

WaterSMART: Small-Scale Water and Energy Efficiency Grants for FY2020

Funding Opportunity Announcement # BOR-DO-20-F006



Town of Parker Arizona Supervisory Control & Data Acquisition (SCADA) Project

APPLICANT

Town of Parker Arizona
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WaterSMART: Small-Scale Water and Energy Efficiency 2020
Town of Parker Arizona SCADA Project

Environmental and Regulatory Compliance Costs 20
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Technical Proposal and Evaluation Criteria

EXECUTIVE SUMMARY

Date, Applicant Name, City, County and State

- » **Date:** March 4, 2020
- » **Applicant name:** Town of Parker Arizona (DUNS# 125733618)
- » **City, County, State:** Parker, La Paz, Arizona
- » **Project Manager**
 - **Name:** Steve Ziegler
 - **Title:** Public Works Director
 - **Telephone:** (928) 669-9265
 - **E-mail:** pwdirector@townofparkeraz.us
- » **Project funding request:** \$50,815
- » **Total funding:** \$101,630
- » **Project Duration:** Est. August 1, 2020 - February 15, 2021

Project Summary

The proposed project will provide Supervisory Control and Data Acquisition (SCADA) to three of Town of Parker Arizona (TOPAZ) well systems for public water consumption to the Town of Parker and Parker South. TOPAZ maintains water and power delivery authority in its service area and over its wells, which deliver 275,639,000 gallons of water every year to 1,070 customers that we provide water to and that (including, residential, commercial, tribal and local government) and currently rely on an antiquated, manual system to monitor and operate at three critical sites totaling 17 miles of pipeline across the Western Arizona desert. The proposed project will allow TOPAZ real-time access to changes in flow conditions to increase water efficiency and conservation and to remotely monitor systems that are not readily available or monitored on weekends. To achieve this efficiency and conservation, TOPAZ will install and/or upgrade three priority wells documented on attachment A-1 Project Location Aerial Map Photos. These priority sites include Parker Well 6, Parker Well 8, and Parker Well South, all of which are identified in the following narrative and the proposed Pricing from DeltaSE and will consist of the following installations (provided by **DeltaSE**, an approved SCADA install provider):

DeltaSE will install the following hardware and software units (*per Well*):

Hardware:

- 1x Remote Telemetry Unit Cabinets (with Cellular Modem and Contact Radio apparatus)
- 1x Pressure Transmitter (Distribution Pressure, Parker South)
- 1x Level Transmitter (Potable Water Tank, Parker South)

1x Current Splitter (for splitting Parker South flow signal)

Town of Parker has also requested the following add-ons to improve data collection from the RO:

1. Raw Water Tank Level
2. Well #1 Start/Stop over SCADA
3. Well #2 Start/Stop over SCADA
4. Control of the RO Feed Pumps
5. Monitor RO System statuses
6. Monitor Chlorine Residual
7. Monitor Fluoride Residual
8. Monitor pH Concentration in the potable water

Town of Parker Arizona is ready to begin installation of SCADA technology upon signing of contracts, requires no permitting for the project, and possess the Public Works Department to fulfill all necessary labor. There are no other groups besides TOPAZ that can claim water rights to this project. Planning, engineering, and Town of Parker Council Approval have already taken place, where official approval will be provided at the April 7 meeting. It is estimated the project will take 4-5 months to complete, greatly improving the water efficiency, security and resiliency of our Township as we prepare for 12% more in water consumption over the next 36 months.

Federal Facility

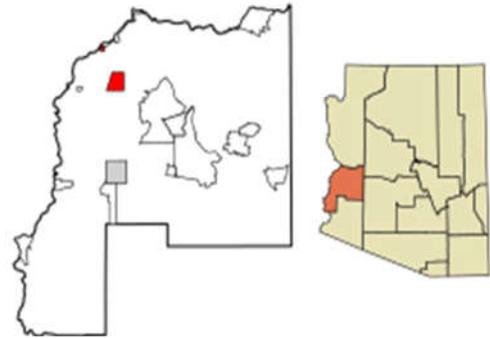
Is the proposed project located on a Federal facility?

No. The proposed SCADA technology will be used solely on Town of Parker Arizona owned and operated land, where we retain all water rights for the project. The TOPAZ project submitted to BOR includes water wells that serve residents, commercial businesses and families within Town of Parker proper (also known as *Parker Central*), as well as *Parker South*, a piece of land currently being developed 15 minutes south of *Parker Central* for residential and commercial purposes.

BACKGROUND DATA

The Town of Parker Arizona’s SCADA project involves 5 well systems in varying locations that work together to meet the water needs of the Town’s residential, commercial and municipal water consumption. Defined by USDA as a rural zone, targeted for various developmental efforts at the State and Federal level, it is home to 3,300 residents and will likely experience 12% growth in the next 2-3 years as per internal Town estimates according

to growth trends. The wells of interest for this project are Wells #6, #7, #8 (Parker Central wells) and Wells #1 and #2 (Parker South wells), where Wells #1, #2, #6 and #8 will all see major SCADA implementation, and Well #7, which is the main distribution point for Parker Central and already has SCADA installed, will communicate its data with adjacent wells for intelligent, monitored water flow.



Town of Parker, AZ and Township seat. Located in La Paz County, Parker was founded in 1908, and is the economic and social epicenter of Western Arizona.

Parker Central – The 2019 total return flow to the Colorado River after treatment was 209,150,000 gallons. With the installation of a SCADA system to better control the well operation, TOPAZ can manage well production and pump less water and have the instrumentation dictate when to performed needed turn on and off. Currently, TOPAZ turns the well on, leaving it operate hours – and even days – on end with no means to monitor the wells while they are running. This poses major risks in terms of water resource consumption and security, necessitating risk reduction through an intelligent monitoring system.



Parker South – There are currently no return flows for Parker South. This water system is located 12 miles away and by installing the SCADA it will give TOPAZ the ability to monitor this site when the system is running, to alarming TOPAZ if there is low tank level, low system pressure etc. In 2019, TOPAZ lost over 100,000 gallons of water due to a water break that occurred at this site. Being a remote location, with limited rural resources, there are no operators there full time during working hours, forcing TOPAZ staff to drive out there daily to check the system, perform maintenance, and so forth.



Well #1 – Drilled in 2003, the pump for this well is set at 330 feet below the land surface. It produces on average 50 gallons a minute when in operation. This is the primary well for this *Parker South* water plant.

Gallons pumped in 2019 = 1,712,000

Well #2 – Drilled in 2004, the pump for this well is set at 380 feet below land surface. It produces on average 350 gallons per minute. This well is the back up well used to fill *Parker South* water ponds to draw from for irrigation and construction.

Gallons pumped in 2019 = 2,102,000

2019 Total gallons pumped from 2 wells = 3,814,000

Well #6 – Drilled in 1956, the pump for this well is set at 180 feet below the land surface. It produces on average 650 gallons a minute when in operation. This well is used as a supplemental well to TOPAZ's main well. TOPAZ operate this well on a regular basis to ensure it works properly, so maintenance can be performed on its primary well and to check the static and running level of the well.

Gallons pumped in 2019 = 275,000

Well 7 – Drilled in 1963, the pump for this well is set at 230 feet below the land surface. It produces 750 gallons per minute. This well is used as TOPAZ's primary well.

Gallons pumped in 2019 = 243,380,000

Well #8 – Drilled in 1977, the pump for this well is set at 180 feet below the land surface. It produces 350 gallons per minute. This well is primarily used during peak demand on TOPAZ's water system for adequately supplying enough water to the Town's community.

Gallons pumped in 2019 = 31,984,000

2019 total gallons pumped from all 3 wells = 275,639,000 gallons

Geographic Location

The proposed project involves wells and water systems located in Parker, Arizona and the developing Parker South, 12 miles directly south from the Town. These wells are owned/managed by the TOPAZ and are located within the boundaries of the Town's owned and operated properties and service areas, as seen in Attachment A-I **Project Location Map**.

Source of Water Supply, Water Rights, Current Water Users

» **Source of water supply.** All listed water systems utilize water primarily provided by the Colorado River Aquifer. Wells 6, 7 and 8 provide treated groundwater for to the Town limits and we are only responsible for providing water to those within Town limits. For Parker South, Wells 1 and 2 provide treated groundwater for the Parker South area.

» **Water rights involved.**

TOPAZ retains all water rights to the wells, servicing 29.2 square miles surrounding *Parker Central* and *Parker South*.

» **Current water uses.**

Parker Central – This system supports the entire town so we have industrial, retail, commercial, government and tribal areas where the water is used for all purposes including irrigation, drinking, manufacturing etc. The Town currently has commercial lots available for purchase that our system will provide water services to.

Parker South - This system currently supports La Pa County Public Works and the La Paz County Fair Grounds. This annexed area of Parker is being developed for residential, industrial and commercial and the system will be used to support all of their water needs.

The Public Works facilities and irrigation services supported by the Wells include Parker Cemetery, Western Park, Pop Harvey Park, City Park, Main Street Park, Library and Town Hall.

» **Number of water users served.** Water is provided to 1,107 customer accounts, and roughly 3,300 individuals.

» **Current and projected water demand.** The estimated amount of water currently used is 275,639,000 gallons annually. La Paz County has seen a steady increase for in-bound population and new Town residents since 2008, where we anticipate a 12% population increase since in the next 2-3 years. Parker South is likely to boom in population following its completion of Phase I development. Combined, these population growth trends will increase the secondary water demand for both *Parker Central* and *Parker South* over the next decade.

» **Potential shortfalls in water supply.**

Drought

Arizona is notoriously arid, ranking annually as the fourth driest state in the nation. experiencing significantly less precipitation than the rest of the United States. Our average rainfall is 5 inches a year. April, May and June are our lowest rainfall averages. Arizona as a whole is in its 21st year of a long term drought and this impacts us because the dry and hot summers lead to higher water use so we have to pump more water from our wells.

Efficiency

Because of the vast rural expanse of TOPAZ's service area, as well as limited resources in predominantly low-income surroundings, limited municipal resources exist to comprehensively monitor all Well water systems, which are manual at this point in time. With the advent of losing over 100,000 gallons over one weekend in 2019 due to water pipe breakage and no scheduled monitoring or remote system installed for monitoring purposes, efficiency remains the most critical potential shortfall for water supply.

Water Delivery System

For agricultural systems, please include the types and approximate total lengths of canals and laterals (e.g., unlined or lined open channel, pipe, including types of pipe and lining materials), the number of irrigation turnouts and other significant existing irrigation improvements (e.g., automated control structures, remote monitoring devices and SCADA systems).

For the purpose of this BOR project, TOPAZ breaks up its water system pipe by Parker Central (Wells #6 – 8) and Parker South (Wells #1 – 2). These collectively amount to 17 miles of water pipe (mostly C900; older pipe is concrete pipe):

1. Wells #1 – 2: Roughly 2.0 miles in length
2. Wells #6 – 8: Roughly 15.0 miles in length

Seven pressure irrigation systems are supported by these Wells, collectively.

Specific Project Locations for SCADA install are as follows: Well #6: 1625 California Ave., Parker, AZ; Well #8: 709 Desert Ave, Parker AZ; Parker South Wells #1 and #2: 31315 Industrial Ln, Parker South, AZ.

Relationship with Reclamation

We maintain a great relationship with BOR, sending them a monthly report of our water consumption related to our authorized water rights to divert up to 630 acre-feet of Colorado River annually. We meet with them annually to discuss our water allocation based on annual findings. They also provide valuable resources for us when it comes to water conservation and assistance on TOPAZ water use.

TECHNICAL PROJECT DESCRIPTION

The project description should describe the work in detail, including project milestones and specific activities that will be accomplished. This description shall have sufficient detail to permit a comprehensive evaluation of the proposal.

Identify the problems and needs

The current state of Wells #1, #2, #6 and #8 require personnel to travel to a site to manually shut off and assess shortfalls in the system. Delayed response results poses a major logistical issue for the Town in terms of resources, where flooding, loss of valuable water resources, and reduced efficiency in the delivery can all occur. By installing a remote system for monitoring, this saves time and potentially a considerable amount of resource.

The proposed project will give TOPAZ staff remote multi-site contact and monitoring of water tank levels, fluoride levels (for treated water in Parker South), distribution line pressure and flow through the use of SCADA technology, utilizing desktop and mobile technology to provide immediate access to water distribution points if they are in fact overwhelmed or suffering critical loss of water efficiency. This will protect TOPAZ and the industrial, commercial and residential consumers who rely on water flow for their livelihood or business.

Maintenance/repair costs can be significantly reduced and in many instances avoided. Real-time access collected by TOPAZ personnel in an on-going fashion will maximize data collection which will lead to well-informed, data-driven decisions, ultimately increasing reliability of the water delivery systems.

» **Break-Down of SCADA Installations per Well**

Well #1 – Parker South Install

Communication will be established from the water tank meter to the existing Parker South Well #1. To accomplish this:

- Remote telemetry units (RTUs) will allow for the closing of the distribution tanks for the pipeline, as well as turning Wells and Treatment on and off. The issue with Parker South is that there is no employees nearby and has no oversight on the weekends.
- Existing monitoring software (Wonderware) will be interfaced with additional SCADA installations.
- Mounted cameras can be easily installed and mounted in future additions to the project.



Well #2 – Parker South Install

- RTU install will allow for quick access to water tank meter levels, distribution tanks and fluoride treatment on/off switch.
- Wonderware software will be installed and interfaced with sites on our network.
- Camera installation can be mounted at later date

Well #6 – Parker Central Install

Communication will be established with Well #7 (main distribution point) through SCADA install at Well #6. This includes:

- Remote telemetry units (RTUs) will allow for the closing of the distribution tanks for the pipeline, as well as turning Wells and Treatment on and off. Well #6 will continuously inform the flow and operation of Well #7.



- Existing monitoring software (Wonderware) will be interfaced with additional SCADA installations.
- Mounted cameras can be easily installed in future project additions.

Well #8 – Parker Central Install

Communication will be established with Well #7 (main distribution point) through SCADA install at Well #8.

This includes:

- Remote telemetry units (RTUs) will allow for the closing of the distribution tanks for the pipeline, as well as turning Wells and Treatment on and off. Well #6 will continuously inform the flow and operation of Well #7.
- Existing monitoring software (Wonderware) will be interfaced with additional SCADA installations.
- Mounted cameras can be easily installed and mounted in future additions to the project.



PROJECT MILESTONES

Milestones include time-sensitive project accomplishments in accordance with Timeline table in Evaluation Criterion C: (E.1.3.) to ensure compliance with schedule provided to BOR. Additional project milestones that address the comprehensive water efficiency needs of TOP and items in our WATER SYSTEM PLAN include successfully on-boarding Public Works staff with Wonderware access via desktop and mobile. Wonderware Software will be accessed only by staff who are authorized to oversee municipally-owned public space operations and have traditionally monitored Well tank levels, used for remote access and water efficiency assurance, as well as to prevent water loss. *All security protocol for the Town's operations will be followed and informational access will be structured and safeguarded under Project Lead.*

EVALUATION CRITERIA

E.1.1. Evaluation Criterion A – Project Benefits (35 points)

- » *Describe the expected benefits and outcome of implementing the proposed project. What are the benefits to the applicant's water supply delivery system? If other benefits are expected explain those as well.*

The proposed SCADA project will have indefinite positive impacts for TOPAZ, potentially inhibiting major water loss instances in the future and greatly improving our water efficiency and security system-wide. This will also support the safe water operations of the *Parker South* infrastructure as it comes online, ensuring continuous operations throughout its development and beyond.

Benefits of the proposed SCADA technology include:

- Remote access to systems: allows Public Works and associated staff to quickly dispatch any errors in Well water systems, thereby reducing potential damage caused to systems and environment by overwhelming amounts of water flow, loss in volume due to pipe breakage, etc.
- Real-time data acquisition: permits well-informed, data-driven decisions to be collected in real time by administrators and staff at Public Works, informing Town-wide residential and commercial consumer, irrigation and municipal water consumption. Will also inform intelligent system-wide water flow implementation across multiple Wells through efficient data collection and coordination efforts where needed.
- Reduced risk and costs: less resources expended monitoring, repairing, troubleshooting
- Remote measuring devices: conserves existing water supply in an already Drought-prone area
- Reduced or incidence of flooding, overflow: supports quality control and consistent operations to residential, commercial, industrial and municipal sources that rely on continuous water flow.
- Water Availability: conservation of existing water and uninterrupted water flow to service areas will increase confidence in developers, future residents, and prospective businesses that view TOPAZ as a seat of increased development, thereby providing equity to all residents and stakeholders.

The water line break, resulting in 100,000+ lost gallons of water over one weekend in *Parker South* is a major impetus of the proposed automation plan, where TOPAZ seeks to enter a new era of water-systems management and 21st Century technological advancement regarding a valuable and essential resource. Additional benefits of the proposed automated project is ensured flow of water during emergency situations,

E.1.2. Evaluation Criteria B: Planning Efforts Supporting the Project (35 points)

Describe how your project is supported by an existing planning effort.

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

Yes. In partnership with the Arizona Department of Water Resources, TOPAZ's Community Water System Plan identifies an inefficiency of communication between staff and water distribution points and regulatory systems. In times of emergency, there is an immense value in immediate response via obtaining control of overwhelmed water systems. By having an immediate, direct line of communication between systems and staff during times of emergency will allow for a more efficient flow of water, which results in considerable overall water resource conservation as well as preventing water losses. The proposed installation of SCADA technology achieves exactly this by installing flow meters and monitors over a 29.2 square mile area with limited staff resource for monitoring, allowing for emergency shut-off to ensure the continual flow of water supply to the TOPAZ. Real time data collection also takes places throughout the project, keeping all personnel with access on the same page in terms of emergency response, data-based decisions to ensure water flow to TOPAZ residential, industrial, commercial and municipal customers in an ever-growing La Paz County community.

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

The remote access, control and monitoring that is afforded by SCADA technology is of critical importance to TOPAZ, especially in light of a major water loss at *Parker South* in 2019. Conserving important water resources, as well as continually scanning low meters, future camera systems, and RTU's is at the core of the proposed SCADA install, ensuring TOPAZ's uniformly up-to-date Public Works personnel who can remotely communicating with the Town's water systems and each other, in order to mitigate loss, environmental impact, and system abnormalities.

Priority reasons include:

- Additional/Improved Conservation Program.
 - As outlined in our 2012 SYSTEM WATER PLAN in partnership with Arizona Dept. of Water Resources, additional conservation resources to help the TOPAZ manage water demand and consumption parallel to our growth is recommended. The SCADA implementation allows major improvement in water efficiency and therefore conservation.
- Preparedness/Drought Plan

- Though there are no major issues posed by drought at this time, preparedness for times of intense drought and limited water resources is advised in our Plan. The SCADA project allows preparedness and, in effect water security, by preventing additional losses and prompting immediate response when systems are in need of on-site repair.
- Population Growth
 - As Parker South becomes an increasingly sought-after community while development takes place, improved water systems allow us the capacity to support population growth here, as well as in Parker Central.

E.1.3. Evaluation Criterion C: Project Implementation (10 points)

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

TOPAZ sees a strong prospect in successfully implementing the SCADA automation project in a timely fashion as it is the permitting authority for water, environmental, and related construction. Upon award and completion of the WaterSMART contracts, immediate installation of the SCADA hardware and software can begin, since no permitting is required. TOPAZ estimates the total project period for installation will be 4-5 months in duration. Final reporting and project close-out will be communicated to BOR upon completion of installation at Wells #1, #2, #6 and #7. The estimated project schedule is below.

Estimated Project Schedule	
Milestone/Task	Estimated Completion Date
Authorization from TOPAZ	April, 2020 – prior to implementation
WaterSMART contract signed	August, 2020 – implementation begins
Site Preparation, Access to Contractors	September, 2020
Installation of SCADA Project	September 2020 – December, 2020
Final reporting and project close-out	January/March 2020

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

Building permits are not required of SCADA technology install.

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

All engineering and design work is performed by contracted **DeltaSE**, who is an expert and certified installation team.

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

No new policies are required to implement the proposed project, where Project Lead will implement already existing policies for operating municipal properties and systems.

E.1.4. Evaluation Criterion D: Nexus to Reclamation (10 points)

Describe the nexus between the proposed project and a Reclamation project or activity, including:

- » *Is the proposed project connected to a Reclamation project or activity?*

This SCADA Automation project addresses a number of priorities developed with Arizona Dept. of Water Resources within our shared SYSTEM WATER PLAN.

- » *Does the applicant receive Reclamation project water?*

TOPAZ receives water from the Colorado River Aquifer, interfacing monthly with BOR for diversion totals and continual monitoring.

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

The proposed Reclamation project is not located on a Reclamation facility.

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

No.

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

No.

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

Yes. Colorado River Indian Tribe (CRIT) accesses all of our services, parks, municipal buildings, and is a longtime partner and trusted neighbor of the TOPAZ.

E.1.5. Evaluation Criterion E— “Department” and BOR Priorities (10 points)

The TOPAZ SCADA Project fulfills the following priorities:

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

The TOPAZ SCADA Project takes a best practice, 21st Century approach to resource management and applies it to the most valuable resource in our service area, which is continuously drought-prone, and expected to worsen, fulfilling this Department and BOR priority.

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

The resources drawn from for the TOPAZ SCADA Project in terms of water supply, comes from uniquely American sources in our La Paz County desert, where active conservation is needed at all times for proper municipal functioning and our desert-based community. This project is essentially a water security project, fulfilling this Department and BOR priority.

- Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands;

TOPAZ’s entire town property is surrounded by land owned by CRIT, making us neighbors in terms of resources, services, operations and more for over a Century. Tribal families and members access our services year-round, and will undoubtedly access the new development of *Parker South*, where our SCADA project inherently fulfills our role as a responsible neighbor in terms of resource consumption and environmental offerings, fulfilling this Department and BOR priority.

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

The TOPAZ SCADA project is a modernization of wells that date back to the 1950’s in some cases, marking a major modernization to our public water system infrastructure, fulfilling this Department and BOR priority.

*The TOPAZ SCADA Project additionally fulfills the following **Reclamation Priorities:***

Increase Water Supplies, Storage, and Reliability under WIIN and other Authorities
Leverage Science and Technology to Improve Water Supply Reliability to Communities
Address Ongoing Drought
Improve Water Supplies for Tribal and Rural Communities

Environmental and Cultural Resources

(1) Will the 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.

There are no impacts to the surrounding TOPAZ or La Paz County environment with the proposed automation project. SCADA is a monitoring technology and will be installed as an upgrade to developed areas in *Parker Central* and *Parker South*.

(2) 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?

TOPAZ is not aware of any impacts concerning threatened or endangered species in this area. The project is completely non-invasive and poses zero negative environmental impact. Regardless, TOPAZ will continually monitor any potential impact to endangered species and habitats to our area.

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

The construction will take place in along the already installed and functioning TOPAZ water distribution lines and water tanks. There are no known wetlands in Parker, Arizona.

(4) When was the water delivery system constructed?

Water delivery systems were constructed, varying at each Well, from 1956 – 2003.

(5) Will the 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.

New SCADA technology will be added to existing irrigation systems operated by the TOPAZ. Manually operated systems will be replaced with RTU's for comprehensive monitoring, emergency-response and control within these systems.

(6) 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.

TOPAZ is not aware of any building, structures or features that would qualify.

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

TOPAZ is not aware of any impacts to or locations of archeological sites. An investigation will take place alongside all of our environmental processes.

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

No. The SCADA Automation system will pose a positive effect to low-income and minority populations who will see increased water efficiency and water security.

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

No.

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

No. In fact, by limited water loss from distribution pipes and flooding, we are thereby limiting the growth of noxious weeds or non-native invasive species who rely on pockets or water loss.

Required Permits or Approvals

Building permits are not required for the installation of SCADA technology in TOPAZ. The TOPAZ Public Works division possesses all rights to install and oversee the proposed project.

Official Resolution

The Official Resolution will be submitted to BOR by March 18, 2020 for file amendment.

Project Budget

FUNDING PLAN AND LETTERS OF COMMITMENT

Describe how the non-Federal share of project costs will be obtained.

Non-Federal project costs are available via the TOPAZ reserve monies, which the Town currently possesses in amounts to meet and exceed the amount required by BOR. Additional project costs are provided by Public Works oversight of the project implementation over the 4-5 months period.

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).

TOPAZ will use money from their own Town reserves account for their contribution.

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

- » The Project expenditure, amount, and date of cost incurrence:
Purchased Equipment
 - N/A – All existing systems are already constructed, only requiring the installation of SCADA systems.
 - Total Expenditure Amount: N/A
- » *Whether the expenditure is or will be in the form of in-kind services or donations*
N/A
- » *How the expenditure benefits the Project*
The equipment and water systems currently installed at each Well site allow for the seamless implementation of SCADA systems, thereby improving the efficiency of project delivery.

Describe any funding requested or received from other Federal partners. Note: other sources of Federal funding may not be counted towards the cost share unless otherwise allowed by statute.

N/A

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

No other requests for financing have been made. TOPAZ already has the funds for their cost-sharing portion of the project.

Summary of all funding sources. Denote in-kind contributions with an asterisk (*).

Funding Sources	Funding Amount
Non-Federal Entities	
Recipient Funding Pre-award Project (\$10,000) Cash (\$40,815)	\$50,815
<i>Non-Federal Subtotal</i>	\$50,815
Other Federal Entities	\$0.00
<i>Other Federal Subtotal</i>	\$0.00
<i>Requested Reclamation Funding:</i>	\$50,815
Total Project Funding	\$50,815

BUDGET PROPOSAL

Budget Item Description	Computation		Quantity Type	Total Cost
	\$/Unit	Quantity		
Salaries and Wages		1		\$10,000
Fringe Benefits				
Equipment				
Supplies and Materials				
Contractual/Construction				
Programming	-	-	-	\$27,441
Remote Telemetry Unit's	-	4	-	\$38,337
Electrical Sub	\$2,500	4	-	\$10,000
Engineering	-	-	-	\$3,900
Contingency	-	-	-	\$11,952
Total Direct Costs				\$101,630
Indirect Costs				\$0
Total Project Costs				\$101,630

*Project quote from DeltaSE is attached - See *Fee Proposal*.

BUDGET NARRATIVE

Salaries and Wages

\$10,000 – 0.25 FTE – Steve Ziegler, Public Works Director for TOPAZ – Project oversight for SCADA Project Install

Fringe Benefits

N/A

Travel

N/A

Equipment

N/A

Materials and Supplies

Material costs will be part of the contracted portion of the project.

Contractual

The contractual costs shown are estimates for each of the components to furnish and install all the equipment via **DeltaSE**, an approved contractor. See attached quote (**Fee Proposal**).

Environmental and Regulatory Compliance Costs

N/A

Other Expenses

N/A

Indirect Costs

N/A

Total Costs

TOPAZ Portion: \$50,815

Fed Portion: \$50,815

Total: \$101,630



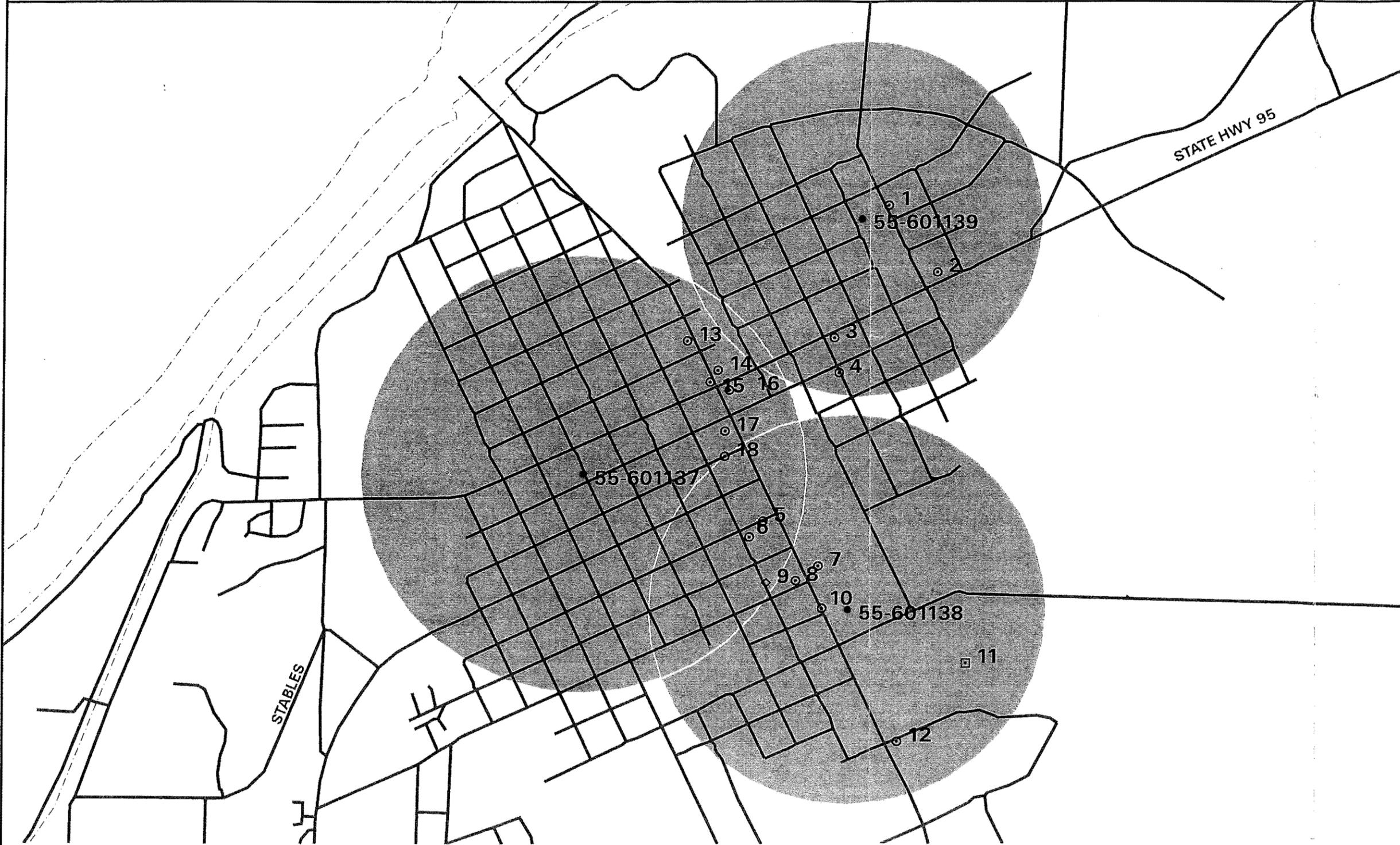
Parker



PARKER, TOWN OF

SOURCE WATER ASSESSMENT AREA

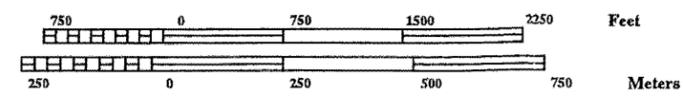
System ID Number 15013



ALU#	ALU Name
1	Town Of Parker Maintenanc
2	USA Gas & Snack Co Inc
3	'Woody's Exxon #107'
4	Imperial Machinery
5	Former UST Facility
6	Rebels Equipment Rental
7	Amerigas Propane L.P.
8	Circle K # 1483
9	HIGHLANDER DRY CLEANER
10	Sears Store
11	SALVAGED METAL AND FILL M
12	Former UST Facility
13	Discount Exxon
14	Chevron # 9-7264
15	Mobil/Former Merritt Stat
16	Terrible Herbst #201
17	
18	Parker Dam Central Office

- Agriculture
- △ Cemetery
- ◇ Dry Cleaner
- ▽ Golf Course
- Haz Material
- ▣ Landfill
- ▲ Marina
- ◆ Metal Plating
- ▽ Petroleum Product
- ⊙ UST
- ⊞ Foundary/Smelter
- ▲ Pesticide/Herbicide
- ◆ Mining
- ▽ Superfund
- ⊕ WWPT/Septic/Cesspool
- Water Supply Well
- ∨ Road
- ∧ River/Stream
- Source Water Assessment Area

AZ Dept. Environmental Quality
 Water Quality Division
 Drinking Water Section
 Date: 12/13/01



Well/ALU GPS data collected
 1/3/00 through 3/8/00

Parker South
This water plant site is 12 miles from Parker Central.

Legend
Parker



**Attachment A-1 - Project Location Aerial Map Photo
Parker South Wells #1, #2**



Fee Proposal

Date: 2/27/20
 Attn: Steve Ziegler
 Client: Town of Parker
 Address: 1314 11th Street
 City, State, Zip: Parker, AZ 85344
 Phone: 928-575-7840
 Fax:
 Email: pwdirector@townofparkeraz.us

The Client agrees that the technical methods, techniques and pricing information contained in any proposal submitted by DeltaSE pertaining to this project or in this Agreement or any addendum thereto, are to be considered confidential and proprietary, and shall not be released or otherwise made available to any third party without the express written consent of DeltaSE.

Fax Mail Email Courier Hand Delivery

Project Description: SCADA Improvements for Wells 6, 8 and Parker South
 DeltaSE Reference #: 2018.10.2462
 2018.10.2463
 2020.02.2592

Well 6

Programming Services (Task 300):	
Programming Tasks	\$7,113
Total Programming Services:	\$7,113
Procurement (Task 400):	
Estimated Cost of RTU	\$8,000
Total Estimated Procurement Service:	\$8,000
Electrical Subcontractor	\$2,500
	\$2,500
Engineering	\$1,200
	\$1,200
Sub Total	\$18,813
	\$18,813
15 % Contingency	\$2,822
	\$2,822

Well 6 Total Costs	\$21,635
---------------------------	-----------------

Well 8

Programming Services (Task 301):

Programming Tasks \$7,113

Total Programming Services: \$7,113

Procurement (Task 401):

Estimated Cost of RTU \$8,000

Total Estimated Procurement Service: \$8,000

Electrical Subcontractor \$2,500

\$2,500

Engineering \$1,200

\$1,200

Sub Total \$18,813

\$18,813

15 % Contingency \$2,822

\$2,822

Well 8 Total Costs \$21,635

Parker South

Programming Services (Task 302):

Programming Tasks \$13,215

Total Programming Services: \$13,215

Procurement (Task 402):

Estimated Cost of RTU and Instruments \$22,337

Total Estimated Procurement Service: \$22,337

Electrical Subcontractor \$5,000
\$5,000

Engineering \$1,500
\$1,500

Sub Total \$42,052
\$42,052

15 % Contingency \$6,308
\$6,308

Parker South Total \$48,360

- Lump Sum Fee
- Hourly, Time and Material Fee

Estimated Cost for Add On Items for Parker South		
Item	Description	Client Cost
1	Raw Water Tank Level Transmitter	\$ 2,070.00
1a	Labor for integrating the level	\$ 6,900.00
2	Well #1 and #2 Start/Stop Control	\$ 6,900.00
3	Chlorine, Fluoride Residual and pH Concentration Monitoring	\$ 5,750.00
4	PLC Hardware to implement #1 through #3	\$ 1,300.00

Scope of Services

PROGRAMMING SERVICES

Well 8 Services

- 1.0 Programming services will consist of PLC/RTU programming and SCADA HMI programming, and other services as described herein for the Well 6, Well 8 and RO Plant Parker South project located at the Town of Parker.
- 2.0 Programming services will be performed in accordance with the following bid documentation:
 1. Control Description supplied by the Town (Steve Ziegler) in 08/2018.
 2. Elyson's visit to Parker with Steve for Parker SouthProgramming Services outside the scope of this bid documentation will be performed at an additional cost.
- 3.0 The existing Well 8 will be started based on an operator selected flow setpoint from the distribution flowmeter. Well 8 is going to be used as the lag well in sequence with Wells 6 and 7. There will be an RTU cabinet supplied that will use a Phoenix Contact Radio to communicate between Well 8 and the Town's Water Pump House SCADA system. The Water Pump House PLC and SCADA system are to be modified to communicate and display the Well 8 Data as per the aforementioned bid documents to complete the SCADA system programming.
- 4.0 The existing Well 6 will be utilized as a lead well in the event that Well 7 isn't available to serve as a lead well. The operator will be able to select at the Pump House if Well 6 or Well 7 will be the primary lead well. Well 8 will serve as a lag well to whichever well has been selected as primary.
- 5.0 The Parker South RO Plant will have an M340 PLC in an RTU installed at the site. The RTU will communicate to the Parker Pump House via a cellular modem. The site will send reading from the Potable Water tank providing level in addition to a new distribution pressure transmitter to be added to the discharge potable line from the site. A signal splitter will be added to the existing effluent flow meter signal to provide a flow signal to the RTU. The RO system will be connected to the RTU which will be a shutdown alarm from the RO. There are no additional signals available from the RO system due to the age of the controller on the system.
- 6.0 Parker has also requested some alternate add ons to provide more data from the RO System. These additional items include:
 1. Raw Water Tank Level
 2. Well #1 Start/Stop over SCADA
 3. Well #2 Start/Stop over SCADA. DeltaSE has combined the two well control addition since it is more cost effective to perform this work at the same time.
 4. Control of the RO Feed Pumps including Start/Stop, monitor pressure and alternating the 3 pumps. This will take more investigation in order to accurately price the work involve so DeltaSE is not providing a price on this work at this time.
 5. Monitor RO System statuses. This will take more investigation in order to accurately price the work involve so DeltaSE is not providing a price on this work at this time.
 6. Monitor Chlorine Residual
 7. Monitor Fluoride Residual
 8. Monitor pH Concentration in the potable water. DeltaSE has combined the cost of monitoring the 3 analyzers since the cost to do them individually will be less cost effective.
 9. Delta will add these add ons in the pricing summary above. DeltaSE has provided a cost estimate for adding all the additional signals, with the exception of the RO System status signals and the RO Feed Pumps.

Responsibilities of Others

- 1.0 CLIENT will review and return the Functional Design Submittal (FDS) with approval and/or comments within two weeks of receipt. Programming services will not proceed until the FDS is approved.
- 3.0 CLIENT shall verify that all field wiring is installed and terminated at the PLC-based control panels, field instruments, and any other packaged control systems that will be integrated in to the plant SCADA system being programmed by DeltaSE, prior to scheduling DeltaSE personnel for initial system testing and startup.
- 4.0 The CLIENT shall allocate sufficient time in the project schedule for field wiring terminations, loop testing, calibration, and commissioning of instrumentation and PLC-based control panels prior to any scheduled startup and demonstration dates required by the Contract Documents. The main purpose of this time period is to allow DeltaSE personnel to assist with testing and commissioning of the PLC-based control panels that we will be programming on this project, before scheduling inspections by the Owner's Engineer or Representative, and before any required startup or demonstration listed in the Contract Documents.

Deliverables

- 1.0 Upon completion of our programming, DeltaSE will provide one (1) copy of the updated and backup HMI programming files on CD-ROM.

Procurement

1.0 DeltaSE will provide the following hardware and software (pricing shown under Procurement Services in the summary section):

Hardware:

Qty	Description
1	RTU Cabinet
1	Pressure Transmitter (Distribution Pressure, Parker South)
1	Level Transmitter (Potable Water Tank, Parker South)
1	Current Splitter (for splitting Parker South flow signal)

2.0 Procurement will be the lowest technically responsive bid plus the agreed upon markup.

Exclusions and Exceptions

1.0 DeltaSE will not obtain any permits.

2.0 DeltaSE's level of effort is limited to the aforementioned scope of services. Costs incurred due to conditions beyond DeltaSE's control may result in additional charges billed on a Time and Material basis.

3.0 Should a condition exist, at no fault of DeltaSE, that interrupts or prevents DeltaSE from providing contracted services, DeltaSE may cease work until the condition(s) are remedied. At the client's request, DeltaSE may provide assistance to remedy the delaying condition(s), charged on a time and materials basis.

4.0 Excessive work interruption(s) by others that delay the provision of contracted services by DeltaSE may result in additional service charges billed on a time and materials basis.

5.0 Shipping and sales tax are not included in the total estimated procurement service cost.

Billing Rates and Payment Terms

1.0 This agreement will automatically terminate on the 31st day, of December, 2020, unless renewed or extended in writing by both parties.

5.0 The lump sum pricing quoted in this proposal will be valid for all work performed through December 31, 2021. Work performed after this date will be subject to a 5% per year escalation rate.

Accepted for Client:

Signature: _____

Print name: _____



Town of Parker Arizona

Est. 1908

1314 11th Street Parker, AZ 85344

Phone: 928-669-9265

Fax: 928-669-5247

03/03/2020

US Dept of the Interior, Bureau of Reclamation

Re: Mandatory *Budget Information for Construction Programs* (SF-424C),

To Whom It May Concern,

This letter is to inform the Department that the SF-424C was filled out by our agency, and we populated the budget with figures from our **Budget Proposal** (page 19 of our attached, complete application). The architect fees are a conglomerate of professionally contracted Programming, Electrical Sub and Engineering line items, while the Equipment line item corresponds to the cost of RTUs, and the MISC line items corresponds to our Project Lead cost.

According to the BOR Financial Assistance Contact Matthew Reichert, this is an acceptable format. However, please feel free to reach out to us if you have any questions on the format of this budget.

Sincerely,

A handwritten signature in blue ink, appearing to read "Lori Wedemeyer".

Lori Wedemeyer
Town Manager, Town of Parker
mgr@townofparkeraz.us
(928) 669-9265