. The TracVacs will be replaced with new Pipe-less sludge mechanisms that will save a large portion of water that is currently wasted from the plant. The old TracVacs run continuously with the use of a vacuum, while the pipe-less sludge mechanisms will be utilizing electronics to run only as needed. This pipe-less sludge mechanisms has an anticipated value of \$480,000.00.



Replacement of existing TracVacs below water with pipe-less sludge mechanisms

The second item that SWSC would like to submit on is the filter SCADA system which is outdated. Backwashing of the filters will be electronic with the use of the new SCADA system and will help save a tremendous amount of energy for pumping and also water wasted. The FilterMagic SCADA will tie into the plant's SCADA system. The new filter SCADA system has a value of approximately \$1.5 million.

According to FilterMagic's website, "Filter Magic® is a universal, simple, reliable and low-cost Gravity Filter Control System perfect for retrofit solutions or new construction that can reduce the cost of installation by as

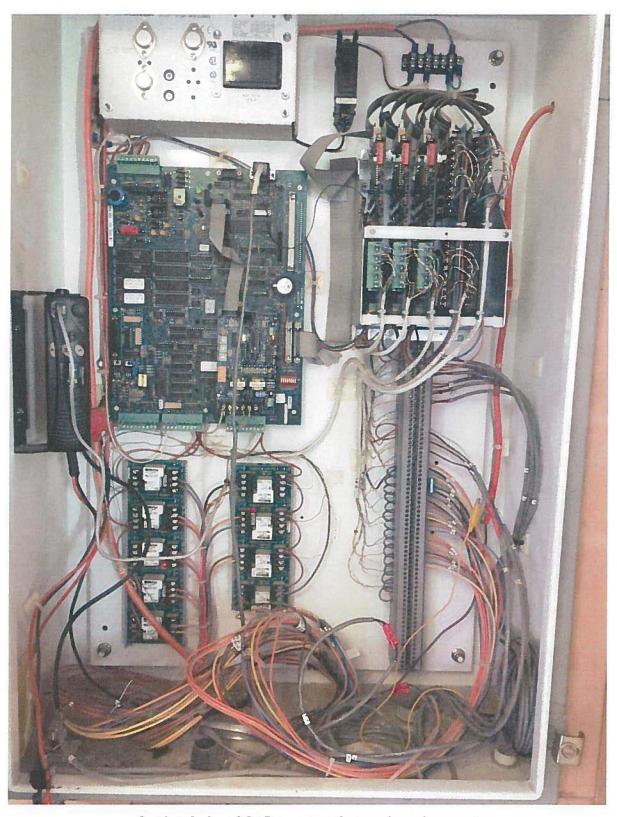
much as 60%. Filter Magic® is designed to make all Gravity Filter Control Systems a simple, reliable, low-cost solution instead of a unique integrated and complicated control system. Our systems include state-of-the-art dual filter control consoles, simple straight-forward easy to install Actuator Sensor – Interface (AS-I) bus network technology and high quality long-life pneumatic vane actuators. Electric and hydraulic actuation solutions are also available. Filter Magic® Solutions are completely scalable from a micro 2-filter water or wastewater treatment plant to a major facility with 40 or more filters." Please see a photo of a FilterMagic system below.

Please see additional information on FilterMagic in Appendix A.

Influent Air Scour Drain Fifluent Waste Backwash

FilterMagic that will replace current outdated filter system

Image Source: https://www.filtermagic.com



Outdated plant SCADA system that needs replacement
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The third item that SWSC would like to submit on is the backwash pumps. The current backwash pump will be replaced with higher efficiency backwash pump and motor control to be used with VFDs. A second backwash pump will be added as well. This has a value of \$135,000.00. The use of the new backwash pumps and motors along with the VFDs, and also tied to the WTP SCADA, will insure tremendous amounts of water and energy savings with it.



Replacement of backwash pump with higher efficiency backwash pump

Lastly, the high service pumps with VFDs will be changed with more efficient high service pumps and motors that are certified for use with the VFDs. This will help control the pressures in the system and not over pressurize the system in which is allows it to be subject to waterline bursting and loss of water. The VFDs and new motors will also help provide pressures while reducing energy cost and consumption. This has an anticipated value of \$190,000.00.



Replacement of high service pumps with higher efficiency high service pumps with VFDs

Summary

The total project cost of SCADA, Pipe-less sludge mechanisms, High Service Pumps with VFDs, and Backwash Pumps with VFDs components is estimated at \$2,891,392.00

Evaluation Criteria Evaluation Criterion A: Quantifiable Water Savings

All applicants should be sure to address the following:

Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project.

Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.

The current amount of water that is being lost is 116 million gallons a year (357 acre-feet). Pipe less sludge mechanisms are estimated to save 91 acre-feet of water a year. The VT SCADA, FilterMagic system, and backwash pumps are estimated to save 122 acre-feet of water a year. The high service pumps with VFDs are estimated to save 56 acre-feet of water a year. The total estimated water to be conserved by this project is 312 acre-feet of water per year.

Describe current losses: Please explain where the water that will be conserved is currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground)?

Water that will be conserved is currently seeping into the ground, being evaporated, and spilling into the ditch. Conserved water will stay in the Rio Grande River and in the water treatment plant's reservoir.

Describe the support/documentation of estimated water savings: Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Note: projects that do not provide sufficient supporting detail/calculations may not receive credit under this section. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal. In addition, please note that the use of visual observations alone to calculate water savings, without additional documentation/data, are not sufficient to receive credit under this section. Further, the water savings must be the result of reducing or eliminating a current, ongoing loss, not the result of an expected future loss.

High service pumps with SCADA water savings calculations

Calculations were based on inflow and outflow data. As seen in the table below, more than 68 million gallons or 209 acres feet were lost at the plant throughout the year of 2017 at an average flow of 3.3 MGD and estimated loss of 357 acre-feet at 6 MGD. The high service pumps with SCADA will help save approximately 1.5% of raw water. Therefore, when we multiply the 1,214 million gallons by 1.5%, we calculate about 18.2 million gallons per year or 55.891 acre feet per year to be saved.

| | | | SHARY | LAND WA | TER SUPP | LY CORPORA | TION | | | |
|----------------------------------|-------------------|-------------------------|------------------------|------------------------|-----------------------|-----------------------------|----------------------------|------------|----------------------------|------------|
| WATER TREATMENT PLANT # 1 (2017) | | | | | | | | | | |
| MONTH | RAW TOTAL (MG) | DAILY RAW AVG. (MGD) | DAILY RAW MAX (MGD) | DAILY RAW MIN (MGD) | TREATED TOTAL (MG) | DAILY TREATED AVG. (MGD) | DAILY TREATED MAX (MGD) | DATE | DAILY TREATED MIN (MGD) | DATE |
| JAN | 99.310 | 3.204 | 3.600 | 2.770 | 89.027 | 2.872 | 3.327 | 1/26/2017 | 2.492 | 1/29/2017 |
| FEB | 93.580 | 3.342 | 3.730 | 2.560 | 87.028 | 3.108 | 3.550 | 2/14/2017 | 2.496 | 2/22/2017 |
| MAR | 98.830 | 3.188 | 3.840 | 2.650 | 91 818 | 2.962 | 3.557 | 3/29/2017 | 2,405 | 3/11/2017 |
| APR | 105.565 | 3.519 | 4.160 | 2.950 | 100.390 | 3.346 | 3.770 | 4/28/2017 | 2,682 | 4/13/2017 |
| MAY | 119 810 | 3.865 | 4.370 | 2.970 | 114 015 | 3.678 | 4.104 | 5/15/2017 | 2.628 | 5/23/2017 |
| JUN | 119.220 | 3.974 | 4.830 | 3.260 | 116 531 | 3.884 | 4.836 | 6/23/2017 | 2.863 | 6/26/2017 |
| JUL | 118.290 | 3.816 | 4.370 | 3.300 | 118.239 | 3.814 | 4.346 | 7/26/2017 | 3.310 | 7/9/2017 |
| AUG | 123.190 | 3.974 | 4.560 | 3.060 | 117 298 | 3.784 | 4.387 | 8/2/2017 | 2.740 | 8/26/2017 |
| SEP | 110.010 | 3.667 | 4.520 | 2.970 | 105.046 | 3.502 | 4.243 | 9/4/2017 | 2.563 | 9/30/2017 |
| ост | 92.147 | 2.972 | 3.910 | 2.030 | 86.656 | 2.795 | 3.592 | 10/10/2017 | 2.301 | 10/7/2017 |
| NOV | 101.456 | 3.382 | 4.320 | 2.893 | 95 516 | 3.184 | 3.874 | 11/8/2017 | 2.574 | 11/12/2017 |
| DEC | 100 866 | 3.254 | 3.622 | 2.894 | 92.579 | 2.986 | 3.629 | 12/1/2017 | 2.517 | 12/28/2017 |
| YTD TOTAL | 1282.274 | | | | 1214.143 | | | | | |
| YTD Max | 123.190 | 3.974 | 4.830 | | 118 239 | 3.884 | 4.836 | 6/23/2017 | | |
| YTD Min | 92.147 | 2.972 | | 2.030 | 86.656 | 2.795 | | | 2.301 | 10/7/2017 |
| YTD Avg | 106.856 | 3.513 | | | 101.179 | 3.326 | | | | |
| 1 acre-ft = | 325851 | | | | | | | | Average Raw | to 6 MGD |
| Water Loss: | | 1,282.274 MG | - 1,214 143 MG = | 68.131 | MG/Year | 209.086 | acre-ft | | 1.708 | 3 |
| Water Loss (| g 6 MGD Flow: | 68.131 MG x 1 | .708 = | 116.361 | MG/Year | 357.099 | acre-ft | | | |
| 1.5% aproxir | nate savings | | | | | | | | | |
| Water Savin | gs: | 1,214.143 x 0.0 | 015 = | 18.212 | MG/Year | 55 891 | acre-ft | | | |

SCADA, FIlterMagic, and Backwash Pumps Water Savings Calculations

The backwash volume for both the existing and proposed filters was determined. There are currently 3 filters being backwashed per day at a run time of 24 hours and the flow rate is at approximately 2,742 gallons per minute. Backwash time is assumed to be 20 minutes. The filter size is 13.5' by 13.5' and backwash rate was determined by dividing the flow rate (gpm) by the filter size (SF). Filter size, backwash rate, and backwash time were then multiplied to get the volume per backwash. Because there are three filters backwashed, this value was multiplied by three in order to determine backwash volume per day. The volume for the conventional backwash amounts to approximately 60,049,800 gallons per year.

The same procedure was used to calculate the volume of the proposed multimedia with air scour filter. The proposed filter is anticipated to have a flow rate of 2,800 gallons per minute. Additionally, it is proposed to run for two and a half days or 60 hours, at a backwash time of 10 minutes. Two filters will be backwashed per day. Filter size, backwash rate, and backwash time were then multiplied to get the volume per backwash. Multiplying by the two filters, we found the volume to be 56,000 gallons per day or 20,440,000 gallons per year. Finally, by getting the difference of volume of the current and new filters, it was calculated that an estimated 20,440,000 gallons per year or 121.56 acre feet per year will be saved.

| Conventional Filter Back | wash Volume: | | | |
|-------------------------------------|--|------------|------------|--------------------|
| Given: | | | | |
| Filter Run Time: | | | hours | |
| Backwash Pump Flow Rate | | | gpm | *current backwash |
| Filter Size: | 13.5' x 13.5' = | 182.25 | | pump flow rate |
| Backwash Rate: | 2,742 gpm x 182,25 SF = | | gpm/SF | |
| Backwash Time: | | 20 | minutes | |
| Calculated | | | | |
| Filter Run Production: | 2,742 gpm x 24 hours x 60 min/hour = | 3,948,480 | gallons | |
| Volume/Backwash: | 182.25 SF x 15 gpm/SF x 20 min = | 54,840 | gallons/b | ackwash |
| 3 Filters Backwashed a Day | 54,840 gallons/backwash x 3 filters = | 164,520 | gpd | |
| Backwash Volume/Year | 164,520 gpd x 365 days/year = | 60,049,800 | gallons/y | ear |
| Multi Media with Air Scou Given: | r Filter Backwash Volume: | | | |
| Filter Run Time: | | 60 | hours | |
| Backwash Flow Rate: | | 2800 | gpm | *anticipated new |
| Filter Size: | 13.5' x 13.5' = | 182.25 | SF | backwash pump flow |
| Backwash Rate: | 2,800 gpm x 182,25 SF = | 15.36 | gpm/SF | |
| Backwash Time: | - | 10 | minutes | |
| Calculated: | | | | |
| Filter Run Production: | 2,800 gpm x 60 hours x 60 min/hour = | 10,080,000 | gallons | |
| Volume/Backwash: | 182.25 SF x 15.36 gpm/SF x 10 min = | 28,000 | gallons/b | ackwash |
| 2 Filters Backwashed a Day | : 28,000 gallons/backwash x 2 filters = | 56,000 | gpd | |
| Backwash Volume/Year: | 56,000 gpd x 365 days/year = | 20,440,000 | gallons/y | ear |
| Water Savings: | 60,049,800 gpy - 20,440,000 gpy = | 39,609,800 | gallons/y | ear |
| | 39,609,800 gpy / (325,851 gallons/1 acre-ft) = | 121.56 | acre-ft/ye | ar |

Pipe-less Sludge Mechanisms Water Savings Calculations

The 6 MGD water treatment plant has an average inlet turbidity of 10.0 NTU and an alum coagulant dose of 100 mg/l. Turbidity solids were then calculated by multiplying the plant flow, turbidity, and coagulant dose. Chemical solids were also calculated by multiplying plant flow, coagulant dose, and chemical solids. These two were then combined to find the total solids production; total solids is crucial in finding the volume of the sludge blowdown, which was calculated by dividing by the sludge withdrawal concentration. (Note: conversion factors have to be used). The water plant includes 6 trac vacs units. The specs of the trac vac are as follows: 15,000 mg/l in sludge withdrawal concentration, a rate of 130 gpm, length of 78 feet, and a travel speed of 1.5 fpm. Using these specifications we can calculate the sludge withdrawal per pass by dividing the length the travel speed and then multiplying. Given that there are 6 units and two passes per day, it was calculated that the trac vac withdrawals approximately 81,120 gallons of water. By conversion, this amounts to more than 29 MGD per year or 90.87 acre feet per year.

| Water Treatment Plant | | | |
|--|---|---------|---------|
| Sludge Production & Trac Vac Water Use | | | |
| Project | | SWSC WT | TP #1 |
| SIGLER WINSTON GREENWOOD - Randall Winston, P.E. | | | |
| Plant Flow (MGD) | | 6 | |
| Average Inlet Turbidity (NTU) | | 10.0 | |
| Coagulant | | Alum | |
| Coagulant Dose (mg/l) | | 100 | |
| Turbidity Solids Production (Ib/NTU) | | 1.3 | |
| Turbidity Solids (ib/day) | 6 MGD x 10.0 NTU x 100 mg/l x 8.34 = | 650.52 | |
| Chemical Solids Production (Ib/Ib) | | 0.33 | |
| Chemical Solids (lb/day) | $6 \text{ MGD} \times 100 \text{ mg/l} \times 0.33 \text{ lb/lb} =$ | 1651.32 | |
| Total Solids Production (lb/day) | 650.52 lb/day + 1,651.32 lb/day = | 2301.84 | |
| No. of Trac Vac Units | | 6 | |
| Sludge Withdrawl Conc. (mg/l) | | 15,000 | |
| Total Sludge Blowdown Volume (gal/day) | $(2.301.84 \text{ lb/day} \times 1.000,000)/(15,000 \text{ gpd} \times 8.34) =$ | 18,400 | |
| Trac Vac Withdrawl Rate (gpm) | | 130 | |
| Trac Vac Basin Length (ft) | | 78 | |
| Trac Vac Travel Speed (ft/min) | | 1.5 | |
| Sludge Withdrawl Travel Time per Pass (min) | 78 ft / 1.5 fpm = | 52 | |
| Sludge Withdrawl per Pass (gal) | 130 gpm x 52 min = | 6,760 | |
| Trac Vac Withdrawl / Two Passses per Day for 6 Units (gal) | 6,760 gallons x 6 units x 2 passes = | 81,120 | |
| Gallons per Year | 81,120 gallons x 365 days/year = | 29, | 608,800 |
| Ac-Ft/yr | 29,608,800 gpy / 325,851 gallons/acre-ft = | | 90.8 |

Evaluation Criterion B: Water Supply Reliability

Please address how the project will increase water supply reliability. Proposals that will address more significant water supply shortfalls benefitting multiple sectors and multiple water users, will be prioritized. General water supply reliability benefits (e.g., proposals that will increase resiliency to drought) will also be considered. Please provide sufficient explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:

Does the project promote and encourage collaboration among parties in a way that helps increase the reliability of the water supply?

Yes, the project will promote and encourage collaboration among parties. Conserving the Rio Grande's river water is a common interest for utilities, irrigation districts, and municipalities in the Valley and will benefit everyone in the region.

Is there widespread support for the project?

There is widespread support among SWSC's board members and employees. There is also support from the City of Alton, City of Palmhurst, United Irrigation District, Lower Grande Development Council, Texas Senator Juan Hinojosa, Texas Representative Terry Canales, and Texas Representative R.D. Bobby Guerra. Please see letters of support in **Appendix A**.

What is the significance of the collaboration/support?

The significance of the support is that Sharyland Water Supply Corporation, City of Alton, City of Plamhurst, United Irrigation District, Texas Senator Juan Hinojosa, Texas Representative Terry Canales, and Texas Representative R.D. Bobby Guerra understands the importance of water sustainability and wants to see Water Treatment Plant #1 conserve as much water and energy as possible for the communities that SWSC serves.

Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?

Yes, it does enhance the possibility of future water conservation improvements by other water users. Sharyland is one of the three largest water utilities in the area and State of Texas and can be a model for other utilities to be inspired by this project and take similar steps to conserve their plants' water and energy before having to rely on alternative water sources such as brackish and saltwater desalinization plants to meet growing demands.

Will the project make water available to address a specific water reliability concern? Please address: Explain and provide detail of the specific issue(s) in the area that is impacting water reliability, such as shortages due to drought, increased demand, or reduced deliveries.

Yes, the project will make water available from the plant to multiple water reliability concerns in the region.

The first water reliability concern is a steep population growth and the future inability for the river to meet growing demands. According to Texas Water Development Board's 2016 Rio Grande Regional Water Plan, Region M's population is expected to grow to over 4 million by 2070. Due to this growth and a switch from irrigation to municipal needs, there will be an additional 592,000 ac-ft/year (35% of total water demand) needed by the year 2070.

A second concern is that the Rio Grande River is shared by both the United States and Mexico through two extremely complex treaties. Mexico is also faced with rapid population growth. Mexico's side of the Rio Grande's population is expected to grow to 12.67 million by the year 2025 according to TWDB's 2016 Rio Grande Regional Water Plan.

A third concern is the Rio Grande Valley is often faced with drought issues. From 2010-2015, Texas was under an extreme drought. As of 2018, part of the Region is under a moderate drought according to drought.gov. (Please see **pictures** below). Due to these issues, it is imperative to save as much river water as possible.

Drought Conditions (Percent Area)

| | _ | The second second | | | | |
|-------------------------------------|--------|-------------------|--------|--------|---------|-------|
| Week | None | D0-D4 | D1-D4 | D2-D4 | 107-104 | D4 |
| Current 4/24/2018 | 33.36% | 66.64% | 53.23% | 26.26% | 14.54% | 3.88% |
| Last Week 4/17/2018 | 35.09% | 64.91% | 49.47% | 23.58% | 13.70% | 4.37% |
| Three Months Ago 1/23/2018 | 14.50% | 85.50% | 49.49% | 17.14% | 4.25% | 0.00% |
| Start of Calendar Year 1/02/2018 | 33.37% | 66.63% | 33.56% | 5.94% | 0.11% | 0.00% |
| One Year Ago 4/25/2017 | 90.58% | 9.42% | 1.34% | 0.00% | 0.00% | 0.00% |

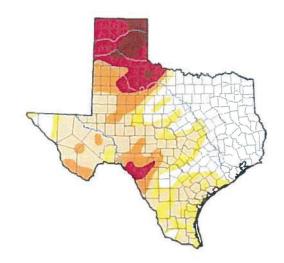


Image Sources: Drought.gov

Describe where the conserved water will go/how it will be used. Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)? Will it be left in the river system?

The conserved water will be left in the Rio Grande River basin until needed and the water treatment plant's reservoir for future use.

Describe how the project will address the water reliability concern?

The project will address the water reliability concern by modernizing the plant's infrastructure to preserve as much water as possible in the river.

Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?

Yes, the project will help prevent a water-related crisis by preserving the river's water and helping to minimize needs for additional water rights. There is frequent tension over the water in the basin due to shared treaties with Mexico, steep population growth in the region, and drought. Sharyland Water Supply Corporation is one of the biggest water suppliers in the region. With the proposed project, SCADA will insure that pumps are shut off at appropriate times and this will save a tremendous amount of water and energy, thus resulting in less water taken from the Rio Grande River.

The proposed SCADA, pipe-less sludge mechanisms, high service pumps with VFDs, and backwash pumps with VFDs will ensure that the plant is run in the most efficient method and minimize lost water and conserve electricity.

Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.

The entire project will enable the plant to put the conserved water to its intended use in the distribution system and ultimately to the users.

Describe the roles of any partners in the process. Please attach any relevant supporting documents.

There are not any partners involved in this watersmart project. For the rest of the \$14,637,336.00 project, a loan will be obtained through USDA.

Indicate the quantity of conserved water that will be used for the intended purpose.

The 269 acre-feet of water will go to distribution to fulfill its intended purpose.

Will the project benefit Indian tribes?

No, the project will not benefit Indian tribes.

Will the project benefit rural or economically disadvantaged communities?

Yes, the project will benefit rural and economically disadvantaged communities. The Rio Grande Valley has a high poverty level, and according to the Rio Grande Regional Water Authority's 2013 Lower Rio Grande Basin Study, the median household income in Region M is \$23,489.00, which is lower than the state of Texas' average household income of \$39,927.00.

SWSC's service area includes numerous designated colonia areas belonging to Hidalgo County and extra territorial jurisdiction of Alton, Palm Hurst, McCook, Mission, Edinburg, and McAllen as can be seen in **Exhibit 4.** Colonias are defined by the Texas Attorney General as "typically, a residential area lacking some basic infrastructure like a drinking water supply, sewage treatment, paved roads, adequate drainage, etc..."

There are seven colonias listed within one mile of the proposed project at water treatment plant #1 which are as follows: Jardin Subdivision #1, Tri-City Subdivision #2, Stewart South Subdivision, Shary Groves Estates, Glenshire Estates, and Amber Land Subdivision. The area around water treatment plant #1 is composed mostly of Hispanic residents and the total minority population in the area is 90.7%. According to the Secretary of State, Hidalgo County has the largest amount of colonias in the region (Please see **Table 5**).

Table 5: Colonia Population in the RGV

| Counties | Colonias Population | Number of colonias |
|----------|---------------------|--------------------|
| Hidalgo | 156,132 | 934 |
| Starr | 34,742 | 226 |
| El Paso | 77,864 | 324 |
| Cameron | 47,606 | 178 |

| Totals: | 384,761 | 1,836 |
|-----------|---------|-------|
| Kinney | 66 | 1 |
| Val Verde | 7,603 | 15 |
| Maverick | 22,459 | 69 |
| Zapata | 13,807 | 41 |
| Webb | 21,022 | 62 |
| Willacy | 3,460 | 16 |

^{*}Source: Secretary of State 2009

Image Source: https://hhs.texas.gov/about-hhs/process-improvement/office-border-affairs/colonias-projects/maps-colonias

The proposed project will have only positive impacts to minority populations and disadvantaged communities by helping deliver clean, safe water to them.

SWSC CCN

SHARYLAND

Middign County, Texas

Legend

CCN Application

With TX PUC

Sharyland WIP CCN

Hidalogo STARR

CCN NO. 10588

Exhibit 2

Exhibit 4: SWSC CCN MAP WITH COLONIAS INSIDE SERVICE AREA

Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance). Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project.

Yes, the project will benefit endangered species. The project will help conserve water in the Rio Grande River, thus benefiting the threatened species by helping preserve their home. According to the U.S. Fish and Wildlife Service, the lower Rio Grande Valley contains 1,2000 plants, 300 butterflies, and 700 vertebrates. Several state threatened species make their home in the Rio Grande basin and floodplain such as the common black hawk, gray hawk, Mexican fawnsfoot mussel, salina mucket, and texas hornshell. Another endangered species that relies on the basin is the ocelot. According to U.S. Fish and Wildlife Service, there are less than 50 ocelots left in the U.S. Please see attached U.S. Fish and Wildlife list of federally threatened and endangered species in the Lower Rio Grande Valley in Appendix A.

The project will also help benefit endangered species through SWSC's water supplier, United Irrigation District, which has a water outlet that delivers water to the Pate Bend Unit at the Lower Rio Grande Valley National Wildlife Refuge.

According to the Lower Rio Grande Wildlife Refuge's website, "Since the 1930s, 95 percent of the native habitat found within the Valley has been cleared for agricultural or urban development. This development has relegated native plants and animals to remnant tracts, possibly compromising the genetic integrity of many species. Hoping to connect and protect these isolated tracts of habitat, the Lower Rio Grande Valley National Wildlife Refuge was established in 1979 with a management priority to protect biodiversity. As a wildlife corridor, the refuge follows the Rio Grande along the last 275 river miles, connecting isolated tracts of land managed by private landowners, non-profit organizations, the State of Texas, and two other National Wildlife Refuges, Laguna Atascosa and Santa Ana". Please find more information on the Refuge and the species they shelter in **Appendix A**.



Lower Rio Grande Valley National Wildlife Refuge Image source: https://friendsofthewildlifecorridor.org



Picture of an endangered animal in the region, an ocelot. Image source: https://www.fws.gov/refuge/Lower_Rio_Grande_Valley/ocelots.html

Will the project address water supply reliability in other ways not described above?

Water conserved through the project will help address water supply sustainability by conserving energy. Energy is another valuable resource that must be conserved now and for future generations.

Evaluation Criterion C: Implementing Hydropower

This section does not apply to SWSC's grant application.

Evaluation Criterion D: Complementing On- Farm Irrigation Improvements

This section does not apply to SWSC's grant application.

Evaluation Criterion E: Department of the Interior Priorities

Please address those priorities that are applicable to your project. It is not necessary to address priorities that are not applicable to your project. A project will not necessarily receive more points simply because multiple priorities are addressed. Points will be allocated based on the degree to which the project supports one or more of the priorities listed, and whether the connection to the priority(ies) is well supported in the proposal.

Creating a conservation stewardship legacy second only to Teddy Roosevelt

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

The project utilizes science by choosing the best equipment for the plant such as SCADA, FilterMagic, energy efficient motors, and VFDs that will save the most water and energy resources.

b. Examine land use planning processes and land use designations that govern public use and access;

N/A

c. Revise and streamline the environmental and regulatory review process while maintaining environmental standards.

The project maintains environmental standards because the project has already been cleared environmentally in accordance with NEPA and USDA regulations. The project will only have positive impacts to the environment and disadvantaged communities.

d. Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity;

By conserving more of the water in the Rio Grande River now, hopefully there will be less conflicts in the future over the water supply.

e. Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands;

United Irrigation District which delivers water to Plant #1 also supplies water to the Lower Rio Grande Valley Wildlife Refuge. Conserving water helps to ensure future needs are met.

f. Identify and implement initiatives to expand access to DOI lands for hunting and fishing;

N/A

g. Shift the balance towards providing greater public access to public lands over restrictions to access.

N/A

Utilizing our natural resources

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

The project will help conserve energy which is another valuable resource. 1,892,915 kilowatts of energy (\$86,200.00) will be saved a year by the project.

b. Ensure access to mineral resources, especially the critical and rare earth minerals needed for scientific, technological, or military applications;

N/A

c. Refocus timber programs to embrace the entire 'healthy forests' lifecycle;

N/A

d. Manage competition for grazing resources.

N/A

- 3. Restoring trust with local communities
- a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands;

By ensuring SWSC's water treatment plant #1 conserves as much water and energy as possible, Sharyland will build more trust with the community by showing they care about preserving their resources.

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

This project will help expand the lines of communication because United Irrigation District delivers water to the Lower Rio Grande Wildlife Refuge.

- 4. Striking a regulatory balance
- a. Reduce the administrative and regulatory burden imposed on U.S. industry and the public;

N/A

b. Ensure that Endangered Species Act decisions are based on strong science and thorough analysis.

N/A

- 5. Modernizing our infrastructure
- a. Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure;

This project supports the White House Public/ Private Partnership Initiative to modernize U.S. infrastructure by modernizing the water treatment plant.

b. Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs;

N/A

- c. Prioritize DOI infrastructure needs to highlight:
 - -. Construction of infrastructure;
 - -. Cyclical maintenance;
 - -. Deferred maintenance.

-.

N/A

Evaluation Criterion F: Implementation and Results Subcriterion No. F.1: Project Planning

Does the project have a Water Conservation Plan and/or System Optimization Review (SOR) in place. Please self-certify, or provide copies of these plans where appropriate to verify that such a plan is in place.

Provide the following information regarding project planning:

Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, or other planning efforts done to determine the priority of this project in relation to other potential projects.

Yes, SWSC has a Water Conservation Plan in place. Please find it attached in **Appendix A.** SWSC has an active board and is constantly planning and preparing for the future. Planning of the rehabilitation to WTP #1 started in the year 2012.

Describe how the project conforms to and meets the goals of any applicable planning efforts, and identify any aspect of the project that implements a feature of an existing water plan.

The project conforms to and meets the goals of applicable planning efforts made by SWSC by always looking towards the future and preparing for it.

The project meets the Water Conservation Plan goals by reducing water losses and increasing delivery rate of water from high service pumps.

Sharyland Water Supply Corporation's Water Conservation Plan states, "Another goal of their plan is to increase the percentage delivery rate of water (from the high service pumps at the plants to the metered connections) during the first five (5) years from 90 percent to 94 percent within ten (10) years.

Subcriterion No. F2 Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved). For more information calculating performance measure, see *Appendix A: Benefit Quantification and Performance Measure Guidance*.

Note: All Water and Energy Efficiency Grant applicants are required to propose a "performance measure" (a method of quantifying the actual benefits of their project once it is completed). A provision will be included in all assistance agreements with Water and Energy Efficiency Grant recipients describing the performance measure, and requiring the recipient to quantify the actual project benefits in their final report to Reclamation upon completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of Water and Energy Efficiency Grants.

The performance measure that will be used to quantify actual water savings upon completion of the project will be flow metering devices.

The performance measure that will be used to quantify actual energy savings upon completion of the project will be the monthly electric bill.

SWSC will prepare a final report on water and energy savings benefits as discussed in this application for submittal to the Bureau of Reclamation upon completion of the project.

How SCADA or SCADA/GIS implementation will differ from pre-project operations in terms of how improved data availability will be incorporated into daily operational decisions

SCADA implementations will differ from pre project operations in that there is currently no SCADA. The proposed SCADA system improvements will control specifically the water plant filters. This will provide new data that the plant does not currently have, and will be incorporated into daily operation decisions directly by influencing filter backwash time, frequency, and durations.

How SCADA or SCADA/GIS systems will be maintained once implemented. Discuss balance of in-house expertise vs. reliance on third party service providers.

Once implemented, the SCADA system expansion will include a comprehensive 3 year warranty of the entire filter control system. Afterwards, if maintenance is required, it will be serviced by the same third party that currently provides service to the SCADA system at the plant. The proposed improvements will be connected to the existing system.

The projected opportunities for improved operational efficiencies that could be realized through implementation of a SCADA or SCADA/GIS system (e.g. improved delivery equity, improved response to unanticipated events, reduced administrative spillage, and enhanced productivity of human resources)

Projected opportunities for improved operational efficiencies will include optimal backwashing duration and frequency, minimizing significantly water used to backwash, as well as electricity usage from pumps.

The response process to SCADA or SCADA/GIS failures/outages

Response process to SCADA improvements will be the same as the existing process for the existing SCADA system, which is having a local third party provide emergency assistance. The first three years may be an exception, since the improvements will be under a comprehensive warranty.

Evaluation Criterion G- Nexus to Reclamation Project Activities

Is the proposed project connected to Reclamation project activities? If so, how? Please consider the following:

Does the applicant receive Reclamation project water?

No, the applicant does not receive Reclamation project water.

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

No, the project is not on Reclamation project lands or involving Reclamation facilities.

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

Yes, Reclamation conducted a study in the Rio Grande Valley called, "The Lower Rio Grande Basin Study" in 2013. The basin study evaluated the impacts of climate change on water supply and demand imbalances in the region. Part of the study's planning objectives included reducing dependency on the Rio Grande, which this project also seeks to accomplish. The study cost was \$412,798.00. Please find a one page summary of the Lower Rio Grande Basin Study attached in **Appendix A**.

The Bureau of Reclamation has also funded several projects for irrigation districts in the Rio Grande Valley.

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

Yes, the Bureau of Reclamation has funded several projects in the basin. The proposed work will preserve water in the Rio Grande River.

Will the project benefit any tribe(s)?

No, the project will not benefit tribes.

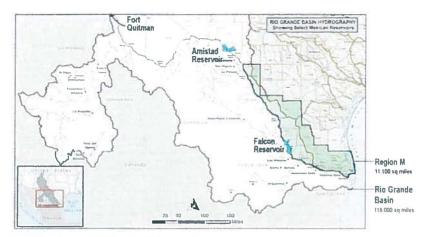


Figure 1: Lower Rio Grande Basin, Texas.

Image Source: 2013 Lower Rio Grande Basin Study

Evaluation Criterion H: Additional Non-Federal Funding (4 points)

Up to 4 points may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided using the following calculation:

\$2,591,000.00 Non Federal Funding = 89% \$2,891,392.00 Total Project Cost

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.

Sharyland Water Supply Corporation is planning to self-fund this watersmart project.

This project is part of a larger project of \$14,637,336.00 that SWSC will be seeking a USDA loan for.

Project funding provided by a source other than the applicant shall be supported with letters of commitment from these additional sources. Letters of commitment shall identify the following elements:

The amount of funding commitment

N/A

The date the funds will be available to the applicant

N/A

Any time constraints on the availability of funds

N/A

Any other contingencies associated with the funding commitment

N/A

Commitment letters from third party funding sources should be submitted with your application. If commitment letters are not available at the time of the application submission, please provide a timeline for submission of all commitment letters. Cost-share funding from sources outside the applicant's organization (e.g., loans or State grants), should be secured and available to the applicant prior to award.

N/A

Reclamation will not make funds available for an award under this FOA until the recipient has secured non-Federal cost-share. Reclamation will execute a financial assistance agreement once non-Federal funding has been secured or Reclamation determines that there is sufficient evidence and likelihood that non-Federal funds will be available to the applicant subsequent to executing the agreement.

The funding plan must include all Project costs, as follows:

How you will make your contribution to the cost-share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

SWSC has funds set aside for this project. Please find a copy of Sharyland's reserve fund from their audit in **Attachement A**.

Describe any donations or in-kind costs incurred before the anticipated Project start date that you seek to include as project costs. For each cost, identify:

The project expenditure and amount

The date of cost incurrence

How the expenditure benefits the Project

Provide the identity and amount of funding to be provided by funding partners.

Describe any funding requested or received from other Federal partners.

N/A

Note: other sources of Federal funding may not be counted towards the required cost share unless otherwise allowed by statute.

Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.

N/A

Please include the following chart (Table 1) to summarize all funding sources. Denote in-kind contributions with an asterisk (*).

| FUNDING SOURCES | AMOUNT |
|-------------------------------|----------------|
| Non Federal Entities | |
| Sharyland Water Supply | \$2,591,392.00 |
| Non-Federal Subtotal | \$2,591,392.00 |
| Other Federal Entities | |
| 1. N /A | N/A |
| Other Federal Subtotal | \$0 |
| REQUESTED RECLAMATION FUNDING | \$300,000.00 |

Budget proposal

The budget proposal should include detailed information on the categories listed below and must clearly identify all Project costs, including those that will be contributed as non-Federal cost share. Unit costs must be provided for all budget items including the cost of work to be provided by contractors. The budget proposal should also include any in-kind contributions or donations of goods and services that will be provided to complete the project. It is strongly advised that applicants use the budget proposal format shown below on Table 2 or a similar format that provides this information. If selected for award, successful applicants must submit detailed supporting documentation for all budgeted costs.

| DUDGET ITEM DESCRIPTION | COMPUT | TATION | Quantity | TOTAL |
|---------------------------|----------------|---------------------|----------|-------------|
| BUDGET ITEM DESCRIPTION | \$/Unit | Quantity | Туре | |
| Salaries and Wages | N/A | N/A | N/A | \$0 |
| Employee I | N/A | N/A | N/A | \$0 |
| Employee 2 | N/A | N/A | N/A | \$0 |
| Employee 3 | N/A | N/A | N/A | \$0 |
| Fringe Benefits | N/A | N/A | N/A | S0 |
| Full-time Employees | N/A | N/A | N/A | \$0 |
| Part-time Employees | N/A | N/A | N/A | \$0 |
| Travel | N/A | N/A | N/A | \$0 |
| Trip 1 | N/A | N/A | N/A | \$0 |
| Trip 2 | N/A | N/A | N/A | \$0 |
| Equipment | | | | |
| Equipment | N/A | N/A | N/A | \$484,000. |
| MISC | N/A | N/A | N/A | \$149,825. |
| Supplies & Materials | | | | |
| Item A | N/A | N/A | N/A | \$0 |
| Contractual/ Construction | | | | |
| Construction | N/A | N/A | N/A | \$1,600,000 |
| Demo & Removal | N/A | N/A | N/A | \$34,575.0 |
| Other | | | | |
| Contingency | N/A | N/A | N/A | \$276,600.0 |
| TOTAL DIRECT COSTS | | | | \$2,545,000 |
| Indirect Costs | | | | |
| Engineering fees | Percentage 11% | \$2,581,600 base | | \$283,976. |
| Project inspection fees | Percentage 1% | \$2,581,600 base | | \$25,816.0 |
| TOTAL EST | IMATED PROJECT | COST | | \$2,891,392 |

Budget narrative

Submission of a budget narrative is mandatory. An award will not be made to any applicant who fails to fully disclose this information. The budget narrative provides a discussion of, or explanation for, items included in the budget proposal. If in-kind contributions or donations of goods and services are included in the budget proposal, the narrative should identify the source(s) and describe how the value of the goods and services was determined The types of information to describe in the narrative include, but are not limited to, those listed in the following subsections. Costs, including the valuation of in-kind contributions and donations, must comply with the applicable cost principles contained in 2 CFR Part §200, available at the Electronic Code of Federal Regulations (www.ecfr.gov).

Salaries and Wages

No salaries are included. All services will be contracted.

Fringe Benefits

N/A

Travel

N/A

Equipment

Equipment will be part of the contractual portion of the project.

Materials and Supplies

N/A

Contractual

This is a portion of an overall construction project that will be bid out.

In order to determine unit cost which were included in the overall cost estimate for this project, past water plant job bids that SWG Engineering, L.L.C. had developed were utilized for these budgetary costs estimates. It is anticipated that SWSC will accept the lowest most responsible bidder for the project. The overall cost estimates are for a contractor to install them in place.

Environmental and Regulatory Compliance Costs

N/A. The project already has environmental clearance with USDA and NEPA.

Other Expenses

Other expenses include contingencies. Based on experience, a percentage of the construction cost is contingencies.

Indirect Costs

Indirect costs include engineering fees and project inspection fees based upon the level of work required and is reflected within the Budget Proposal.

Total Costs

Total project cost is \$2,891,392.00. SWSC Portion: \$2,591,392.00. Federal Portion: \$300,000.00

Environmental and Cultural Resources

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 rehabilitation and improvements to Sharyland's Water Treatment Plant has already been environmentally cleared and approved.

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?

There are no threatened or endangered species in the project area.

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

There is one waterbody within the project area which is Sharyland's manmade north reservoir. There are no wetlands or other waterbodies located within the project area.

When was the water delivery system constructed?

Sharyland's water treatment plant #1 was built in 1972.

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, the project will not modify or effect an irrigation system.

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, there are not any Historic Places within the project area.

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

No, there are not any archeological sites within the project area.

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

No, the project will not have any high or adverse effects on low income or minority populations. The project will benefit everyone relying on SWSC for water, which includes low income and minority people living in colonias.

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

The project will not affect any sacred Indian land because there is none in the project area.

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, the project will not contribute to noxious weeds or non-native invasive species.

Required permits or approvals

Any permits or approvals that are required for the project

Permits that will be acquired from the City of Alton for the project.

Approval will be acquired from TCEQ for the project.

Letters of Support

Please include letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support/partnership letters as an appendix.

Letters of support are from:

City of Alton

City of Palmhurst

Texas Senator Juan Hinojosa

United Irrigation District

Texas Representative R.D. Bobby Guerra

Texas Representative Terry Canales

Lower Rio Grande Valley Development Council

Letters of support are attached in Appendix B.

Official Resolution

Please find official resolution attached in Appendix B.

Unique Entity Identifier and System for Award Management

SWSC is registered in SAM.GOV. Please find SWSC's SAM.GOV information in Appendix A.

References

Drought.gov

Friendsofthewildlifecorridor.org

Fws.gov

Hhs.texas.gov

Texasstatewaterplan.org

2013 Lower Rio Grande Basin Study

2016 TWDB Region M Water Plan

2016 Rio Grande Regional Water Plan

APPENDIX A

Federally-Listed Threatened and Endangered Species within the Lower Rio Grande Valley (Current as of December 2010)

Cameron County

Green sea turtle (T)
Gulf Coast jaguarundi (E)
Hawksbill sea turtle (E)
Kemp's Ridley sea turtle (E)
Leatherback sea turtle (E)
Loggerhead sea turtle (T)
Northern aplomado falcon (E)
Ocelot (E)
Piping plover (T w/CH)
South Texas ambrosia (E)

Texas ayenia (E) West Indian manatee (E)

Hidalgo County

Gulf Coast jaguarundi (E)
Northern aplomado falcon (E)
Ocelot (E)
Star cactus (E)
Texas ayenia (E)
Walker's manioc (E)

Starr County

Ashy dogweed (E)
Gulf Coast jaguarundi (E)
Johnston's frankenia (E)
Least tern (E)
Ocelot (E)
Star cactus (E)
Walker's manioc (E)
Zapata bladderpod (E w/CH)

Willacy County

Gulf Coast jaguarundi (E)
Ocelot (E)
Northern aplomado falcon (E)
Hawksbill sea turtle (E)
Kemp's Ridley sea turtle (E)
Leatherback sea turtle (E)
Texas Ayenia (E)
Green sea turtle (T)
Loggerhead sea turtle (T)

Piping plover (T w/CH)

Chelonia mydas
Herpailurus yagouaroundi cacomitli
Eretmochelys imbricata
Lepidochelys kempii
Dermochelys coriacea
Caretta caretta
Falco femoralis septentrionalis
Leopardus pardalis
Charadrius melodus
Ambrosia cheiranthifolia
Ayenia limitaris
Trichechus manatus

Herpailurus yagouaroundi cacomitli Falco femoralis septentrionalis Leopardus pardalis Astrophytum asterias Ayenia limitaris Manihot walkerae

Thymophylla (=Dyssodia) tephroleuca Herpailurus yagouaroundi cacomitli Frankenia johnstonii Sternula antillarum Leopardus pardalis Astrophytum (=Echinocactus) asterias Manihot walkerae Lesquerella thamnophila

Herpailurus yagouaroundi cacomitli
Leopardus pardalis
Falco femoralis septentrionalis
Eretmochelys imbricata
Lepidochelys kempii
Dermochelys coriacea
Ayenia limitaris
Chelonia mydas
Caretta caretta
Charadrius melodus

INDEX

| E | = | Species in danger of extinction throughout all or a significant portion of its range. |
|----|---|---|
| T | = | Species which is likely to become endangered within the foreseeable future |
| | | throughout all or a significant portion of its range. |
| C | = | Species for which the Service has on file enough substantial information to warrant |
| | | listing as threatened or endangered. |
| CH | = | Critical Habitat (in Texas unless annotated ‡) |
| ~ | = | Protection restricted to populations found in the "interior" of the United States. In |
| | | Texas, the least tern receives full protection, except within 50 miles (80 km) of the |
| | | Gulf Coast. |

County-by-County lists containing species information is available at the U.S. Fish and Wildlife Service's (Service), Southwest Region, web site http://www.fws.gov/southwest/es/EndangeredSpecies/lists.

NOTE 2: DEPOSITS AND REQUIRED RESERVES (Continued)

A summary of the reserve and designated cash is as follows:

| | | 2016 |
|--|---------------|---------------|
| | 2017 | (As Restated) |
| Reserved: | | |
| Required reserve fund for retirement of | | |
| USDA, rural development debt | \$ 602,131 | . \$ 529,807 |
| Designated: | | |
| For future expansion | 9,857,100 | 11,400,000 |
| Undesignated: | | |
| For operations | 9,784,046 | 7,694,283 |
| Total | \$ 20,243,277 | \$ 19,624,090 |
| The total is funded as follows: Cash and cash equivalents: Cash on hand/bank | \$ 3,266,116 | \$ 2,509,466 |
| Total cash and cash equivalents | \$ 3,266,116 | |
| Investments: | | |
| Municipal bond | \$ - | \$ 25,465 |
| Mutual funds | 2,964,486 | |
| Certificates of deposit | 14,012,675 | 17 000 150 |
| | 21,022,010 | 17,089,159 |
| Total investments | 16,977,161 | |

The Corporation maintains operating cash deposits with one financial institution, Frost Bank. The Corporation's operating deposits were held in several non-interest bearing accounts that are collateralized by Federal Deposit Insurance Corporation (FDIC) up to \$250,000.

In 2013, the Corporation entered into a Repurchase Agreement ("Repo Sweep") contract with their depository bank to "sweep" funds in excess of the \$250,000 FDIC limit overnight from their operating account. The funds are transferred to an account in the Bank's name to purchase certain securities while the Corporation maintains ownership of the funds transferred. In these purchase and assumption transactions, the sweep account and associated assets will be transferred back to the Corporation's bank account the following business day. Should the bank enter into receivership the swept funds will not be considered deposits and therefore not covered by FDIC insurance protection. In this situation, the swept funds are considered invested in a security in which the Corporation will be the legal owner of the funds.

Sigler, Winston, Greenwood & Associates, LLC. Consulting Engineers

PRELIMINARY

ENGINEER'S COST ESTIMATE

for Revised

Preliminary Engineering Report

Sharyland Water Supply Corporation

Description: Phase II System Improvements to Water Treatment Plant No. 1
Date: 2/26/2018

| Date: | 2/20/2018 | | | |
|------------|--|---------------|----------------|-----------------|
| item | Description | Quantity Unit | Unit Price | Item Total |
| 1 | Water Treatment Plant Building Resurfacing & Architecture | 1 LS | \$325,000.00 | \$325,000.00 |
| 2 | Landscaping | 1 LS | \$125,000.00 | \$125,000.00 |
| 3 | Sludge Management Improvements | 3 EA | \$120,000.00 | \$360,000.00 |
| 4 | Emergency Chlorine Scrubber | 1 LS | \$325,000.00 | \$325,000.00 |
| 5 | Chemical Building Improvements | 1 LS | \$560,000.00 | \$560,000.00 |
| 6 | Wash water Recovery Tank | 1 EA | \$578,000.00 | \$578,000.00 |
| 7 | Road Improvements | 1 LS | \$550,000.00 | \$550,000.00 |
| 8 | Pumping Facility | 1 LS | \$300,000.00 | \$300,000.00 |
| 9 | Drainage Improvements | 1 LS | \$75,000.00 | \$75,000.00 |
| 10 | Filter Backwash Lines, Valves, Misc. Improvements | 1 LS | \$500,000.00 | \$500,000.00 |
| 11 | Fencing | 1 LS | \$50,000.00 | \$50,000.00 |
| 12 | Electric Gate for Security at WTP No. 1 | 1 LS | \$20,000.00 | \$20,000.00 |
| 13 | Master SCADA Upgrades | 1 LS | \$750,000.00 | \$750,000.00 |
| 14 | SCADA Upgrades | 1 LS | \$1,500,000.00 | \$1,500,000.00 |
| 15 | Filter Media Replacement - 12' x 15' | 2 EA | \$27,000.00 | \$54,000.00 |
| 16 | Filter Media Replacement - 13' -6" x 13' x 6" | 4 EA | \$27,000.00 | \$108,000.00 |
| 17 | Filter Airgrid Systems and Piping | 6 EA | \$90,000.00 | \$540,000.00 |
| 18 | Filter Backwash Blowers | 2 EA | \$100,000.00 | \$200,000.00 |
| 19 | Filter Backwash Control Panel | 1 EA | \$35,000.00 | \$35,000.00 |
| 20 | Replacement of Existing TracVacs with Pipe-less Sludge Mechanisms | | \$80,000.00 | \$480,000.00 |
| 21 | Tube Settlers | 6 EA | \$100,000.00 | \$600,000.00 |
| 22 | Replacement of Single Rapid Mix with Two Rapid Mix Units | 2 EA | \$50,000.00 | \$100,000.00 |
| 23 | Rapid Mix Control Panels | 1 EA | \$30,000.00 | \$30,000.00 |
| 24 | Rapid Mix Structure | 1 LS | \$50,000.00 | \$50,000.00 |
| 25 | Remote Pressure Sensors with SCADA | 1 15 | \$100,000.00 | \$100,000.00 |
| 26 | Replacement of High Service Pumps | 2 EA | \$70,000.00 | \$140,000.00 |
| 27 | High Service Pumps VFDs Controls | 2 EA | \$25,000.00 | \$50,000.00 |
| 28 | Replacement of Backwash Pump | 1 EA | \$30,000.00 | \$30,000.00 |
| 29 | Additional Backwash Pump | 1 EA | \$30,000.00 | \$30,000.00 |
| 30 | Backwash Pumps VFDs | 2 EA | \$37,500.00 | \$75,000.00 |
| 31 | MCC Building | 1 LS | \$50,000.00 | \$50,000.00 |
| 32 | Electrical Upgrades and Ductbanks to MCC | 115 | \$250,000.00 | \$250,000.00 |
| 33 | Office & Lab Building with Control Center | 115 | \$750,000.00 | \$750,000.00 |
| 33 | Other of 100 parious artin court of Centres | | 7730,000.00 | \$730,000.00 |
| | Total | | | \$9,690,000.00 |
| | Contingencies at 12% | | | \$1,162,800.00 |
| | continuentes at 14/4 | | | 31,102,000,00 |
| | Estimated Construction Cost | | | \$10,852,800.00 |
| | Estimated Collstraction Cost | | | \$10,032,000.00 |
| | | | | |
| MATE M- | . 1 System Improvements Non-Construction Cost Summary | | | |
| AA I L 140 | . T parent unbroasticing ison-construction cost anyimala | | | |
| - | Engineering Study & Deport Phase - Modifications | | | \$20,000.00 |
| l. | Engineering Study & Report Phase - Modifications | | | . 6 8 |
| | Engineering for Basic Services Water Model Updates & Recommendations for Plant Settings | 1 LS | 67E 000 00 | \$1,302,336.00 |
| | The state of the s | 2021 0 3 | \$75,000.00 | \$75,000.00 |
| | Construction Inspection - Civil & Electrical RPR | 18 Mo. | 10,400.00 | \$187,200.00 |
| | Water Rights Contract | | | \$2,000,000.00 |
| | Permits | | | \$50,000.00 |
| 7 | Geotech | | | \$150,000.00 |
| | | | | 4 |
| | Estimated Non-Construction Cost | | | \$3,784,536.00 |
| | Table to the fact of the fact | | | A |
| | Total Estimated Project Cost: | | | \$14,637,336.00 |

| Username | Password | |
|------------------|------------------|-------------------|
| | | Log In |
| Forgot Username? | Forgot Password? | Create an Account |

4210 E Main Ave

UNITED STATES

Alton, TX, 78573

FAPIIS.gov GSA gov/IAE GSA.gov

USA.gov

Accessibility

Help

ALERT: You must submit a <u>notarized letter</u> appointing the authorized Entity Administrator before your registration will be activated. This requirement now applies to both new and existing entities. Read our FAQs to learn more about this process charge.



Entity Registration

- Core Data
 - POCs .

Exclusions

- Active Exclusions
- Inactive Exclusions
- Excluded Family
 Members

RETURN TO SEARCH

Sharyland Water Supply Corporation

DUNS 055122717 CAGE Code: 650U4

Status Active

Expiration Date: 02/14/2019

Purpose of Registration: Federal Assistance Awards Only

Entity Overview

Entity Registration Summary

Name: Sharyland Water Supply Corporation Business Type: Business or Organization Last Updated By: Jesse Valadez Registration Status: Active Activation Date: 02/14/2018 Expiration Date: 02/14/2019

Exclusion Summary

Active Exclusion Records? No



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WWW.

This is all all General Services Administration Federal Government computer system that in 14CP OFFICIAL USE ON 12 This system is subject to monitoring. Individuals found performing unauthorized act vibes are subject to disciplinary active including crimmar prosecution.





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U.S. Fish & Wildlife Service

Lower Rio Grande Valley (/refuge/Lower_Rio_Grande_Valley/)

National Wildlife Refuge | Texas

Wildlife and Habitat

WILDLIFE AND HABITAT (/REFUGE/LOWER_RIO_GRANDE_VALLEY/WILDLIFE_HABITAT.HTML)

Species Lists (/refuge/Lower_Rio_Grande_Valley/wildlife_and_habitat/species_list.html) Wildlife Watching Tips (/refuge/Lower_Rio_Grande_Valley/wildlife_and_habitat/wildlife_watching_tips.html)

Wildlife and Habitat



Known as the lower Rio Grande Valley, the lower four counties of Texas contain a documented 1,200 plants, 300 butterflies, and approximately 700 vertebrates, of

which at least 520 are birds. It is to protect this important biodiversity that the Lower Rio Grande Valley National Wildlife Refuge was established.

Thousands of years of geographic change and evolutionary adaptation have resulted in the creation of numerous and distinct plant and animal communities in the four most southern counties of Texas. Many of these are found in and protected by the Lower Rio Grande Valley National Wildlife Refuge.

The Ramaderos biotic community sits at the western edge of the refuge. This arid landscape is cut by deep arroyos and

small tributaries that extend for miles from the Rio Grande. Wildlife travels unimpeded down the humid corridors of lush riparian vegetation, particularly during times of drought and extreme heat. The biota of these natural drainages is a result of higher moisture and deeper soils. A tree typically foraged upon by white-tailed deer and cattle, the seemingly unobtrusive guayacan, has a root system that plant ecologists speculate may endure for about 1,000 years.

At the eastern edge of the refuge, impaled insects and small rodents adom the blades of large, 100-year-old yuccas called Spanish daggers, compliments of a migratory bird, the loggerhead shrike. The irony of this macabre scene is not lost on the people who visit Palmito Ranch, site of the last land battle of the Civil War and a refuge tract that falls within the Clay Loma/Wind Tidal Flats. This biotic community is interspersed with saline flats, marshes, shallow bays, and unique dunes of wind-blown clay known as lomas. Following the last few miles of the Rio Grande, this refuge tract links coastal and river corridors and is staging ground for the endangered peregrine falcon. It is also habitat for 17 other federally listed threatened and endangered species, including the Kemp's ridley sea turtle.

A species of great concern to the U.S. Fish and Wildlife Service is the ocelot, an endangered cat whose numbers have dwindled to fewer than 50 in the United States. The Mid-Delta Thorn Forest, a biotic community that once covered much of the delta, is a hunting ground for this noctumal species. Texas ebony, Granjeno and colima are but a few of the trees and shrubs that house an array of small mammals and birds, prey for the ocelot. Typified in remnant strips along fence rows, canals and ditch banks, the diminished thorn forest habitat forces the solitary ocelot to cross open fields and risk the dangers of vehicular traffic and predators.

Before dams and water control structures significantly reduced the flow of the Rio Grande, periodic floods cut shifting channels into the delta creating crescent-shaped oxbows, referred to in the Valley as "resacas." Resacas, complemented by dense bottomland hardwood forest, are characteristic of the Mid-Valley Riparian Woodlands biotic community. This habitat is particularly favored by birds such as chachalacas and green jays, as well as another endangered and elusive cat, the jaguarundi. Draping Spanish moss and another epiphytic bromeliad, the rare Bailey's ball moss, cling to cedar elm and Texas ebony. Found throughout the delta, brush-bordered resacas typical of this community attract many of the neotropical migrants and waterfowl that funnel through the Valley on their way to and from Central and South America.

On the edge of the riparian woodlands is a unique and severely diminished biotic community of sabal palms. Originally spanning more than 40,000 acres, the remaining palms are restricted to about 50 acres. They comprise one of the few strongholds for one of the rarest snakes in the U.S., the speckled racer. The southern yellow bat, a rare, year-round resident, roosts within the fronds of the remaining sabal palms that grow along the southernmost bend of the Rio Grande. The more than 900 species of beetles found within the small grove represents only a fraction of the insect community that aids plant pollination and other essential ecological functions.

The Woodland Potholes and Basins ecosystem contains numerous freshwater playa lakes and three hyper-saline lakes. Deep ruts, remnant tracks of oxcarts used by Spanish colonists to haul mined salt, can still be seen at the 530 acre salt lake, La Sal del Rey or "the King's salt." Black-necked stilts, black skimmers, and least and guil-billed terns can be found nesting along the shorelines of the salt lakes. The salty waters support brine shrimp and a few species of salt-tolerant water insects. Set in a low woodlands of honey mesquite, prickly pear, and lote bush, the freshwater potholes and playa lakes serve as favorite roosting and feeding areas for migrating geese, waterfowl, shorebirds, and sandhill cranes. Vegetated corridors will eventually connect this tract to the river.

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RECLAMATION Managing Water in the West

Lower Rio Grande Basin Study

Contacts:

Oklahoma-Texas Area Office:

Jeff Gerber, Study Manager, 512-899-4157, jgerber@usbr.gov

Collins Balcombe, Program Manager, 512-899-4162, cbalcombe@usbr.gov

Great Plains Regional Office:

Kip Gjerde, P.E. 406-247-7750Jgjerde@usbr.gov

Reclamation and the Rio Grande Regional Water Authority (RGRWA) and its 53 member entities, in collaboration with the Texas Region M Planning Group, Texas Water Development Board, Texas Commission on Environmental Quality (TCEQ), and International Boundary and Water Commission, are conducting a basin study to evaluate the impacts of climate change on water supply and demand imbalances within an eight county

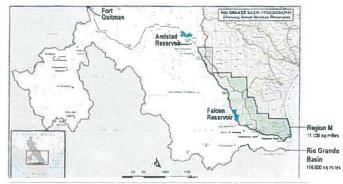


Figure 1: Lower Rio Grande Basin (adapted from IBWC)

region along the U.S./Mexico border in south Texas (Cameron, Willacy, Hidalgo, Starr, Zapata, Jim Hogg, Webb and Maverick Counties; Figure 1).

The study area currently experiences severe and frequent water supply and demand imbalances that may be exacerbated by a changing climate and population growth. The population in the study area is expected to grow from 1.7 million in 2010 to 4 million in 2060. The water supply and demand imbalance is expected to reach 592.084 acre feet per year by 2060, which would result in 35 percent of water demands being unmet.

The water management issues facing the Lower Rio Grande River basin are extremely complex due to climate change, population growth, and treaty requirements. Because the study area is shared by both the U.S. and Mexico, numerous issues are presented both politically and technically. Flows within the Lower Rio Grande River are dependent upon reservoir operations and run-off emanating from both the U.S. and Mexico, which is complicated by issues relating to required reservoir releases pursuant to stipulations set forth in the 1944 U.S.-Mexico Water Treaty.

To address the issues facing the Lower Rio Grande Basin this study will:

- Perform hydrologic projections of water supply and demand in the changing climate.
- · Evaluate how existing water and power infrastructure will perform in the future.
- Formulate a range of alternative regional water management strategies to meet water needs through 2060.
- Evaluate and screen alternatives based on several factors, including cost/benefits; public acceptance; and
 various political, institutional, regulatory, and environmental constraints.
- Recommend a preferred alternative plan to meet planning objectives.

The total study cost is estimated to be \$412,798 (52 percent RGWRA; 48 percent Federal cost share) and will take 24 months to complete.



SHARYLAND WATER SUPPLY CORPORATION WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN 14 AUGUST 2014

WATER CONSERVATION PLAN

System Profile

Sharyland Water Supply Corporation ("Corporation") is a legally chartered, non-profit, rural water supply corporation, operating under the laws of the State of Texas for the purpose of providing a potable water supply to rural residents in central Hidalgo County as described in Certificate of Convenience and Necessity Number 10558. The certificate boundary encompasses approximately 100 square miles and is contiguous to the cities of McAllen, Mission, and Edinburg. The Corporation serves the entire City of Alton, Texas, most of the City of Palmhurst, and the small community of McCook, Texas.

The system presently serves 16,636 meter connections. The Board of Directors consists of 7 members of the Corporation, and are elected by the membership of the Corporation. The General Manager and her staff are employed by the Board of Directors to administer the operating policies and rules of the Corporation.

The Corporation's water treatment and distribution systems include the following:

- 1. Two water treatment plants with a total capacity of 14 million gallons per day. Plant #1 can produce 6 million gallons per day and Plant #2 can currently produce 8 million gallons per day. Both plants are supplied by separate irrigation canal systems which, in the event of a canal failure, give the Corporation the ability to supply its distribution system from either treatment plant. Both treatment plants have emergency backup generators systems that are capable of supplying power to operate the entire plant.
- 2. The Corporation also has 4 each, one million gallon ground storage tanks; one each, one million gallon elevated storage tank; two each, 250,000 gallon elevated storage tanks; and one each, 50,000 gallon elevated storage tank (McCook) which supplement the system in periods of high demand.
- 3. In the event of a supply source contamination the affected plant can be shut down and the remaining plant can serve the system until the problem is corrected.
- 4. System outage due to failure of a major pump will not affect the system because backup pumps are kept on hand for immediate replacement. Spare impellers are on hand for all major pumps. Any failed pump can be repaired within 4 to 6 hours.
- 5. Interconnection with another water system is unnecessary at their time due to the redundancy of our system, but could be accomplished in an emergency by connecting to the City of McAllen's distribution system in several different locations, or the City of Edinburg at an existing meter location.

Water Conservation Targets and Goals

The 5-year target for the Water Conservation Plan is to achieve at least a five (5) percent or 6.7 gpcd reduction in five (5) years in the per capita per day usage in water consumption. The 10-year target is to achieve at least a ten (10) percent or 13.4 gpcd reduction in ten (10) years in the per capita per day usage in water consumption. SWSC will be able to achieve 6.7 gpcd savings during the first five (5) year period and 13.4 gpcd savings within the ten (10) year period of time. Their reduction in water demand will reduce the quantity of water supplies required for the future and lower the peak demand requirements of the distribution system. The Plan is to implement Best Management Practices and other conservation techniques to achieve the goal.

SWSC's goal is to have a water loss of less than five (5) percent every year. Another goal of their Plan is to increase the percentage delivery rate of water (from the high service pumps at the plants to the metered connections) during the first five (5) years from 85 percent to 90 percent and from 90 percent to 94 percent within the ten (10) years. Their will help reduce water loss of 6.7 gpcd by the end of the first five years and 12.07 gpcd by the end of the 10 year period. Currently SWSC is meeting these water loss reduction goals and will continue to monitor and track their water loss.

The Corporation shall continue to maintain its current per capita use below 85 gallons per capita day. Their per capita use is consistent with the Region M Water Planning Group's Plan and is one of the lowest in the Rio Grande Valley. The Corporation's long term goal is to maintain the 85 gallons or less per capita day use for the next 5 and 10 year period.

Metering Devices

All meters that measure the amount of raw water received at each water treatment plant shall be maintained within an accuracy level of + - 5%. Their requirement is also stated in contracts with the raw water suppliers.

Treated Water Metering

All water service connections shall be metered and maintained by the Corporation. The Corporation through computer analysis is able to detect high use during the normal monthly meter readings. Additional information on metering policies is contained in the Corporation Tariff. The Corporation will continue its meter maintenance policy of testing, repairing and/or replacement of all meters that do not meet AWWA standards.

Leak Detection and Unaccounted for Water

The Corporation Meter Readers are being trained in the detection of water leaks. They respond to reports from customers when a suspected leak in the system is reported. All reported leaks are investigated immediately and repaired within 24 hours. All water main leaks are repaired immediately, regardless of the time of day.

Public Education / Water Conservation

The Corporation will continue to provide water conservation materials to its customers through handouts and by providing a copy of the Tariff to all new customers, and shall include a copy of their Plan if requested.

Water Rate

The Corporation will maintain its current inclining rate schedule for all users of the system to promote water conservation.

Records Management

The Corporation will continue to manage its records system that allows for the segregation of water sales and uses into user classes of residential and commercial. Plans to define and categorize the various "users" and classify them in specific areas such as multi-family, commercial, industrial, schools, and institutional are being considered for future computer software upgrades.

Wholesale Water Supply Contracts

The Corporation does not provide Wholesale water to any individuals or entities at this time.

Plan Enforcement

The General Manager, and her staff, shall enforce their Water Conservation Plan with the authority of the Board of Directors.

DROUGHT CONTINGENCY PLAN

Declaration of Policy, Purpose, and Intent

The Corporation has adopted this policy in order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions.

Water uses regulated or prohibited under the Water Conservation & Drought Contingency Plan (Plan) are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply conditions are deemed to constitute a waste of water which subjects the offenders to penalties as defined in this Plan.

Public Involvement

Opportunity for the public to provide input into the preparation of the Plan was provided by the Corporation by public notice of a regular board meeting. The Corporation holds regular meetings on the second Thursday each month. These meetings are open to the membership and general public and conform to the Open Meetings law. Any person in attendance may speak to the Board of Directors about any issue that concerns them, and may give input to aid in the decision making process.

Public Education

The Corporation will periodically provide the public with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. The information will be provided by means of public meetings, utility bill inserts, and over the counter handouts. A copy of this Plan will be included as Section G in the Tariff and given to all new customers when requested.

Coordination with Regional Water Planning Group

The service area of the Corporation is located within the Rio Grande Region M Planning Area. A copy of this Plan has been provided to the Rio Grande Regional Water Planning Group and the Corporation has adopted the Regional Planning Group's Triggering Criteria.

Authorization

The General Manager, or her designee, is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The General Manager, or her designee, shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan.

Application

The provisions of this Plan shall apply to all persons, customers, and property utilizing water provided by the Corporation. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, cities, and all other legal entities.

Definitions

For the purposes of this Plan, the following definitions shall apply:

<u>Aesthetic water use</u>: water use for ornamental or decorative purposes such as fountains, reflecting pools, and water gardens.

<u>Commercial and institutional water use</u>: water use, which is integral to the operations of commercial and non-profit establishments and governmental entities such as retail establishments, hotels and motels, restaurants, and office buildings.

<u>Conservation</u>: those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water or increase the recycling and reuse of water so that a supply is conserved and made available for future or alternative uses.

<u>Customer</u>: any person, company, or organization using water supplied by the Corporation.

<u>Domestic water use</u>: water use for personal needs or for household or sanitary purposes such as drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

Even numbered addresses: street addresses, box numbers, or rural postal route numbers ending in 0, 2, 4, 6, or 8 and locations without addresses.

<u>Industrial water use</u>: the use of water in processes designed to convert materials of lower value into forms having greater usability and value.

<u>Landscape irrigation use</u>: water used for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, and rights-of-way and medians.

Non-essential water use: water uses that are not essential nor required for the protection of public, health, safety, and welfare, including:

- (a) Irrigation of landscape areas, including parks, or athletic fields, except otherwise provided under this Plan;
- (b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle;
- (c) Use of water to wash down any sidewalks, walkways, driveways, or other hard-surfaced areas;
- (d) Use of water to wash down buildings or structures for purposes other than immediate fire protection;
- (e) Flushing gutters or permitting water to run or accumulate in any gutter or street;
- (f) Use of water to fill, refill, or add to any indoor or outdoor swimming pools or Jacuzzi-type pools;
- (g) Failure to repair a leak(s) within a reasonable period after having been given notice to repair the leak(s); and

Odd numbered addresses: street addresses, box numbers, or rural postal route numbers ending in 1, 3, 5, 7, or 9.

Criteria for Initiation and Termination of Drought Response Stages

The General Manager or her designee shall monitor water supply and/or demand conditions on a monthly basis and shall determine when conditions warrant initiation or termination of each stage of the Plan, that is, when the specified "triggers" are reached.

The triggering criteria described below are based on the Rio Grande Regional Planning Group's recommendations.

Stage 1 Trigger - MILD Water Shortage Conditions

Requirements for initiation

Customers shall be requested to voluntarily conserve water and adhere to the prescribed restrictions on certain water uses, defined in Section VII - Definitions, when the level of U.S. water stored in Amistad and Falcon Reservoirs reaches 51% or 1.66MAF.

Their phase consists of voluntary water conservation by all users of the system. All users of the system shall be requested to voluntarily conserve the use of water.

Requirements for termination

Stage 1 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 30 consecutive days.

Stage 2 Trigger - MODERATE Water Shortage Conditions

Requirements for initiation

Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses for Stage 2 of this plan when the U.S. water stored in Amistad and Falcon Reservoirs reaches 25% or 834,600 acre feet.

This phase consists of mandatory restrictions of the use of water and imposing penalties or sanctions for violations of set restrictions.

Requirements for termination

Stage 2 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 30 consecutive days. Upon termination of Stage 2, Stage 1 becomes operative.

Stage3Trigger-SEVERE Water Shortage Conditions

Requirements for initiation

Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses for Stage 3 of this Plan when the U.S. water stored in Amistad and Falcon Reservoirs reaches 15% or 504,600 acre feet.

This phase reduces the maximum amount of water usage for all users of the system and imposes surcharges, service disconnection, or other more severe sanctions for violators.

Requirements for termination

Stage 3 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 30 consecutive days. Upon termination of Stage 3, Stage 2 becomes operative.

Stage 4 Trigger - EMERGENCY Water Shortage Conditions

Requirements for initiation

Customers shall be required to comply with the requirements and restrictions on all non-essential water uses for Stage 4 of this Plan when demands exceed plant production capacity, when there is a raw water delivery system failure or contamination, or during a system outage due to a major water system component failure.

This phase will restrict the maximum amount of water usage for all users of the system and result in termination of service for violators until the emergency has been abated. Requirements for termination Stage 4 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 24 hours. Upon termination of Stage 4, Stage 3 becomes operative.

Drought Response Stages

The General Manager, or her designee, shall monitor water supply and/or demand conditions on a daily basis and, in accordance with the triggering criteria set forth in the Plan, shall determine that a mild, moderate, or severe, water shortage condition exists and shall implement the following notification procedures:

Notification

Notification of the Public:

The General Manager, or her designee, may notify the public by publication in a newspaper of general circulation, by direct mail to each customer, by public service announcements, or by signs posted in public places.

Additional Notification:

The General Manager, or her designee, shall notify directly, or cause to be notified directly, the following individuals and entities:

The Board of Directors of the Corporation
The City of Alton Administrator
The City of Alton Fire Chief
The City of Edinburg Fire Chief
Critical water users due to medical reasons
TCEO

Stage 1 Responses -MILD Water Shortage Conditions

Goal: Achieve a voluntary 5 percent reduction in monthly total water use.

Voluntary Water Use Restrictions:

- (a) All customers will be asked to voluntarily limit the irrigation of lawns and landscaped areas, and to irrigate only between the hours of midnight and 10:00 a.m.
- (b) All customers will be asked to practice water conservation and to minimize or discontinue water use for non-essential purposes.

Stage 2 Responses - MODERATE Water Shortage Conditions

Goal: Achieve a 5 percent reduction in monthly total water use.

Mandatory Water Use Restrictions: Under threat of penalty for violation, the following water use restrictions shall apply to all persons:

(a) Irrigation of landscaped areas with hose-end sprinklers or automatic irrigation systems shall be limited to the hours of midnight until 10:00 a.m. However, irrigation of landscaped areas is permitted at any time if it is by means of a hand-held hose, a faucet filled bucket or watering can of five (5) gallons or less, or drip irrigation system.

- (b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited except on designated watering days between the hours of midnight and 10:00 a.m. Such washing, when allowed, shall be done with a hand-held bucket or a hand-held hose equipped with a positive shutoff nozzle for quick rinses. Vehicle washing may be done at any time on the immediate premises of a commercial car wash or commercial service station.
- Further, such washing may be exempted from these regulations if the health, safety, and welfare of the public is contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables.
- (c) Use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, or Jacuzzi-type pools is prohibited except on designated watering days between the hours of midnight and 10:00 a m.
- (d) Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountains or ponds are equipped with a re-circulation system.
- (e) Use of water from hydrants shall be limited to firefighting, related activities, or other activities necessary to maintain public health, safety, and welfare.
- (f) The following uses of water are defined as non-essential and are prohibited:
 - Washing sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas.
 - 2. Use of water to wash down buildings or structures for purposes other than immediate fire protection.
 - 3. Use of water for dust control.
 - 4. Flushing gutters or permitting water to run or accumulate in any gutter or street.

Stage 3 Responses - SEVERE Water Shortage Conditions

Goal: Achieve a 10 percent reduction in monthly total water use.

Severe Water Use Restrictions: All requirements of Stage 2 shall remain in effect during Stage 3 except:

- (a) Use of water for other than residential household needs is prohibited.
- (b) Use of water from fire hydrants is restricted to fire suppression only.

Stage 4 Responses -EMERGENCY Water Shortage Conditions

<u>Goal</u>: Reduce the level of water consumption to that amount necessary that will provide adequate water to protect and preserve public health, welfare, and safety and minimize the adverse impacts of the emergency water supply shortage.

<u>Emergency Water Use Restrictions</u>: All requirements of Stage 3 shall remain in effect during Stage 4 except:

- (a) Any use of water for other than residential household needs is prohibited.
- (b) All water from fire hydrants is restricted to fire suppression only.

WATER ALLOCATION / ENFORCEMENT

In the event water shortage conditions threaten public health, safety, and welfare, the General Manager is hereby authorized to allocate water according to the following water allocation plan: Water shortages may be caused by water production or distribution system limitations, source contamination, or failure of a major water system component.

Single-Family Residential Customers

The allocation to residential water customers residing in a single-family dwelling shall be as follows:

| Persons in Household | Gallons per Month Allowed |
|----------------------|---------------------------|
| 1 or 2 | 5,000 |
| 3 or 4 | 7,000 |
| 5 or 6 | 9,000 |
| 7 or 8 | 11,000 |
| 9 or 10 | 13,000 |
| 10 or more | 15,000 |

"Household" means the residential premises served by the customer's meter. "Persons per household includes only those persons currently physically residing at the premises and expected to reside there for the entire billing period. It shall be assumed that a particular customer's household is comprised of two

(2) persons unless the customer notifies the Corporation of a greater number of persons per household on a form prescribed by the General Manager. The General Manager shall give her best effort to see that such forms are made available to every residential customer. It shall be the customer's responsibility to go to the Corporation's office to complete and sign the form claiming more than two (2) persons per household. New customers may claim more persons per household at the time of applying for water service on the form prescribed by the General Manager. When the number of persons per household increases so as to place the customer in a different allocation category, the customer may notify the Corporation on such form and the change will be implemented in the next practicable billing period. If the number of persons in a household is reduced, the customer shall notify the Corporation in writing within two (2) days. In prescribing the method for claiming more than two (2) persons per household, the General Manager shall adopt methods to insure the accuracy of the claim.

Residential water customers shall pay the following surcharges:

\$3.00 for the first 1,000 gallons over allocation.

\$5.00 for the second 1,000 gallons over allocation.

\$10.00 for the third 1,000 gallons over allocation.

\$15.00 for each additional 1,000 gallons over allocation.

Surcharges shall be cumulative.

Master-Metered Multi-Family Residential Customers And Mobile Home Parks

The allocation to a customer billed from a master meter that jointly measures water to multiple permanent residential dwelling units (e.g., apartments, mobile homes) shall be allocated 6,000 gallons per month for each dwelling unit. It shall be assumed that such a customer's meter serves two or less dwelling units unless the customer notifies the Corporation of a greater number on a form prescribed by the General Manager. The General Manager shall give her best effort to see that such forms are made available to every such customer. It shall be the customer's responsibility to go to the Corporation's office to complete and sign the form claiming more than two (2) dwellings. A dwelling unit may be claimed under the provision only if it is occupied. If the number of dwelling units served by a master meter is reduced or increased, the customer shall notify the Corporation in writing within two (2) days.

In prescribing the method for claiming more than two (2) dwelling units, the General Manager shall adopt methods to insure the accuracy of the claim. Any person who knowingly, recklessly, or with criminal negligence falsely reports the number of dwelling units served by a master meter or fails to timely notify the Corporation within 3 days of an increase or reduction in the number of dwelling units shall be subject to a charge of \$50.00 per day for each day the customer fails to notify the Corporation.

Customers billed from a master meter under the provision shall pay the following monthly surcharges:

\$3.00 for each 1,000 gallons over allocation for each dwelling unit.
\$5.00 thereafter, for each additional 1,000 gallons over allocation through a second 1,000 gallons for each dwelling unit.
\$10.00 thereafter, for each additional 1,000 gallons over allocation through a third 1,000 gallons for each dwelling unit.
\$15.00 thereafter for each additional 1,000 gallons over allocation.

Surcharges shall be cumulative.

Commercial Customers

A monthly water allocation shall be established by the General Manager for each non-residential commercial customer. The non-residential customer's allocation shall be approximately 75% percent of the customer's usage for corresponding month's billing period for the previous 12 months.

Variances

The General Manager, or her designee, may, in writing, grant temporary variance for existing water uses otherwise prohibited under this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the health, sanitation, or fire protection for the public or the person requesting such variance if one or more of the following conditions are met:

- (a) Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect
- (b) Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this Plan shall file a petition for variance with the General Manager within 5 days after the Plan, or a particular drought response stage has been invoked. All petitions for variances shall be reviewed by the General Manager and shall include the following:

- (a) Name and address of the petitioner(s).
- (b) Purpose of water use.
- (c) Specific provision(s) of the Plan from which the petitioner is requesting relief.
- (d) Detailed statement as to how the specific provision of the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Plan.
- (e) Description of the relief requested.
- (f) Period of time for which the variance is sought.
- (g) Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
- (h) Other pertinent information.

Variances granted by the Corporation shall be subject to the following conditions, unless waived or modified by the General Manager:

- (a) Variances granted shall include a timetable for compliance.
- (b) Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

No variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.

THEIR WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN WAS ADOPTED BY THE BOARD OF DIRECTORS (AS REVISED) AT A REGULAR MEETING HELD ON 14 AUGUST 2014. THEIR PLAN SHALL BE INCLUDED IN THE CORPORATION'S TARIFF AS SECTION G.

Jose E. Garza, Secretary-Treasure

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20 West Williamsburg Road • Sandston, VA 23150 (804) 737-1700 •FAX (804) 737-7133 www.ics-scada.com

SWG Consulting Engineers 611 Bill Summers International Boulevard Wesleco, TX 78596

May 8, 2018

Attention: Christian Winston

Re: Sharyland Water Treatment Plant No.1

Filter Magic® Control System Watersmart SCADA Report

Dear Ms. Winston:

I reviewed the information that you sent me in regard to the Watersmart Grant opportunity for installing a new highly automated filter control system and SCADA system at the plant. Without a doubt, installing the new filter control system alone will save the utility a substantial amount of production water currently being wasted to their lagoons instead of their clearwell.

In this report, I will base the anticipated water savings at the plant on another water plant in Georgia where their existing filter system conditions were similar to what exists at the Sharyland plant. Their outdated and obsolete filter system and related filter control system were completely replaced with new technology providing them substantial water savings, increased operating efficiency and substantial reduction in wastewater.

Crosstown Road Water Treatment Plant

The Crosstown Road Water Treatment Plant is located in Peachtree City Georgia and is a part of the Fayette County Water System. The original conditions of their filter system and filter control system at the plant included:

- 6.8 MGD
- 8 constant level gravity filters
- Surface sweeps
- Wheeler clay underdrains requiring 12" of gravel between them multimedia
- Multimedia 12" of sand and 18" of anthracite
- Filter-To-Waste is used 18 to 24 minutes before filter effluent returns within mandated compliance level of 0.3 NTU
- Filter flowrate 3 GPM/SF
- Filter runtimes 60 to 80 hours
- Filter System Efficiency 92.0%
- Pumped backwash water from clearwell 18 GPM/SF
- Manually operated filter control systems from filter control consoles located in the filter gallery
- Extremely limited plant SCADA system that only monitored effluent turbidity in the filter system
- Pilot study estimated that the plant was wasting up to 100,000,000 gallons of production water annually by over washing filters during backwashes.

- Their wastewater treatment system included three decanting lagoons
- Plant's cost of production \$1.58 per thousand gallons of water
- Estimated annual savings by fully automating the filter system including water saving filter optimization technology was \$158,000.00 per year.

The results of the filter system and filter control system upgrade project are as follows:

- The rehabilitation project included high rating the filter system from 6.8 MGD to 10.0 MGD
- 8 constant level gravity filters
- Air Scour
- AWI low-profile stainless-steel underdrains with integral air scour system
- Multimedia 12" of sand and 18" of Puracite
- Filter-To-Waste is used for 2 minutes to ensure that filter effluent remains within mandated compliance level of 0.3 NTU. Filter effluent turbidity spike has been substantially eliminated with filters returning to service below 0.2 NTU.
- Filter flowrate The project included high rating the filter system from 3 GPM/SF to 5 GPM/SF
- Filter runtimes 120 to 160 hours
- Filter System Efficiency 97.5.0%
- Pumped backwash water from clearwell 18 GPM/SF
- Filter Magic® Fully Automated Filter Control System
 - o Eliminates operator error and inconsistency
 - o Provides consistent water quality
- Filter Magic[®] Zero2Waste[®] (Z2W[®]) Filter Optimization Water Saving Technology
 - o Precise backwash media bed expansion control (20%)
 - o Precise backwash high wash truncation control (20 NTU)
 - o Returns filter to service after backwash without effluent turbidity spike
- Filter Magic® Fully Redundant Plant SCADA System
 - o Long-term historical data analysis
 - o Filter system health analysis
 - Backwash media bed expansion
 - Backwash high wash truncation
 - Backwash water and related filter-to-waste consumption
 - Filter system efficiency
- Post project analysis of water savings through automation of filter control system and backwash control system calculated that the plant was now saving up to 98,000,000 gallons of production water annually by precisely monitoring and controlling all backwashes.
- Substantial reduction of wastewater from filter system by precisely controlling all backwashes allowed client to remove one of three lagoons from service.
- Plant's cost of production \$1.58 per thousand gallons of water
- Post project estimated annual savings by fully automating the filter system including water saving filter optimization technology is \$145,000.00 per year.

Sharyland Water Treatment Plant No.1

The existing conditions of the filter system and filter control system at the Sharyland Water Treatment Plant No.1 include:

Page 3

- 6.0 MGD
- 6 varying level gravity filters
- Surface sweeps
- · Wheeler clay underdrains requiring 12" of gravel between them multimedia
- Multimedia 12" of sand and 18" of anthracite (estimated)
- This filter system does not have a filter-to-waste system. Upon return to service, filter
 effluent is allowed to be above mandated compliance level of 0.3 NTU for a maximum of
 3 hours.
- Filter flowrate Unknown
- Filter runtimes 48 to 72 hours
- Filter System Efficiency 92.0% or less (estimated)
- Pumped backwash water from clearwell 18 GPM/SF
- Manually operated filter control systems from handwheels on valves located on filter deck
- Extremely limited plant SCADA system that only monitors effluent turbidity in the filter system
- Based on interviews with plant operators and the conditions of the existing manual filter control systems at the plant and by comparison to the Crosstown Road Water Treatment Plant described above, I estimate that the plant could be wasting 50,000,000 to 80,000,000 gallons of production water annually by over washing filters during backwashes.
- The wastewater treatment system includes two decanting lagoons
- Plant's cost of production \$1.05 per thousand gallons of water (estimated)
- Estimated annual savings by fully automating the filter system including water saving filter optimization technology is \$52,500.00 to \$84,000.00 per year.

The projected conditions of the new filter system and new filter control system at the Sharyland Water Treatment Plant No.1 include:

- 6.0 MGE
- 6 varying level gravity filters. They may be converted to constant level filter during the project to maximize filter system performance
- New air scour system
- New highly efficient underdrain systems
- Multimedia 12" of sand and 18" of anthracite (estimated)
- This filter system does not have a filter-to-waste system. Upon return to service, filter
 effluent is allowed to be above mandated compliance level of 0.3 NTU for a maximum of
 3 hours.
- Filter flowrate Unknown
- Filter runtimes 96 to 144 hours (estimated)
- Filter System Efficiency 97.5% (estimated)
- Pumped backwash water from clearwell 18 GPM/SF

- Filter Magic® Fully Automated Filter Control System
 - Eliminates operator error and inconsistency
 - o Provides consistent water quality
- Filter Magic® Zero2Waste® (Z2W®) Filter Optimization Water Saving Technology
 - o Precise backwash media bed expansion control (20%)
 - o Precise backwash high wash truncation control (20 NTU)
 - o Returns filter to service after backwash without effluent turbidity spike
- Fully Redundant Plant SCADA System
 - o Long-term historical data analysis
 - o Filter system health analysis
 - Backwash media bed expansion
 - Backwash high wash truncation
 - Backwash water and related filter-to-waste consumption
 - Filter system efficiency
- Post project analysis of water savings through automation of filter control system and backwash control system estimates that the plant can potentially save between 50,000,000 and 80,000,000 gallons of production water annually by precisely monitoring and controlling all backwashes.
- Substantial reduction of wastewater from filter system and related wastewater treatment systems by precisely controlling all backwashes.
- Plant's cost of production \$1.05 per thousand gallons of water (estimated)
- Post project estimated annual savings by fully automating the filter system including water saving filter optimization technology is \$52,500.00 to \$84,000.00 per year.

In summary, I highly recommend that the existing plant SCADA system, filter system and filter control systems be upgraded and replaced to take full advantage of modern technology available on the market. Fully automating the plant will create consistent high-quality water while eliminating needless waste of water through manual outdated procedures, equipment and processes.

Please do not hesitate to call if further information is needed.

Very truly yours,

Mark W. Romers

President

Mark W. Romers

WATER Every Drop Counts

Is Your Plant Wasting Water?

In our experience, most gravity filter water treatment plants tend to waste backwash water but aren't aware of it.

Filter Magic[®], can potentially save you a substantial amount of backwash water as well as upfront capital costs & long-term maintenance costs.



In today's world, water is precious... every drop counts

Filter Magic's[®] Zero2Waste[®]

Filter Magic's Zero2Waste (Z2W) patented technology can provide you a significant ROI through water savings by:

- Continuous monitoring of turbidity on top of the filters, especially during a backwash, allowing our patented filter backwash control system to precisely terminate the high wash based on turbidity.
- Accurate monitoring, of filter media level at all times, especially during a backwash, allowing our filter backwash system to precisely control the filter media bed expansion during the high wash regardless of water temperature.
- · Enhanced filter system performance and efficiency.
- Historical data and analysis of long-term filter performance, efficiency and water savings.
- · Reduction in cost of wastewater treatment systems
- · Increase in water production.

Filter Magic[®] solutions offer a 3 or 5 year warranty, on the entire filter control system. Our products are made in America, green technology and optimizes your filter system.

7 Filter Magic®

Filter Magic[®] is a pre-packaged pre-programmed, proven and patented, filter control system. We take complete responsibility for the entire filter system including all controls, instrumentation, valve actuation and water.

Our comprehensive user friendly pre-programed software solutions are customized for precise operational and backwash requirements.

Our patented 2-wire low voltage Actuator Sensor-Interface (AS-I) bus networks between filter control consoles and all valve actuators and instrumentation substantially eliminating conduit and wire trees.

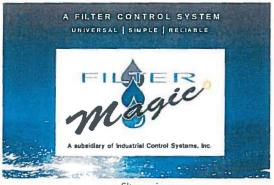
Filter Magic[®] universally works with pneumatic, electric or hydraulic valve actuation. It's perfect for retrofit solutions and new construction for surface, ground or tertiary water gravity filter systems.

A Fo

For More Info Contact:

Mark Romers, President/Owner mromers@ics-scada.com • cell (804) 512-0200

20 W. Williamsburg Road • Sandston, VA 23150 office (804) 737-1700 • fax (804) 737-7133



www.filtermagic.com



www.filtermagic.com

Division 11 - Filter Control System

Filter Magic[®] is a universal, simple, reliable and low-cost Filter Control System perfect for retrofit solutions and new construction.

Filter Magic® (FM) is a packaged preprogrammed, modular and proven filter control system that substantially reduces the cost of installation, provides long-term reliability, and ease of maintenance while improving filter system efficiencies and substantially reducing excess backwash wastewater and filter-to-waste water.

It is specifically designed to enhance filter and backwash operations for all types of surface water treatment plants or wastewater tertiary treatment plants including Denitrification, where required.

FM takes complete responsibility for the entire filter control system including the controls, instrumentation, flow devices, analyzers, valves, actuators and common elements of the backwash system such as backwash pumps, blowers, etc.

FM is a pre-packaged and proven filter control system and is not considered traditional integration. It is completely open-architecture, non-proprietary off-the-shelf technology.

All FM solutions include a minimum of a 3-year comprehensive warranty which may be increased to 5-years based on final negotiation or preferred treatment for a project. The warranty includes annual inspection, tuning and remedial training for staff as necessary to maintain maximum performance of their filter systems.

FM solutions operate through a unique 2-wire 24 VDC easy-to-use and service bus network technology that substantially reduces the typical conduit and wire tree normally associated with monitoring and controlling filter control systems.

FM bus network solutions utilize new or existing electric, pneumatic or hydraulic actuation to control the filter control system. When used in conjunction with a revolutionary pneumatic vane actuator, FM provides maximum upfront capital savings as well as long-term reliability and ease of use for operations.

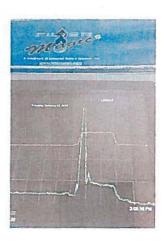


www.filtermagic.com

Filter Magic[®] Filter Optimization System

Filter Magic[®] Filter Optimization Systems also known as FM Zero-2-Waste[™] or FM Z2W[™] provide water plant operators the information to fully understand the performance of their backwash systems, maximize their filter efficiency and substantially reduce excess backwash wastewater and filter-to-waste water.

FM Zero-2-Waste™ utilizes a continuous submerged turbidity analyzer sensor in the water above the filter to provide operations with settled water turbidity while filtering and backwash turbidity while cleaning the filter. This information allows operations to manually or automatically control the duration of the backwash for maximum efficiency in cleaning the media without over washing it.



FM Z2W™ measures the fluidization of the media during a backwash providing operations invaluable information to manually or automatically control the backwash flow rate to achieve a specific bed expansion for maximum efficiency during a backwash. It also provides operations with the depth of media while filtering. In automatic, it controls the backwash flowrate to maintain a specific bed expansion regardless of water temperature.

Filter media bed expansion and backwash turbidity data is prominently displayed in FM's Operator Interface Terminal (OIT) including a FM Z2W™ popup screen. The popup screen includes trends and calculated totals of backwash water used to achieve an optimum filter backwash. Calculations include actual backwash water consumed, calculated filter-to-waste water consumed, and a total volume of all the water consumed during the filter backwash procedure. This information allows operators to manually fine tune their filter backwash procedure or allows Filter Magic® to automatically adjust the backwash parameters to achieve maximum filter performance with minimal wastewater. The information is also available to FM SCADA and plant SCADA systems for trending, backwash analysis, reporting and historical archiving.

FM Z2W™ water savings substantially reduce the volume of wastewater that is traditionally processed by the solids handling facility at a water plant. FM Z2W™ can potentially extend the life of a plant that is nearing permitted treatment capacity by maximizing the amount of water filtered between backwash cycles and reducing the amount of treated water used during the backwash process. The realized water savings subsequently increase the amount of treated water that can be pumped to the distribution system over time.

FM Z2W[™] saves water and every drop of water is precious in today's world!!!

APPENDIX B

| RESOLUTION NO. | RESO | LUTIO | ON NO |). |
|----------------|------|-------|-------|-----------|
|----------------|------|-------|-------|-----------|

A RESOLUTION OF THE BOARD OF SHARYLAND WATER SUPPLY CORPORATION (SWSC), APPROVING THE APPLICATON FOR GRANT FUNDS FOR THE BUREAU OF RECLAMATION'S WATERSMART GRANTS: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2018 FOR SHARYLAND WATER SUPPLY CORPORATION'S SCADA, PIPE-LESS SLUDGE MECHANISMS, HIGH SERVICE PUMPS WITH VFDS, AND BACKWASH PUMPS WITH VFDS PROJECT

WHEREAS, Sharyland Water Supply Corporation has prepared an application to apply for federal funding from the United States Department of the Interior, Bureau of Reclamation to assist in the funding of the Water and Energy SCADA, Pipe-less Sludge Mechanisms, High Service Pumps with VFDs, and Backwash Pumps with VFDs Project; and

WHEREAS, the funding opportunity provided by Reclamation through their Grant Program entitled "WaterSMART Grants: Water and Energy Efficiency Grants for FY 2018" Funding Opportunity Announcement No. is BOR-DO-18-F006; and

WHEREAS, the proposed Project will benefit customers in SWSC's service area by providing a Water Treatment Plant that conserves water and increases the use of renewable energy sources through the use of SCADA, Pipe-less Sludge Mechanisms, High Service Pumps with VFDs, and Backwash Pumps with VFDs; and

WHEREAS, Sharyland Water Supply Corporation intends to enter into an agreement with Reclamation to carry out the SCADA, Pipe-less Sludge Mechanisms, High Service Pumps with VFDs, and Backwash Pumps with VFDs Project if the WaterSMART Grant is awarded to Sharyland Water Supply Corporation.

NOW, THEREFORE, BE IT RESOLVED that the Board of Sharyland Water Supply Corporation does hereby finds, determines, and declares as follows:

SECTION 1. Approves the filing of an application for the SCADA, Pipe-less Sludge Mechanisms, High Service Pumps with VFDs, and Backwash Pumps with VFDs project;

SECTION 2. Certifies that Sharyland Water Supply Corporation understands they will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement;

SECTION 3. Certifies that the Applicant is capable of providing the amount of funding specified in the application; and,

SECTION 4. Appoints the General Manager, or Project Manager, as agent to conduct all negotiations, execute, and submit all documents including, but not limited to applications, agreements, payment requests and so on, which may be necessary for the completion of the aforementioned project.

PASSED, APPROVED, and ADOPTED this 19th day of April, 2018.

Dr. Andrew H. Smith, III President

Board of Directors
Jesus Garcia-President
Mike Helle-Vice-President
Susan Kawamoto-Secretary
Kathy Reavis-Member
Donald B Sutton-Member



Michael E. Warshak-General Manager

P.O. Box 877, Mission. TX- 78573 (956) 585-4818 Fax: (956) 585-9743

May 1, 2018

Sherilyn Dahlberg, General Manager Sharyland Water Supply Corporation P.O Box 1868 Mission, Texas 78573-0031

Re: Sharyland Water Supply Corporation's WaterSMART Grant Application for the Bureau of Reclamation

Dear Mrs. Dahlberg:

I write you in support of Sharyland Water Supply Corporation's (SWSC) application for a Bureau of Reclamation's WaterSMART Grant: Water and Energy Efficient Grants for Fiscal year 2018.

Your application to secure funding for SCADA, Pipe -Less Sludge Mechanisms, Wash Water Recovery Tank, High Service Pumps with VFDs, and Backwash Pumps with VFDs for SWSC's Water Treatment Plant No. 1 will benefit the customers on your system as well as benefitting the Rio Grande Valley through your conservation effort.

Our Community of United Irrigation District supplies municipal raw water and relies on SWSC for safe, clean drinking water now and for the future. Ensuring water conservation and energy saving for Water Treatment Plant No. 1 will help with these valuable resources and will provide these increased resources for futures generation.

I support your efforts to conserve water and energy use at SWSC's Water Treatment Plant No. 1 and encourage the Bureau of Reclamation to approve your Proposed Project funding.

Sincerely,

Mike Warshak General Manager



COMMITTEES FINANCE Vice Chair SUNSET ADVISORY COMMISSION TRANSPORTATION

THE SENATE OF TEXAS JUAN "CHUY" HINOJOSA DISTRICT 20

COMMITTEES
NATURAL RESOURCES &
ECONOMIC DEVELOPMENT

AGRICULTURE, WATER & RURAL AFFAIRS

May 4, 2018

Sherilyn Dahlberg, General Manager Sharyland Water Supply Corporation P.O. Box 1868 Mission, TX 78573

Re: Sharyland Water Supply Corporation's WaterSMART Grant Application for the Bureau of Reclamation

Dear Ms. Dahlberg:

I write you in support of Sharyland Water Supply Corporation's (SWSC) application for a Bureau of Reclamation's WaterSMART Grant: Water and Energy Efficient Grants for Fiscal Year 2018.

Your application to secure funding for SCADA, Pipe-Less Sludge Mechanisms, Wash Water Recovery Tank, High Service Pumps with VFDs and Backwash Pumps with VFDs for SWSC's Water Treatment Plant No. 1 will benefit customers on your system as well as benefiting the Rio Grande Valley through your conservation efforts.

Our area relies on SWSC for safe, clean drinking water now and for the future. Ensuring water conservation and energy savings for Water Treatment Plant No. 1 will help with these valuable resources and will provide these increased resources for future generations.

I support your efforts to conserve water and energy use at SWSC's Water Treatment Plant No. 1 and encourage the Bureau of Reclamation to approve your Proposed Project funding. Should you have any questions, please do not hesitate to contact me.

Sincerely,

Juan "Chuy" Hinojosa

State Senator, District 20

State of Texas House of Representatibes

CAPITOL OFFICE:
PO. BOX 2910
AUSTIN, TEXAS 78768-2910
VOICE: (512) 463-0578
FAX: (512) 463-1482
E-MAIL: bobbyguern@ house state txus



DISTRICT OFFICE: 10213 NORTH 10TH STREET SUITE B MCALLEN, TEXAS 76504 VOICE: (956) 292-0407 FAX: (956) 292-0418

R.D. "Bobby" Guerra

DISTRICT 41

May 4, 2018

Sherilyn Dahlberg, General Manager Sharyland Water Supply Corporation P.O. Box 1868 Mission, TX 78573-0031

RE: Sharyland Water Supply Corporation's WaterSMART Grant Application for the Bureau of Reclamation

Ms. Dahlberg,

I write in support of Sharyland Water Supply Corporation's (SWSC) application for a Bureau of Reclamation's Water SMART Grant: Water and Energy Efficient Grants for Fiscal Year 2018. As the State Representative for House District 41, some of my constituents receive their water services from SWSC, and with this grant, they will receive the benefit of the conservation efforts and improvements that SWSC is seeking to make.

Your application to secure funding for SCADA, Pipe-Less Mechanisms, Wash Water Recovery Tank, High Service Pumps with VFDs, and Backwash Pumps with VFDs for SWSC's Water Treatment Plant No. 1 will be beneficial not only to the consumers but to the Rio Grande Valley as a whole through your conservation efforts.

Some of my constituents depend on SWSC for safe, clean drinking water. Ensuring water conservation and energy savings for Water Treatment Plant No. 1 will help conserve these valuable resources for future generations.

I support the efforts to conserve water and energy use at SWSC's Water Treatment Plant No. 1 and encourage the Bureau of Reclamation to give this grant application favorable consideration.

Sincerely,

State Representative R.D. 'Bobby' Guerra



City Council Ramiro J. Rodriguez, Jr., Mayor Robert A. Salinas, Mayor Pro-Tem Ruben De Leon, Councilman James Aranda, Councilman Israel Silva, Councilman Ofelia Peña-Perez, Councilwoman

May 03, 2018

Sherilyn Dahlberg, General Manager Sharyland Water Supply Corporation P.O. Box 1868 Mission, Texas 78573-0031

RE: Sharyland Water Supply Corporation's WaterSMART Grant Application for the Bureau of Reclamation

Dear Mrs. Dahlberg:

I write you in <u>support</u> of Sharyland Water Supply Corporation's (SWSC) application for a Bureau of Reclamation's WaterSMART Grant: Water and Energy Efficient Grants for Fiscal Year 2018.

Your application to secure funding for SCADA, Pipe-Less Sludge Mechanisms, Wash Water Recovery Tank, High Service Pumps with VFDs, and Backwash Pumps with VFDs for SWSC's Water Treatment Plant No. 1 will benefit the customers on your system as well as benefiting the Rio Grande Valley through your conservation efforts.

Our Community of Palmhurst relies on SWSC for safe, clean drinking water now and for the future. Ensuring water conservation and energy savings for Water Treatment Plant No. 1 will help with these valuable resources and will provide these increased resources for future generations.

I support your efforts to conserve water and energy use at SWSC's Water Treatment Plant No. 1 and encourage the Bureau of Reclamation to approve your Proposed Project funding.

Sincerely,

Lori A. Lopez, City Manager

> 4417 N. Shary Road Palmhurst, Texas 78573 (956) 583-8697 • Fax (956) 581-4630 www.cityofpalmhursttx.com



CITY OF ALTON

City On The Grow

509 S Alton Blvd. Alton, TX 78573 • Office (956) 432-0760 • Fax (956) 432-0766

Salvador Vela Mayor Arturo Galvan Jr. Mayor Pro Tem Ricardo Garza Commissioner Pl. 2 Richard Arevalo Commissioner Pl.3 Emilio Cantu Jr. Commissioner Pl. 4

Jorge Arcaute City Manager May2, 2018

Sherilyn Dahlberg, General Manager Sharyland Water Supply Corporation PO Box 1868 Mission, Texas 78573-0031

Re: Sharyland Water Supply Corporation's WaterSMART Grant Application for the Bureau of Reclamation

Dear Mrs. Dahlberg:

I write you in support of Sharyland Water Supply Corporation's (SWSC) application for a Bureau of Reclamation's WaterSMART Grant: Water and Energy Efficient Grants for Fiscal Year 2018. The City truly appreciates its relationship with SWSC and the valuable service it renders our citizens. Our work together on other projects proves your ability to execute the proposed improvements.

Your application to secure funding for SCADA, Pipe-Less Sludge Mechanisms, Wash Recovery Tank, High Service Pumps with VFDs, and Backwash Pumps with VFD's for SWSC's Water Treatment Plant No. 1 will benefit the customers on your system as well as benefiting the Rio Grande Valley through your conservation efforts.

Alton relies on SWSC for safe, clean drinking water now and for the future. Ensuring water conservation and energy savings for Water Treatment Plant No. 1 will help with these valuable resources and will provide these increased resources for future generations.

I support your efforts to conserve water and energy use, as the efforts mirror city initiatives on conservation and recycling. I implore Bureau of Reclamation to approve your Proposed Project funding.

Sincerely,

Jorge Arcaute, City Manager

"This institution is an equal opportunity provider and employer."



Lower Rio Grande Valley Development Council

May 1, 2018

BOARD MEMBERS

Alex Dominguez Commissioner, Cameron County

David Fuentes Commissioner, Hidalgo County

Pilar Garza Commissioner, Alamo

Rick Morales Mayor, Donna

Daniel A. Guzman Commissioner, Edeouch

Gilbert Enriquez Councilman, Edinburg

Chris Boswell Mayor, Harlingen

Esmeralda Lozano Commissioner, La Feria

Alma Moron Mayor, La Villa

Henry Hinojosa Mayor, Mercedes

Norie Gonzalez Garza Mayor Pro-tem, Mission

Benjamin "Ben" Gomez Mayor, San Benito

Jesus "Jesse" Ramirez Mayor Pro-tem, San Juan

Veronica Gonzales UT – Rio Grande Valley

Paul Hernandez South Texus College

Javier De Leon Texas State Technical College

Delta Lake Irrigation District

Ronald Mills Willacy County Navigation District

Mr. Eddy Gonzalez Member-at-Large

Mayor Rick Cavazos Member-at-Large

Arturo Ramirez Grassroots Organizations

EXECUTIVE DIRECTOR
Ron Garza

Ms. Sherilyn Dahlberg General Manager Sharyland WSC P. O. Box 1868 Mission, TX 78573-0031

RE: Sharyland Water Supply Corporation's WaterSMART Grant Application to the Bureau of Reclamation

Dear Ms. Dahlberg:

On behalf of the Lower Rio Grande Valley Development Council (LRGVDC) I offer this letter of support regarding Sharyland Water Supply Corporation's (SWSC) application for a Bureau of Reclamation WaterSMART Grant: Water and Energy Efficient Grants for Fiscal Year 2018.

Your application to secure funding for SCADA, pipe-less sludge mechanisms, wash water recovery tank, high service pumps with VFDs, and backwash pumps with VFDs for SWSC's Water treatment Plant No. 1 will benefit customers on your system as well as the Rio Grande Valley through your conservation efforts. Furthermore, this application aligns with the 2017-2022 Lower Rio Grande Valley Regional Strategic Plan's Environmental Resources Goal to "support water conservation measures by addressing water quality and quantity concerns".

Thank you for the opportunity to submit this letter of support.

Sincerely.

Ron Garza

Executive Director



Lower Rio Grande Valley Development Council

| Mayor Ambrosio "Amos" Hernandez, Pharr | ent |
|---|------|
| Hon, Norma G. Garcia, Member-at-Large | nt |
| Mayor David Suarez, Weslaco | ent |
| Mayor Jim Darling, McAllenSecreta | Iry' |
| Judge Aurelio 'Keter" Guerra, Willacy CountyTreasur | rer |
| Mayor Tony Martinez, Brownsville | ent |

BOARD MEMBERS

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Pilar Garza Commissioner, Alamo

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Chris Boswell Mayor, Harlingen

Esmeralda Lozano Commissioner, La Feria

Alma Moron Mayor, La Villa

Henry Hinojosa Mayor, Mercedes

Norie Gonzalez Garza Mayor Pro-tem, Mission

Benjamin "Ben" Gomez Mayor, San Benito

Jesus "Jesse" Ramirez Mayor Pro-tem, San Juan

Veronica Gonzales UT – Rio Grande Valley

Paul Hernandez South Texas College

Javier De Leon Texas State Technical College

Troy Allen Delta Lake Irrigation District

Ronald Mills Willacy County Navigation District

Mr. Eddy Gonzalez Member-at-Large

Mayor Rick Cavazos Member-at-Large

Arturo Ramirez Grassroots Organizations

EXECUTIVE DIRECTOR Ron Garza October 23, 2017

To Whom It May Concern:

Please be advised that I, Ron Garza, Executive Director and Chief Administrative Officer for the Lower Rio Grande Valley Development Council, hereby authorize Anna Hernandez, Director of Human Resources, and Crystal Balboa, Director of Finance to execute any and all official LRGVDC documents in my absence.

Respectfully,

Røn Garza

Executive Director

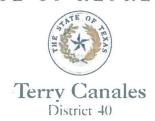
State of Texas County of Hidalgo

On this 23rd day of October, 2017 before me personally appeared Mr. Ron Garza, known to be the person who executed the foregoing instrument and acknowledge that he executed same as his free act and deed.

Notary Public

DEBORAH MORALES
MY COMMISSION EXPIRES
October 20, 2018

TEXAS HOUSE OF REPRESENTATIVES



May 8, 2018

Sherilyn Dahlberg, General Manager Sharyland Water Supply Corporation P.O. Box 1868 Mission, Texas 78573-0031

Re: Sharyland Water Supply Corporation's WaterSMART Grant Application for the Bureau of Reclamation

Dear Mrs. Dahlberg:

I write you in support of Sharyland Water Supply Corporation's (SWSC) application for a Bureau of Reclamation's WaterSMART Grant: Water and Energy Efficient Grants for Fiscal Year 2018.

Your application to secure funding for SCADA, Pipe-Less Sludge Mechanisms, Wash Water Recovery Tank, High Service Pumps with VFDs, and Backwash Pumps with VFDs for SWSC's Water Treatment Plant No. 1 will benefit the customers on your system as well as benefiting the Rio Grande Valley through your conservation efforts.

Our South Texas community relies on SWSC for safe, clean drinking water now and for the future. Ensuring water conservation and energy savings for Water Treatment Plant No. I will help with these valuable resources and will provide these increased resources for future generations.

I support your efforts to conserve water and energy use at SWSC's Water Treatment Plant No. I and encourage the Bureau of Reclamation to approve your Proposed Project funding.

Very truly yours,

State Representative Terry Canales

