CITY OF FRESNO

application for the

PUBLIC LANDSCAPE WATER CONSERVATION PROJECTS

FRESNO COUNTY, CA

APPLICATION SUBMITTED TO THE
UNITED STATES BUREAU OF RECLAMATION
FOR A WaterSMART: WATER AND ENERGY
EFFICIENCY GRANT
FOR FISCAL YEAR 2017

(FUNDING OPPORTUNITY ANNOUNCEMENT NO. BOR-DO-17-F012)

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January 2017

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TECHNICAL PROPOSAL

1 . Executive Summary

(A) General Project Information

Proposal Name: Public Landscape Water Conservation Projects
Date: January 18, 2017
Applicant Name: City of Fresno
City, County and State: Fresno, County of Fresno, California

(B) Project Summary

The City of Fresno (City) is pursuing funding for projects that will provide water conservation on public landscape areas within the City of Fresno. Several locations of large irrigated turf that are within the City of Fresno have been determined as ideal locations for water conservation projects. The projects will provide water conservation through upgrading the current manually operated irrigation system to centrally controlled irrigation systems, as well as replacing existing sprinklers systems with more efficient drip and high efficiency sprinkler nozzle systems. The centrally controlled irrigation system will allow for daily evapotranspiration adjustments, and system alerts for breaks and leaks. The projects will provide needed water conservation within a community and area that has a critically overdrafted groundwater aquifer.

Table 1 - 2017 Funding Request Summary

Funding Source	Funding Amount
Non-Federal Entities	
City of Fresno	$300,000
Non-Federal Subtotal:	$300,000
Reclamation Funding:	$300,000
TOTAL PROJECT FUNDING	$600,000

(C) Project Duration and Estimated Completion Date

The project work associated with this grant will begin in October 2017 and will be completed in September of 2019. The anticipated timeline to complete the Project is consistent with the Technical Project Description and will meet the maximum length allowed.

(D) Federal Facility

The project is not located on a Federal facility.

TECHNICAL PROPOSAL

2 . Background Data

(A) Geographic Location

The City of Fresno, incorporated in 1885, is located in the Central San Joaquin Valley of California, approximately 170 miles south of the City of Sacramento, and 220 miles north of the City of Los Angeles. Fresno is the fifth largest city in California, has a population of over 531,000 people, and encompasses nearly 110 square miles. Fresno is bounded on the northwest by the San Joaquin River, approximately 10 miles downstream of Friant Dam, and is approximately 13 miles west of the Kings River. Please see Figure No. 1.

(B) Water Supply

The City's primary source of drinking water is groundwater. This supply is supported by 275 municipal water wells, and serves residential, industrial, commercial, and municipal customers. Groundwater accounts for 84% of the City's potable water supply. Surface water from the USBR Central Valley Project (CVP) makes up the remaining 16%. The City's underlying groundwater basin, the Kings Sub-basin, is in a condition of critical overdraft, as determined by the State of California.

The City receives surface water supply from the USBR CVP; the contract for 60,000 acre-feet of Class 1 water was renewed in 2005 through 2045, and subsequently converted to a Section 9(d) Contract in 2010 (2010 Urban Water Management Plan (UWMP) - City of Fresno's Water Supply). The surface water is supplied from Friant Dam (Millerton Lake) and conveyed via the Friant-Kern Canal and then through several Fresno Irrigation District (FID) owned and operated canals to the City's surface water treatment plant. The Class 1 water has been historically fairly reliable; however, the 2013-2014 and 2014-2015 water years saw a 0% percent allocation due to extended statewide drought which triggered senior riparian water right holders to call for delivery of their historic San Joaquin River water supply. Previously, the lowest allocation for this system was 25% in 1977, also due to a protracted drought.

(C) Water Delivery System

The City's water system is comprised of nearly 1,800 miles of water mains and includes approximately 126,000 residential, commercial, and industrial service connections.

(D) Energy Sources and Uses

The City operates wells and surface water treatment facilities that receive electric power from Pacific Gas and Electric. The cities overall energy use for its water supply is approximately 34,272,270 kWh/yr.

(E) Past Working Relationships with Reclamation

1. The City has had a Class 1 Contract for water from the Friant Division of the USBR CVP for decades, and has maintained a good working relationship with USBR for the use of its supplies. In 2010, the City renewed its contract with USBR and converted the supply to a Section 9(d) contract. In 2015, the City was a recipient of a Group II WaterSMART

Water and Emergency Efficiency Grant for its Friant-Kern Pipeline Project, which is installing 4.6 miles of 60-inch diameter pipe and a new turnout diversion structure, connecting the Friant-Kern Canal with the City's Northeast Surface Water Treatment Facility.

2. The City has been awarded a 2015 WaterSMART grant for $1,000,000 for construction of its Friant Kern Raw Water Pipeline that will provide water conservation and water quality benefits to the City. The grant is in the final stages of processing and the City is preparing for construction to be initiated in the spring of 2015.
3. The City was also awarded a 2016 WaterSMART grant for $300,000 for water conservation measures at local school district school sites. The grant was recently initiated and the City is progressing with the project on schedule.

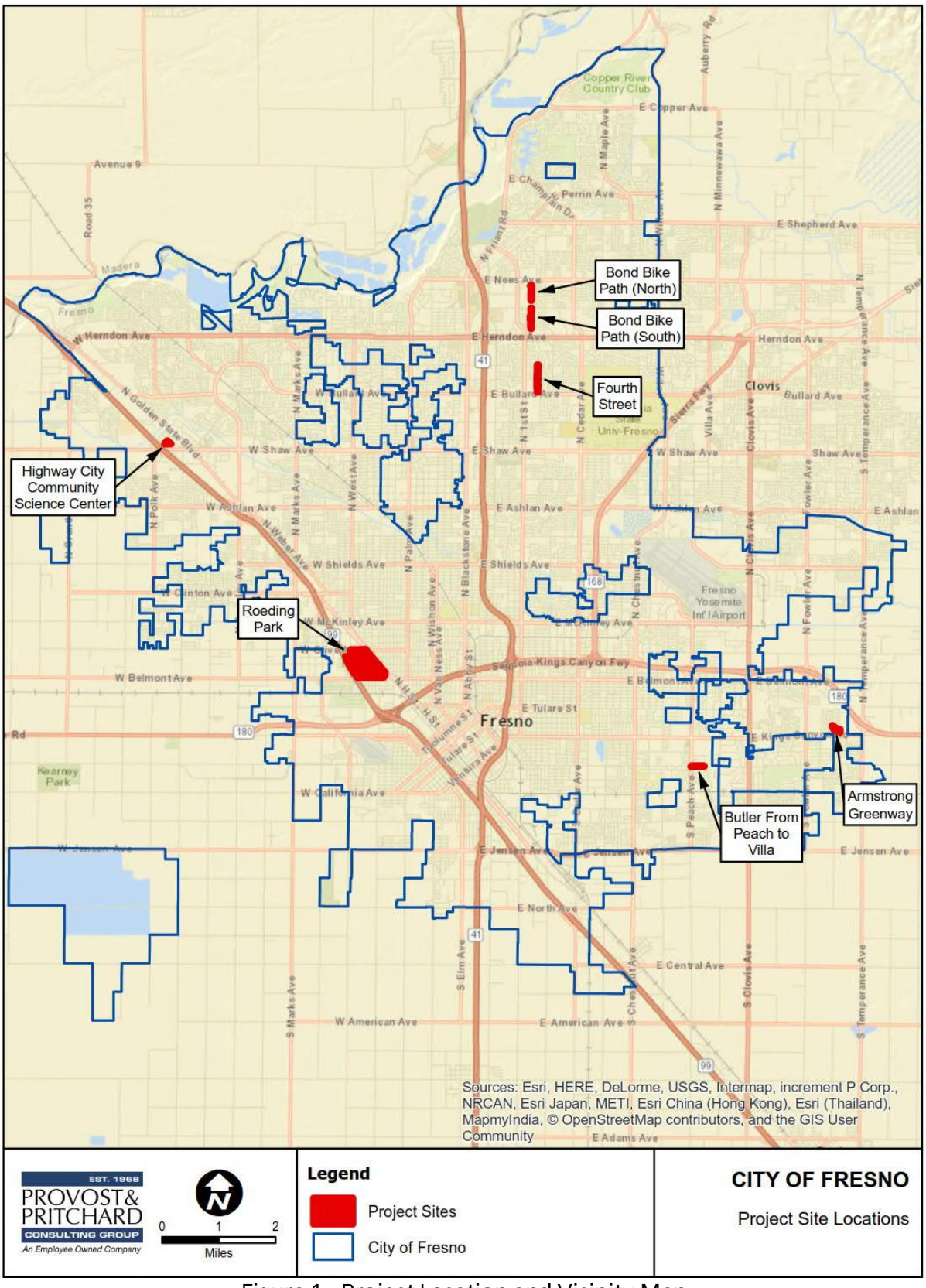

Figure 1 - Project Location and Vicinity Map

Figure 2 - Fourth St. Project Location

Figure 3 - Bond Bike Path (N) Project Location

Figure 4 - Bond Bike Path (S) Project Location

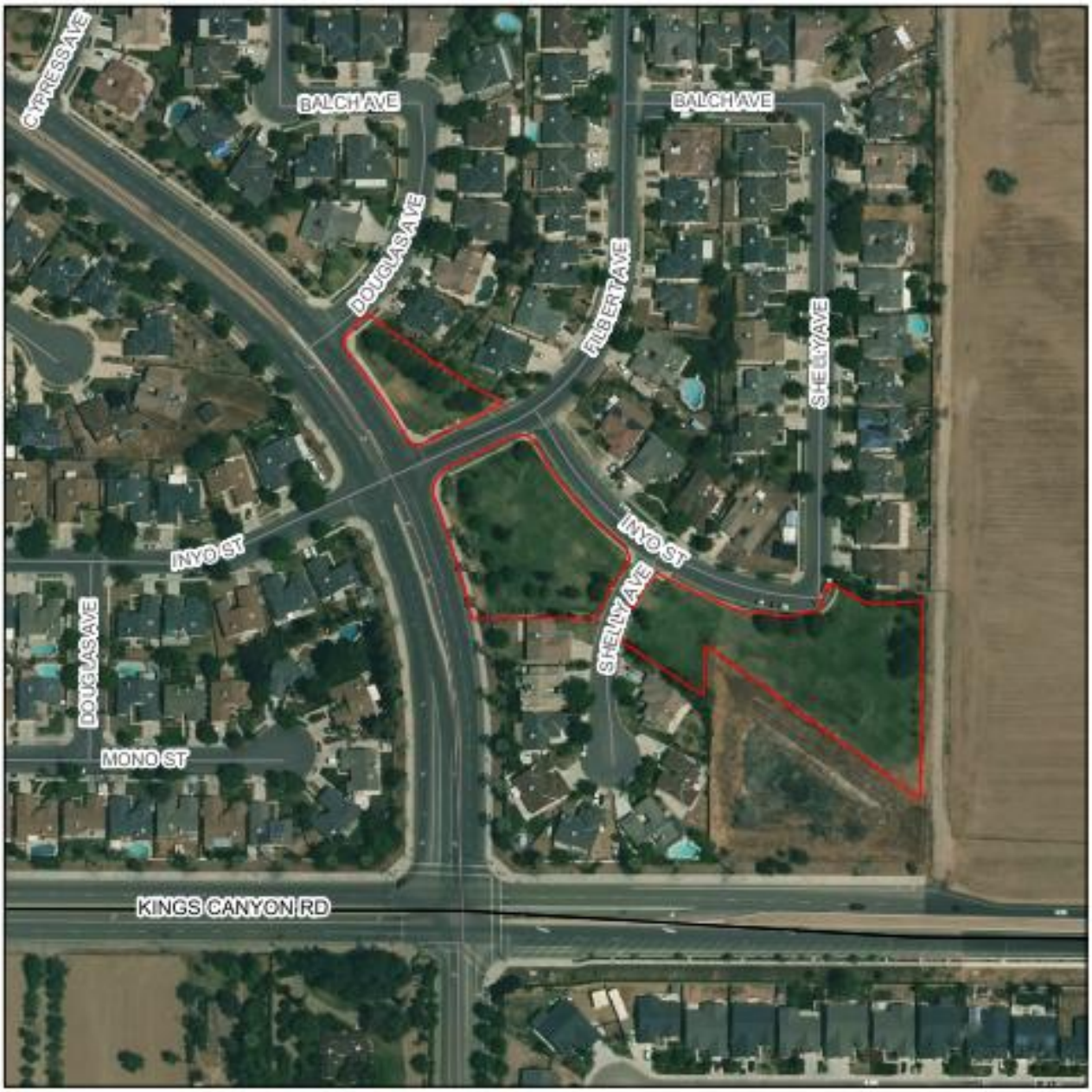

Figure 5 - Armstrong Greenway Project Location

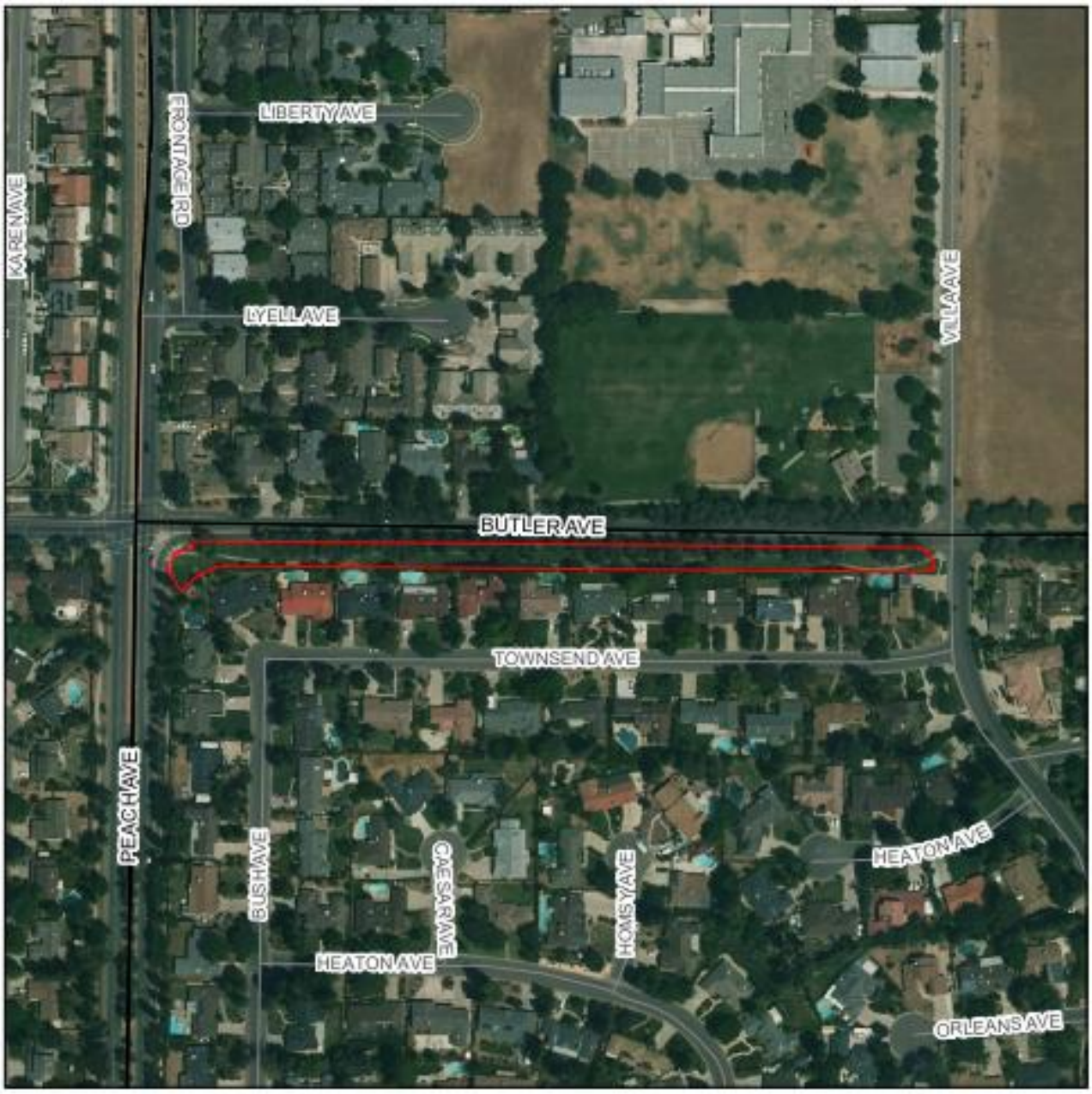

Figure 6 - Butler from Peach to Villa Project Location

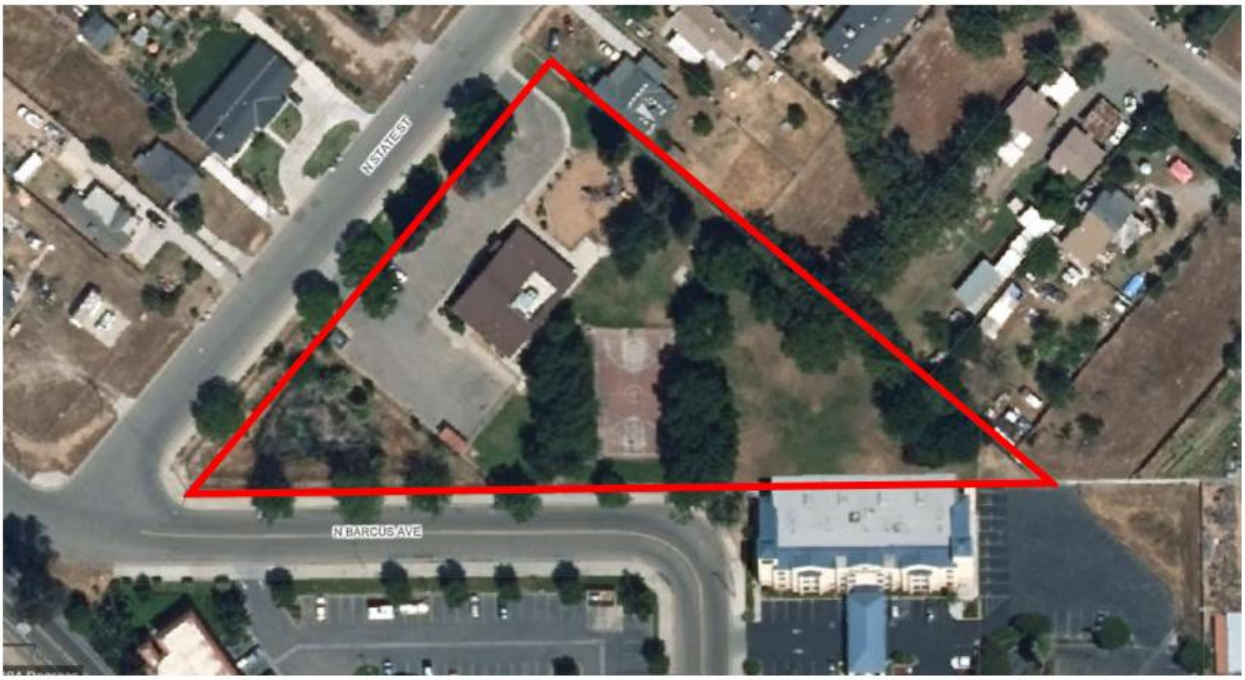

Figure 7 - Highway City Community Science Center Project Location

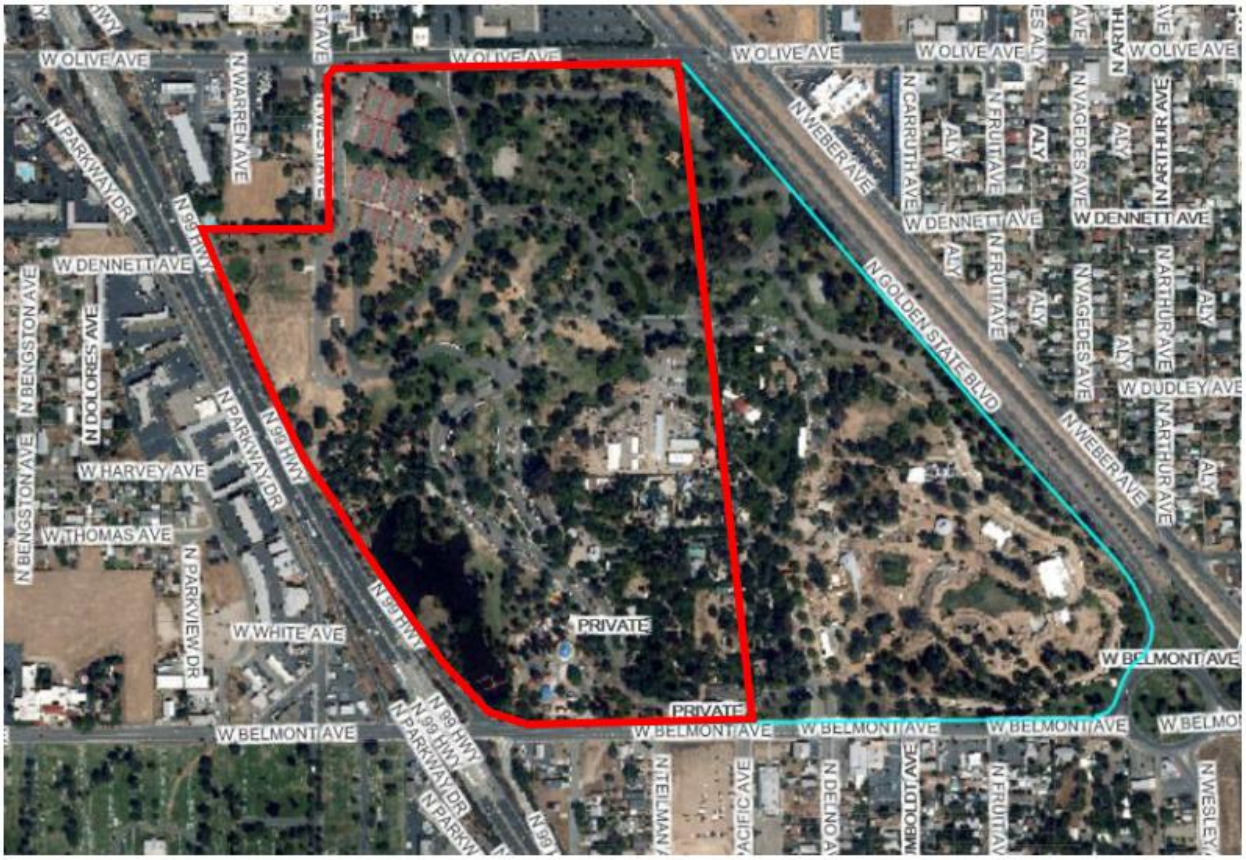

Figure 8 - Roeding Park Project Location

Technical Project Description

(A) Project Workplan

The project includes locations that would be upgrading the current manually operated irrigation systems to centrally controlled irrigation systems, as well as replace existing sprinkler systems with high efficiency sprinkler nozzles and drip irrigation systems. The following workplan has been developed to describe the work in detail, including specific activities that will be accomplished as a result of this project. The major project tasks include the following:

Task 1 – Project Administration

This task includes the project administration associated with the grant administration. This task includes items such as meetings, coordination with Reclamation and other agencies, overall project coordination, preparation of quarterly reports, final project report and all other reporting obligations in accordance with the grant contract requirements.

Deliverables

- Meeting minutes, quarterly, draft and final reports, and other deliverables as required.

Task 2 – Design Engineering

This task is included to perform the design engineering work for the irrigation system improvements and equipment. This task includes preparation of plans and specifications required for bidding of the construction improvements and completion of bidding. The project will be bid in accordance with all applicable district, state, and federal requirements for construction of this type of project. Bid documents will be opened and the contract will be awarded to the lowest responsible bidder. Controller equipment may be purchased by the City directly and installed by City operations staff. The improvements are expected to be exempt under the CEQA as the project is replacement of existing equipment and facilities. This task includes completion of CEQA exemption documents, as well as assistance with USBR preparation of NEPA documents.

Deliverables

- Plans and Specifications
- CEQA Exemption documents

Task 3 – Construction

This task includes construction of all project improvements including labor, equipment and material costs. The selected contractor will be responsible for all site work and construction efforts under this task, including but not limited to construction of the installation of smart controllers, sprinklers, and operational startup performance and testing. A complete list of the requirements of the contractor will be identified in the project plans and specifications that will be completed under Task 2. The City of Fresno anticipates awarding each construction project to one contractor who will be required to perform all activities identified in the plans and specifications. The City may utilize Local Conservation Corp for some of the improvements at park sites.

Deliverables:

- All construction activities and a completed and operational facility

Task 4 – Construction Administration

This task includes construction administration, construction observation, and construction management. This task includes all required construction contract administration, observation, inspection, labor compliance and management efforts for the project. Each department will be responsible for their own contract management, daily inspection and administration requirements. Cost for department staff time is not included as cost share. The departments anticipate utilizing their design engineer/consultant to assist with response to Requests for Information (RFIs) and review of submittals associated with the project equipment and materials. Cost for the engineering consultant's time is included as cost share.

Deliverables:

- Construction inspection reporting and conformance of completion in accordance with construction documents.

(B) Project Schedule

The duration of the project will be two years and will be complete by September 2019. A Gantt chart schedule for the project is included as Attachment A. The schedule shows the major tasks, milestones, and major deliverables. The schedule tasks are consistent with those used in the Work Plan and Budget. The schedule is based on the time required for completion of similar projects.

3 . Evaluation Criteria

(A) Evaluation Criterion A: Quantifiable Water Savings

(i) Describe the amount of water saved. (AF/yr)

Water use for irrigation of large irrigated turf within the City will be reduced, because current irrigation systems are manually operated and do not adjust to atmospheric conditions. This method over-irrigates the turf. The project will provide new automated high efficiency sprinkler systems with smart controllers to as much as 120 acres of turf and landscape area. City water records indicate use of 3 to 4 af/acre/yr (or higher) at sites that do not have the proposed systems. The new systems will irrigate as needed based on atmospheric conditions, delivering water as needed for the turf, which is estimated to be approximately 2.67af/acre/yr. Conservatively assuming a reduction of 0.33 af/acre/yr (from 3 to 2.67 af/acre/yr) on 120 acres, the project will conserve an estimated 40 af/yr.

(ii) Where is the water that will be conserved currently going? (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground?)

The water that will be conserved is currently being delivered by the City to the public use sites where the proposed project improvements will be made.

Landscape Irrigation Measures: Smart Irrigation Controllers and High-Efficiency Nozzles

(i) How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.

Water use for irrigation of large irrigated turf within the City will be reduced, because current irrigation systems are manually operated and do not adjust to atmospheric conditions. This method over-irrigates the turf. The project will provide new automated high efficiency sprinkler systems with smart controllers to as much as 120 acres of turf and landscape area. City water records indicate use of 3 to 4 af/acre/yr (or higher) at sites that do not have the proposed systems. Table 2 below indicates that the calculated ET in the area is estimated to be 2.67 ft, which amounts to 2.67 af/acre/yr. The new systems will irrigate as needed based on atmospheric conditions, delivering water as needed for the turf, which is estimated to be approximately 2.67 af/acre/yr. Conservatively assuming a reduction of 0.33 af/acre/yr (from 3 to 2.67 af/acre/yr) on 120 acres, the project will conserve an estimated 40 af/yr.

Table 2 - Evapotranspiration

Turf Evapotranspiration for Fresno Area													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Fresno ETo (in)	0.04	0.07	0.11	0.17	0.22	0.26	0.26	0.23	0.18	0.12	0.06	0.03	
Kc Turf	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Days	31	28	31	30	31	30	31	31	30	31	30	31	
Etc (calculated)	0.744	1.176	2.046	3.06	4.092	4.68	4.836	4.278	3.24	2.232	1.08	0.558	32.022 in
												Total Demand =	2.67 ft
Notes: Data from "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California", UCCE and DWR, Aug 2000.													

(ii) Was historical water consumption data evaluated to estimate the percent reduction in water demand per unit area of irrigated landscape? If so, did the evaluation include a weather adjustment component?

Limited historical data is available and only for some of the anticipated project sites as the City has only recently metered deliveries to some of the sites proposed. During recent drought conditions and mandatory watering restrictions, deliveries were reduced below typical average annual usage so the data available is not believed to fully represent estimated usage. City records indicate use of 3 to 4 af/acr/yr (or higher) at City-owned large irrigated turf.

(iii) What types (manufacturer and model) of devices will be installed and what quantity of each?

Toro Sentinel Water Management System and Toro P-220 Scrubber Series Valves or equivalent.

(iv) Will the devices be installed through a rebate or direct-install program?

No. The City will purchase the devises and they will be installed as part of the construction improvements.

(v) Will site audits be performed before and after installation?

Yes, pre-construction audits will be performed at the proposed project sites. Each proposed site is metered and deliveries are documented by the City's automatic meter reading system and verified by operational staff. After completion of the project, meter readings will be similarly recorded and compared to pre-construction readings.

(vi) How will actual water savings be verified upon completion of the project?

Meter readings before and after installation will be compared to document the total annual water conservation savings.

(B) Evaluation Criterion B: Water Sustainability Benefits Expected to Result from the Project

(i) Describe in detail where the conserved water will go and how the conserved water is expected to increase water sustainability.

The conserved water will stay in the groundwater aquifer. The project will reduce the overall demand that the City system has to deliver to the project sites, reducing the overall groundwater pumping that the City has to do to meet demand.

(ii) Will the project commit conserved water to instream flows?

No, the proposed projects will not commit conserved water to instream flows.

a. If no:

- *Is there a specific water supply sustainability concern in the region? What factors are contributing to the concern? Please include a description of*

the impacted geographic area and stakeholders, the partners that are collaborating to resolve the concern, and any other applicable information.

The project sites are located in California's Central Valley and have been highly impacted by the drought. As drought conditions have continued to worsen in California, the State of California has issued a mandate in 2015 to reduce municipal water use in the City of Fresno by 28 percent. This has led to City of Fresno residents to cut back or eliminate water usage for lawns, some even converting lawns into drought tolerant landscapes, along with taking additional measures to help meet this goal. Also with the drought, groundwater levels are low and state wide sustainability is trying to be reached. In September 2014, the State of California passed Senate Bill 1168, Assembly Bill 1739, and Senate Bill 1319, which are collectively known as the Sustainable Groundwater Management Act. These bills impose mandates for sustainable groundwater management on local agencies in high- and medium-priority groundwater basins, and require essentially no long-term depletion of aquifers. The project will help to meet the goal by reducing the amount of groundwater pumping. All the Groundwater Sustainability Agencies within the basin are working together to produce a Groundwater Management Plan in order to resolve the groundwater supply sustainability issue within the area.

- *How will the proposed project help to address that concern? Will water conserved through the project result in reduced diversions or be made available to help alleviate water supply shortages due to drought, climate variation, or over-allocation?*

  The proposed projects will help alleviate water supply shortages due to drought because the new irrigation systems will use less water, therefore reducing the amount of groundwater pumping. Also, the water being used at the project locations will be more beneficially used as well as used more efficiently. The projects will provide three major benefits: 1) improve groundwater supply to make available for drought years; 2) improve water management, and 3) reduce dependence on groundwater. These benefits will all help make water available for drought years and to alleviate water supply shortages.

  - Improve Groundwater Supply: The project will reduce the use of groundwater by reducing usage on large irrigated turf areas, thereby improving the groundwater supply reliability for drought years.
  - Improve Water Management: The Project will convert irrigation systems on public landscapes, improving the use of City provided potable water used for irrigation of large irrigated turf areas.
  - Reduce Dependence on Groundwater: As mentioned, the

proposed improvements for the project sites will reduce groundwater use, thereby helping to reduce the dependence on groundwater within an already overdrafted basin by the amount of water conserved.

- *Will the project make additional water available to Indian tribes, and/or rural or economically disadvantaged communities)? If so, please explain.*
  Yes. The projects will benefit the City of Fresno which, as a whole, is classified as a disadvantaged community using both Federal and State of California measurements. Using median household income (MHI) figures compiled by the U.S. Census Bureau, Fresno's MHI is $42,015 (2014 estimate), which is 68.77% of the State of California's MHI of $61,094 (2014 estimate) and 79.2% of the U.S. MHI of $53,046 (2009-2013 average). Using unemployment rate figures compiled by the California Employment Development Department (EDD) and U.S. Bureau of Labor Statistics (BLS), Fresno's unemployment rate is 9.9% (November 2015, EDD), which is 173.68% of the State of California's 5.7% rate (November 2015, BLS), and 198% of the U.S. unemployment rate of 5% (November 2015, BLS).

- *Will water conserved through the project help to address water supply sustainability in a way not listed above?*
  These projects will help to provide a more reliable water supply for the City who is a Friant Contractor partially responsible for supplying water to the SJRRP. By reducing demand on our area's already-overtaxed groundwater, we are also preserving its quality. The California Water Action Plan, released in January 2014 by California Governor Jerry Brown, states that the supply groundwater and the quality of groundwater recharge are interconnected, "Moreover, we must better manage our groundwater basins to reverse alarming declines in groundwater levels. Continued declines in groundwater levels could lead to irreversible land subsidence, poor water quality, reduced surface flows, ecosystem impacts, and permanent loss of capacity to store water as groundwater." (page 7 of the CWAP, http://resources.ca.gov/docs/california_water_action_plan/Final_California_Water_Action_Pla_n.pdf). The positive impact of the Project, in combination with other groundwater preservation efforts, large and small, will work to ensure the future stability and sustainability of a critical water supply for the fifth largest metropolitan area in California.

(C) Evaluation Criterion C: Energy-Water Nexus

Subcriterion No. C.2 Increasing Energy Efficiency in Water Management

(i) Describe any energy efficiencies that are expected to result from implementation of the

water conservation or water management project (e.g. reduced pumping)
The project will utilize smart controllers and high efficiency equipment to eliminate over irrigating the turf areas, therefore reducing the amount of water pumped and less energy used.

(ii) Please provide sufficient detail supporting the calculation of any energy savings expected to result from water conservation improvements. If quantifiable energy savings are expected to result from water conservation improvements, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.
As noted the project will conserve 40 af/yr. The project will reduce how much water is delivered through the City's system. The project will utilize smart controllers and high efficiency equipment. Water deliveries and energy usage will be monitored. Less energy will be used because less water will be pumped. To estimate the energy conserved, the amount of energy used to pump the amount of water conserved from the City's groundwater wells was calculated. The project will conserve approximately 15,080 kwh/yr. Table 3 below shows the calculation of energy conserved.

Table 3 - Energy Savings Calculation

Current Energy Usage	
Annual Energy Utilization from Groundwater Pumping	
Amount of Water Conserved (not pumped)	40
Operational Duration (Days)	300
Offset GW Pumping (GPM)	30
Lift (ft of head)	120.0
Drawdown (ft of head)	40.0
System Losses (ft of head)	0.0
Well Discharge Pressure (ft of head)	127.1
Total Dynamic Head (ft of head)	287.1
Pump Efficiency (%)	82
Premium Efficiency Motor - Motor Efficiency (%)	95
Input Power (kW)	2.1
Power Utilization (kWh)	15,079.7

(iii) Please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements?
The project locations have pumping facilities but do not have smart controllers or high efficiency nozzles. The City pumping system will deliver less water because the projects will conserve water that will no longer have to be pumped because the site demand has been reduced.

(iv) Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.
The energy savings estimates are from the reduced groundwater pumping of the City.

(v) Does the calculation include the energy required to treat the water?
No. The energy calculation was conservatively calculated, not including any costs for wellhead treatment at City well stations which varies by location and treatment requirements.

(vi) Will the project result in reduced vehicle miles driven, in turn reducing carbon emissions? Please provide supporting details and calculations. Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).
Yes. Several of the projects include central irrigation control improvements which will allow remote changes to irrigation controllers reducing visits to the site to make controller changes.

(D) Evaluation Criterion D: Addressing Adaptation Strategies in a WaterSMART Basin Study

(i) *Identify the specific WaterSMART Basin Study where this adaptation strategy was developed. Describe in detail the adaptation strategy that will be implemented through this WaterSMART Grant project and how the proposed WaterSMART Grant project would help implement the adaptation strategy.*
The WaterSMART Basin Study is titled "Sacramento and San Joaquin Rivers Basin Study" and it outlines seven adaptation strategies.

One of the adaptation strategies that will be implemented through this project is the "Regional Self-Reliance" strategy. Through this project, the region will be able to improve water use efficiency and increase the amount of groundwater recharge without affecting CVP and SWP project operations by increasing supply available for deliveries.

Another adaptation strategy that will be implemented through this project is the "Least Cost" strategy. This project aims to improve system operations and promote actions that provide additional yield efficiently. Water use efficiency is a main product from the completion of these projects as well as increased groundwater recharge.

Also, parts of the "Water Action Plan" strategy will be implemented through these projects. The 2016 California Water Action Plan outlines 10 actions that will help reach sustainability and the proposed projects will contribute to the following six actions:

1. Make conservation a California way of life
2. Increase regional self-reliance and integrated water management across all

levels of government
3. Manage and prepare for dry periods
4. Expand water storage capacity and improve groundwater management
5. Provide safe water for all communities
6. Increase operational and regulatory efficiency

(ii) Describe how the adaptation strategy and proposed WaterSMART Grant project will address the imbalance between water supply and demand identified by the Basin Study.
The study highlights the increasing demand of water and the lack of supply but the proposed projects will help to diminish these imbalances. The projects will help to provide a more reliable water supply for the City of Fresno by reducing the demand of the project landscapes.

(iii) Identify the applicant's level of involvement in the Basin Study (e.g., cost-share partner, participating stakeholder, etc.).
The City is a member of the Friant Water Authority who is a participating stakeholder in the study.

(iv) *Describe whether the project will result in further collaboration among Basin Study partners.*
The Project will be publicized to a variety of audiences: in water plan annual reports, newsletters, websites, with news releases to media and to professional associations of other cities, special districts, and water agencies. Such targeted exposure could prompt other public agencies to explore potential similar groundwater-saving projects in their own areas, using the surface water conversion model. Public agencies all across the State of California could see announcements of, and stories about, the proposed project.

(E) Evaluation Criterion E: Expediting Future On-Farm Irrigation Improvements
This project is not an on-farm irrigation improvement project.

(F) Evaluation Criterion F: Implementation and Results
Complete copies of the reports reference below are available upon request.

Subcriterion No. F.1 Project Planning:

(i) 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.
The Sacramento and San Joaquin Rivers Basin Study was released in March 2016 and the project location is within the study's boundaries.

(ii) Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, Systems Optimization

Review, or other planning efforts done to determine the priority of this project in relation to other potential projects.

This project is consistent with USBR's Water management Goal Investment Strategy Final Report (March 2015) for the San Joaquin River Restoration Program (SJRRP). The Investment Strategy identifies projects that could reduce the impacts to the Friant Contractors from the release of San Joaquin River Restoration flows, which this project will do for the City of Fresno. Also, the Groundwater Sustainability Agencies within the area are currently working on a SGMA Groundwater Sustainability Plan for the basin that outlines the methods and procedures that will lead the area to sustainability over the next years. The proposed projects follow the methods and procedures in the plan by reducing the amount of groundwater pumping to help the area achieve sustainability.

(iii) 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(s).

The projects meet the Investment Strategy goal of reducing impacts to Friant Contractors by conserving water and reducing demand that the City is obligated to meet, helping the City meet its obligations under the SJRRP. Also, these projects would help counteract groundwater pumping within the area to reach sustainable groundwater levels outlined in the area's SGMA Groundwater Sustainability Plan.

Subcriterion No. F.2 Support and Collaboration

(i) Describe the extent to which the project garners support and promotes collaboration.

These projects gain support and promote collaboration between various departments within the City of Fresno. The Department of Public Utilities is the applicant and is responsible for water supply delivery within the City to the proposed project sites. The project involves sites maintained by two different departments within the City; the Department of Public Works who maintain the greenways, and the Department of Parks, After School, Recreation and Community Service (PARCs) who maintains the park sites included in this project. The City plans to work with Tree Fresno to help educate the communities about proper tree planting. The City also is promoting better landscape irrigation methods and ideas for homes within the areas of the projects. The City may utilize the Local Conservation Corp for some of the improvements at park sites. The West Fresno Resource Center operates the community center at one of the park sites that will have irrigation improvements, and the irrigation system will serve as a demonstration to nearby residents.

(ii) *Does* the project promote and encourage collaboration among parties?

Yes; the project promotes and encourages collaboration between City departments and allows the City to demonstrate water conservation to residents and stakeholders at its facilities.

(iii) Is *there widespread support for the project?*

Yes; there is support for the project as evidenced by the letters of support for the project (see Attachment B). The project locations are spread over the City of Fresno.

(iv) What is the significance of the collaboration/support?

The significance of the collaboration and support is that the City is leading the way to better landscape irrigation management and acting as an example for the its residents, local stakeholders and surrounding communities to move towards sustainability.

(v) Will the project help to prevent water-related crisis or conflict?

Yes; the projects will help reduce the impact on the already overdrafted aquifer and help allow the City to meet its obligations to provide water supply as part of the SJRRP.

(vi) Is there frequently tension or litigation over water in the basin?

The SJRRP is a direct result of a Settlement reached in September 2006 on an 18-year lawsuit to provide sufficient fish habitat in the San Joaquin River below Friant Dam near Fresno, California, by the U.S. Departments of the Interior and Commerce, the Natural Resources Defense Council (NRDC), and the Friant Water Users Authority (FWUA). The Settlement received Federal court approval in October 2006. The groundwater basins that the District and the Friant system overlay are critically overdrafted and the recent Sustainable Groundwater Management Act requires the region to meet sustainable standards. This legislation has and will increase tensions and demand for available supplies as groundwater extraction is reduced.

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

Yes, the projects promote better landscape irrigation methods and water conservation for the City, its residents and nearby stakeholders. The surrounding communities could follow the City's lead by implementing similar methods on their landscapes.

Subcriterion No. F.3 Performance Measures

(i) Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (i.e., water saved or better managed, energy generated or saved).

Meter readings from before project completion will be compared to meter readings after project completion.

(G) Evaluation Criterion G: Additional Non-Federal Funding

The projects include non-Federal funding of 50% of the project costs. The City of Fresno will contribute the cost-share of the funding.

The total local funding provided =

$$\frac{\text{Non-Federal Funding}}{\text{Total Project Cost}} = \frac{\$\,300{,}000}{\$600{,}000} = 50\%$$

(H) Evaluation Criterion H: Connection to Reclamation Project Activities

(i) How is the proposed project connected to a Reclamation project activities?

The City has a USBR CVP Friant Division contract and is part of the SJRRP. The projects will conserve water use within the City thereby reducing demands on the City's overall supply, including its CVP supply.

(ii) Does the applicant receive Reclamation project water?

One of the City's primary water supplies is a 60,000AF CVP Class I Contract (No. 14-06-200-890 ID) administered by USBR.

(iii) Is the project on Reclamation project lands or involving Reclamation facilities?

No, the project is not on Reclamation project lands and does not involve Reclamation facilities.

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

Yes. The projects are located within the CVP's Friant Division where the primary facility is the Friant Kern Canal. The project is within the San Joaquin Rivers water Basin, which had Basin Study performed and was completed in March 2016. Also, the project locations are in a basin that is highly influenced by SGMA Regulations.

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

The projects will directly reduce demands of the City, a Friant-Kern canal contractor, thereby reducing the demand on, and extending water supply available of, the City's Class 1 Friant supply.

(vi) Will the project help Reclamation meet trust responsibilities to Tribes?

No, the projects will not help Reclamation meet trust responsibilities to Tribes.

PERFORMANCE MEASURES

See Part 3 of Section F: Implementation and Results, for specific information on performance measures.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

(i) Will the proposed project impact the surrounding environment (i.e., 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.

Minimal ground disturbing activities will occur in the installation of the new sprinkler systems and controllers. Compliance with San Joaquin Valley Air Pollution Control District Rules and Regulations is required and will be used to minimize any potential dust impacts to the area. Any potential impacts to animal species will be temporary and minimal. The access and availability of these areas will remain open space for wildlife after all of the construction is complete. Therefore the construction of project facilities will not significantly impact the environment.

(ii) 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?

It is not anticipated that the Project would affect any endangered or threatened species near the Project.

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

No, the project sites are existing public use sites.

(iv) When was the water delivery system constructed?

The existing water delivery system was constructed in the 1960's.

(v) Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

The projects will not result in any modification of, or effects to, a USBR or surface water irrigation system. The projects involve the removal of turf and upgrading irrigation systems on existing developed public use sites.

(vi) Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

There are no known buildings, structures or features listed on the National Register of Historic Places within the project areas. Archaeological and historical investigations for the Project will be conducted under Section 106 evaluation under NEPA.

(vii) Are there any known archeological sites in the proposed project area?
The public use sites are existing and developed and no known archeological sites are in the project areas. See note above.

(viii) Will the project have a disproportionately high and adverse effect on low income or minority populations?
The projects will not have a disproportionately high or adverse effect on low income or minority populations.

(ix) Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?
The project locations are existing developed public use sites. There are no known Indian sacred sites or tribal lands in the project areas so no adverse impacts to tribal lands are anticipated.

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

LETTERS OF PROJECT SUPPORT

The City has confirmation from the Fresno Tree Fresno, and the West Fresno Family Resource City who is the Maxie L. Parks Community Center non-profit partner of their interest and commitment to implementing water conservation projects. Attachment B includes letters from each.

REQUIRED PERMITS OR APPROVALS

Permits and approvals anticipated for the Project are discussed below.

National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA). Environmental documents for the Project would be prepared for compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The projects are anticipated to be exempt under both CEQA and NEPA.

Construction Document Approvals/Permits. The construction documents will be reviewed and signed by each required City department. City electrical permits will be obtained.

Indirect Source Review. The projects will consider an Air Impact Assessment to the San Joaquin Valley Air Pollution Control District (SJVAPCD).

Dust Control Plan. Permits from the San Joaquin Valley Air Pollution Control District (Dust Control Plan) may be required if the project limits disturbed are over 5 acres. Some of the project locations will require a Dust Control Plan.

Storm Water Pollution Prevention Plan. A Storm Water Pollution Prevention Plan may be needed for the projects since there is a 1 acre disturbed area threshold. The Contractor will be required to prepare and submit the plan before construction. May only have to submit a waiver.

OFFICIAL RESOLUTION

Attachment C includes the draft resolution authorizing the preparation of this application and funding for the cost share. This resolution is scheduled to be adopted at the February 2, 2017 Council meeting.

PROJECT BUDGET

1 . Funding Plan and Letters of Commitment

(i) *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).*

Each department will provide the cost share for its respective projects. Each department has sufficient reserves to pay for their cost share. Project construction costs will be funded for the Department of Public Works from Community Sanitation Utility Fees, and for the and Department of Parks, After School, Recreation and Community Services projects from Proposition 1C Funds and General Funds. Final authorization for release of construction funding will come upon completion of the plan preparation and project bidding when the construction contract award is made.

(ii) Describe any costs incurred before the anticipated project start date that you seek to include as project costs.

The City of Fresno will not request reimbursement for any in-kind costs as part of these projects.

(iii) Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.

The project funding partners include the Department of Public Works and the Department of PARCS.

(iv) Describe any funding requested or received from other Federal partners.

There are no other received or requested funding from other Federal partners for the projects.

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

There are no pending funding requests for the projects.

Table 4 - Summary of non-Federal and Federal Funding Sources

Funding Sources	Funding Amount	Percentage
Non-Federal Entities		
Department of Public Works and Department of PARCS	$300,000	50%
Non-Federal Subtotal:	$300,000	
Other Federal Entities	N/A	
Requested Reclamation Funding:	$300,000	50%
Total Project Funding:	$600,000	100%

Table 5 - Funding Group II Funding Request

Funding Group II Request		
	Year 1 (FY2017-18)	Year 2 (FY2018-19)
Funding Request	$150,000	$150,000

2 . Budget Proposal

Below is a budget proposal for the Project. Copies of sample costs for similar projects are included in Attachment D.

Table 6 - Funding Sources

Funding Sources	Percent of Total Project Cost	Total Cost by Source
Recipient Funding	50%	$300,000
Reclamation Funding	50%	$300,000
Other Federal Funding	N/A	
Totals	100%	$600,000

Table 7 - Budget Proposal

Budget Item Description	Computation		Recipient Funding	Reclamation Funding	Total Cost
	$/Unit	Qty			
Salaries/Wages					
Fringe Benefits					
Travel					
Equipment					
Supplies/Materials					
Contractual/Construction					
Contract A – Tasks 1, 2 and 4	$24,000		$12,000	$12,000	$24,000
Contract B – Task 3 Construction	$576,000		$288,000	$288,000	$576,000
Other					
Total Direct Costs	$600,000		$300,000	$300,000	$600,000
Indirect Costs – 0.0%					
Total Project Costs	$600,000		$300,000	$300,000	$600,000

3 . Budget Narrative

Detailed cost estimates for the Project can be found in Attachment D.

Salaries and Wages – The departments may perform installation of controllers, but for budgeting purposes all construction time is included under the contracts/construction item.

Fringe Benefits – The departments will not perform the construction and department staff time is not included for reimbursement or cost share.

Travel – The departments will not perform the construction and department staff time is not included for reimbursement or cost share.

Equipment – It is anticipated that all the heavy equipment that will be used in this Project will be supplied by the awarded contractor.

Materials and Supplies – All Material and Supply costs associated with the Project are included in the contractual category. All material and supplies will be included under the awarded contract.

Contractual – It is anticipated that the projects will be accomplished through one or two contracts for each location; one for a consultant to assist with Tasks 1, and 2 (for some sites), and the other contract for a contractor to construct the improvements at each site.

Environmental and Regulatory Compliance Costs – No separate budget is anticipated to be required for environmental mitigation or regulatory compliance as the project is anticipated to

be exempt from CEQA and NEPA and any preventative measures will be included as part of the contractors bid.

Other – A contingency of approximately 20% of the construction cost was included.

Indirect Costs – The Project will not have indirect costs.

Total Cost – Total Project Cost is estimated to be $600,000. The Federal share will be $300,000 (50% of the Total Project cost); and the applicant share will be $300,000 (50% of the Total Project Cost).

4 . Budget Form

Budget Form SF-424C is included in Attachment E.

Attachment A - City of Fresno Public Landscape Water Conservation Projects

					2018												2019								
Task	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Task 1 - Project Administration																									
Task 2 - Design Engineering																									
Task 3 - Construction																									
Task 4 - Construction Administration																									

We create special places. We plant, care, inspire.
We are a voice, a teacher, a steward.

January 5, 2017

Mr. Thomas Esqueda,
City of Fresno
2600 Fresno St.
Fresno, CA, 93721

Subject: City of Fresno WaterSMART Grant Application

Dear Mr. Esqueda:

On behalf of Tree Frenso, I am pleased to write this letter of support for The City of Fresno's proposal to the Department of the Interior, Bureau of Reclamation for a FY2017 WaterSMART to help upgrade and enhance the water efficiency of the irrigation systems.

The mission of Tree Fresno is to transform the San Joaquin Valley with tree, greenways and beautiful landscapes. We have learned what can be accomplished with water-wise trees and plants that use 50% of traditional landscapes. Tree Fresno works in partnership with the City of Fresno Parks, After School, Recreation and Community Services (PARCS) Department and the Department of Public Works to plant trees at City Parks and on City right-of-ways. Tree Fresno highly supports this proposal to implement water conservation projects at City facilities such as median islands, parks and large irrigated turf greenways.

Sincerely,

Lee Ayres
Chief Executive Officer

3150 East Barstow Avenue, Fresno, CA 93740 — Office 559-221-5556, Fax 559-221-5559 — www.treefresno.org

West Fresno family resource center
Empowering the Community

1802 E California Ave
Fresno, Ca 93706
(559) 621-2967 office
(559) 497-5480 fax

January 12, 2017

Mr. Thomas Esqueda,
City of Fresno
2600 Fresno St.
Fresno, CA, 93721

Subject: City of Fresno WaterSMART Grant Application

Dear Mr. Esqueda:

On behalf of the West Fresno Family Resource Center, I am pleased to write this letter of support for The City of Fresno's proposal to the Department of the Interior, Bureau of Reclamation for a FY2017 WaterSMART to help upgrade and enhance the water efficiency of the irrigation system.

The West Fresno Family Resource Center is committed to empowering and supporting the West Fresno community to achieve optimal health and well-being. WFFRC works in partnership with the City of Fresno Parks, After School, Recreation and Community Services (PARCS) Department to operate the Maxie L. Parks Community Center. We have also initiated a community garden to help educate youth about the importance of eating healthy. WFFRC highly supports this proposal to implement a water conservation project by improving the irrigation system and providing drip irrigation for the new trees that will be planted here at the Maxie Parks Community Center.

If you need additional information, please contact me at (559) 621-2962 or email at yrandles@wfresnofrc.org

Sincerely,

Yolanda Randles, MPH Executive Director

RESOLUTION NO. 2017-

RESOLUTION OF THE COUNCIL OF THE CITY OF FRESNO, CALIFORNIA, AUTHORIZING APPLICATION TO THE UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION FOR A WATERSMART: WATER AND ENERGY EFFICIENCY GRANT FOR FY 2017 FOR THE CITY PARKS AND IRRIGATION SYSTEM WATER EFFICIENCY UPGRADE PROJECT AND THE DIRECTOR OF PUBLIC UTILITIES OR DESIGNEE(S) TO EXECUTE ALL APPLICATION DOCUMENTS ON BEHALF OF THE CITY OF FRESNO

WHEREAS, the City of Fresno ("City") is a unit of local government with public water supply delivery authority within the western United States; and

WHEREAS, the Department of the Interior, Bureau of Reclamation has issued a funding opportunity under the WaterSMART: Water and Energy Efficiency Grant for Fiscal Year (FY) 2017; and

WHEREAS, the City of Fresno Department of Public Works and City of Fresno Parks, After School, Recreation and Community Services (PARCS) Department have parks, median islands, greenways, and other facilities with large irrigation systems that require significant water consumption; and

WHEREAS, the State of California has issued a mandate to reduce municipal water use in the City of Fresno by 28 percent; and

WHEREAS, the Department of Public Works and the PARCS Department have appropriated funds for water efficiency improvements to reduce the use of surface water and groundwater in the City of Fresno; and

WHEREAS, it is in the interest of the City of Fresno Department of Public Utilities to facilitate submission of a WaterSMART Grant application to fund a project whose result is significant savings of surface water and groundwater, particularly in this time of serious and ongoing drought; and

WHEREAS, the Department of Public Works and the PARCS Department have appropriated funds in the 2016-2017 fiscal years to meet the fifty percent cost match commitment for the City of Fresno Parks and Irrigation System Water Efficiency Upgrade Project; and

WHEREAS, the City of Fresno Department of Public Utilities is desirous of submitting a WaterSMART Grant application to fund said project to reduce potable water demands in the City's public water supply service area.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Fresno as follows:

1. The City of Fresno submits a WaterSMART: Water and Energy Efficiency Grant for Fiscal Year (FY) 2017 to the Bureau of Reclamation.
2. The City of Fresno Public Utilities Director or designee(s) thereof are authorized and empowered to execute the application in collaboration with the Department of Public Works and the PARCS Department.
3. The Parks and Irrigation System Water Efficiency Upgrade Project is being submitted as a Group II project under the grant, which awards up to

$1,000,000, and the Department of Public Works and PARCS Department are prepared to fund fifty percent or more of the Project.

4. The City Attorney is authorized to execute program related agreements, certifications, assurances, and opinions.

5. Subject to the foregoing provisions, the City certifies it has legal authority to participate in the grant program with the Bureau of Reclamation.

RESOLVED, that nothing in this Resolution binds or obligates City's general fund, taxing authority, or borrowing power.

* *

STATE OF CALIFORNIA)
COUNTY OF FRESNO) ss.
CITY OF FRESNO)

I, YVONNE SPENCE, City Clerk of the City of Fresno, certify that the foregoing resolution was adopted by the Council of the City of Fresno, at a regular meeting held on the day of _____, 2017.

AYES :
NOES :
ABSENT:

Mayor Approval: _____, 2017
Mayor Approval/No Return: _____, 2017
Mayor Veto: _____, 2017
Council Override Vote: _____, 2017

YVONNE SPENCE, CMC
City Clerk

By:_____
Deputy

APPROVED AS TO FORM:
DOUGLAS T. SLOAN
City Attorney

By:_____
BRANDON M. COLET

Deputy City Attorney

BMC:nd (69999nd/bmc) 12-21-15

Item	Description	Quantity	Unit	Unit Price	Total Price
	Fourth Street, Central Irrigation Control				
1	Mobilization	1	LS	$ 1,000	$ 1,000
2	12 Station Toro Sentinel Irrigation Controller [1]	1	EA	$ 3,647	$ 3,647
3	Controller Pedestal [1]	1	EA	$ 340	$ 340
4	4 inch Booster Pump	1	EA	$ 7,500	$ 7,500
5	Contingency	1	20%	$ 2,497	$ 2,497
6	Installation	1	LS	$ 7,000	$ 7,000
7	Project Management/Communication	1	LS	$ 4,000	$ 4,000
			Total Cost =		$ 25,984
	Bond Bike Path (S), Central Irrigation Control				
8	Mobilization	1	LS	$ 1,000	$ 1,000
9	12 Station Toro Sentinel Irrigation Controller [1]	2	EA	$ 3,647	$ 7,294
10	Controller Pedestal [1]	2	EA	$ 340	$ 679
	Provide Power from Street Light Circuit				
11	Mobilization and City Installation Labor	1	LS	$ 5,000	$ 5,000
12	Trench to Street Light with 3/4" EMT conduit and two #12 conductors	200	LF	$ 5	$ 1,000
13	Street Light Termination - New box with Locking Lid and 20 Amp Fuse	2	EA	$ 500	$ 1,000
14	Controller Termination - All-Weather box with 20 Amp Switch	2	EA	$ 250	$ 500
15	Contingency	1	20%	$ 3,295	$ 3,295
16	Installation	1	LS	$ 10,000	$ 10,000
17	Project Management/Communication	1	LS	$ 7,000	$ 7,000
			Total Cost =		$ 36,768
	Bond Bike Path (N), Central Irrigation Control				
18	Mobilization	1	LS	$ 1,000	$ 1,000
19	12 Station Toro Sentinel Irrigation Controller [1]	3	EA	$ 3,647	$ 10,941
20	Controller Pedestal [1]	3	EA	$ 340	$ 1,019
21	Contingency	1	20%	$ 2,592	$ 2,592
22	Installation	1	LS	$ 10,000	$ 10,000
23	Project Management/Communication	1	LS	$ 10,000	$ 10,000
			Total Cost =		$ 35,551
	Armstrong, Central Irrigation Control				
24	Mobilization	1	LS	$ 1,000	$ 1,000
25	12 Station Toro Sentinel Irrigation Controller [1]	2	EA	$ 3,647	$ 7,294
26	Controller Pedestal [1]	2	EA	$ 340	$ 679
27	2 inch Booster Pump	1	EA	$ 5,000	$ 5,000
	Construct Enclosure for East System				
28	Demolition and Removal	1	LS	$ 2,000	$ 2,000
29	Prep and Place 4 inch Concrete Slab	200	SF	$ 25	$ 5,000
30	Large Hinged Cage	1	EA	$ 7,500	$ 7,500
31	Contingency	1	20%	$ 5,695	$ 5,695
32	Installation	1	LS	$ 15,000	$ 15,000
33	Project Management/Communication	1	LS	$ 10,000	$ 10,000
			Total Cost =		$ 59,168
	Butler east of Peach, Central Irrigation Control				
34	Mobilization	1	LS	$ 1,000	$ 1,000
35	12 Station Toro Sentinel Irrigation Controller [1]	2	EA	$ 3,647	$ 7,294

36	Controller Pedestal [1]	2	EA	$ 340	$ 679
	Construct 2 Enclosures				
37	Demolition and Removal	1	LS	$ 2,000	$ 2,000
38	Prep and Place 4 inch Concrete Slab	100	SF	$ 25	$ 2,500
39	Regular Cages	2	EA	$ 2,500	$ 5,000
	Replace Backflows				
40	Mobilization and Demolition	1	LS	$ 1,000.00	$ 1,000.00
41	2 inch Backflow Prevention Devices	2	EA	$ 1,500.00	$ 3,000.00
42	Associated Materials for Re-Plumbing	2	EA	$ 1,000.00	$ 2,000.00
43	Contingency	1	20%	$ 4,895	$ 4,895
44	Installation	1	LS	$ 15,000	$ 15,000
45	Project Management/Communication	1	LS	$ 9,000	$ 9,000
			Total Cost =		$ 53,368
Highway City Community Science Center					
46	TORO TIS-24P-MW Controller [2]	1	EA	$ 2,500	$ 2,500
47	5 Year Service Electrical Hook Up [2]	1	EA	$ 900	$ 900
48	Irrigation Equipment [2]	1	LS	$ 2,500	$ 2,500
49	Labor [4]	550	HR	$ 10	$ 5,528
50	Contingency	1	20%	$ 2,286	$ 2,286
51	Installation	1	LS	$ 9,200	$ 9,200
52	Project Management/Communication	1	LS	$ 7,000	$ 7,000
53	Expected Increase from Original Quote	1	LS	$ 10,000	$ 10,000
			Total Cost =		$ 39,913
Roeding (Part 1)					
54	Irrigation Equipment [3]	1	LS	$ 30,000	$ 30,000
55	Labor [4]	6750	HR	$ 29	$ 194,400
56	Contingency	1	20%	$ 44,880	$ 44,880
57	Installation	1	LS	$ 50,000	$ 50,000
58	Project Management/Communication	1	LS	$ 30,000	$ 30,000
			Total Cost =		$ 349,280

Total Project Cost =	$	600,000

[1] See Page 1 of attachment for quote from supplier

[2] See Page 3 of attachment for quote from supplier

[3] See Page 5 and 6 of attachment for quote from supplier

[4] See Page 7 of attachment for estimate

TORO *Irrigation Division* *January 13, 2017*

M E M O R A N D U M *from Chris Steele*

To: City Of Fresno - Scott Krauter

SUBJECT: Streetscapes Controller Upgrade

The following is a preliminary Sentinel Estimate. Estimate not official until quoted by Toro Sentinel Distributor, Horizon Irrigation.

Sentinel Central Control, Software Only, 2 Yr Precision Et, NSN Connect & NSN Support. (Server Based installation)	$3450.00

SBN12WS1U	**12 station Sentinel controller, without keypad or display, UHF 2 way radio communication, powder coated steel wall mount enclosure, level 3 surge protection, onboard network connection, onboard Turf Guard connection and ATX antenna**	**$1911.00**
SBN24WS1U	**24 station Sentinel controller, without keypad or display, UHF 2 way radio communication, powder coated steel wall mount enclosure, level 3 surge protection, onboard network connection, onboard Turf Guard connection and ATX antenna**	**$2261.00**

SB12WS1U	**12 station Sentinel field controller, small painted wall mount enclosure, level three surge protection, onboard network connection, onboard Turf Guard connection and ATX antenna.**	**$3647.00**
SB24WS1U	**24 station Sentinel field controller, small painted wall mount enclosure, level three surge protection, onboard network connection, onboard Turf Guard connection and ATX antenna.**	**$4263.00**

TIS-PED	**PEDESTAL ASSY, Optional**	**$339.50**

SB-CTM-WS3-ANT	**Sentinel Communication Termination Module with Ethernet, in small stainless steel wall mount enclosure. With Mast Antenna and 50' Cable. (Installation not included) Communication Distance 2-3 miles radius.**	**$2125.00**

Weather Station: $1800
Wireless Vantage Pro2™ &
Vantage Pro2™ Plus Stations

Maintenance Remotes: $1400
SHHR Sentinel Hand Held Radio With Charger

WS1	10 ¾" W x 15 ¾" H x 5 ¾" D powder coated metal wall mount enclosure	

EWING
Irrigation • Golf • Industrial

GENERAL OFFICE:
3441 E. Harbour Drive
Phoenix, AZ 85034
(602) 437-9530 • (602) 437-0446 Fax

EWING, FRESNO #06 * Q U O T A T I O N * PAGE: 1
7530 NO INGRAM AVE QUOTE DATE: 3/28/2011
FRESNO, CA. IN REPLY TO YOUR INQUIRY PRINT DATE: 3/28/2011
(559) 438-9530 93711 - SUBJECT TO CONDITIONS BELOW - QUOTATION #: 1355783
JOB: DICKEY PARK

ATTN: TONY
FOR: 9760 CUSTOMER PHONE: (559) 498-4920
CITY OF FRESNO-PARKS DEPT
2326 FRESNO ST RM 101
FRESNO CA 93721
CUSTOMER FAX: 1 (559) 457-1215

DESCRIPTION	ITEM NUMBER	QUANTITY	LIST PRICE	NET PRICE	EXTENDED PRICE
TORO TIS-24P-MW CONTROLLER	99000000	1	2515.00	1509.000	1,509.00
5 YEAR SERVICE	99000000	1		900.000	900.00
ELECTRICAL HOOK UP	99000000	1		650.000	650.00
3M DBR/Y-6 BULK SPLICE	17000289	30	1.80	1.440	43.20
TR70XTP-02 TORO 5IN ROTOR W/CK	30004800	30	55.00	29.150	874.50
1 X 12 PVC SCH 80 NIPPLE TBE	06010120	25	5.80	1.218	30.45
1 X 12 PVC SCH 80 NIPPLE TBE	06010120	5	5.80	1.334	6.67
1 MARLEX 90 STREET ELL TT	04412110	100	6.23	1.308	130.80
1 MARLEX 90 STREET ELL TT	04412110	20	6.23	1.433	28.66
1806-PRS-SAM RAINBIRD PR W/CHK	35003498	150	19.50	10.335	1,550.25
1806-PRS-SAM RAINBIRD PR W/CHK	35003498	25	19.50	10.725	268.13
MP1000 90-210 10-12FT ROTATOR	44005120	170	9.25	4.764	809.88
MP1000 90-210 10-12FT ROTATOR	44005120	5	9.25	4.903	24.52
1/2 X 12 PVC SCH 80 NIPPLE TBE	06005120	150	1.92	.403	60.45
1/2 X 12 PVC SCH 80 NIPPLE TBE	06005120	25	1.92	.442	11.05

EWING
Irrigation ▲ Golf ▲ Industrial

GENERAL OFFICE:
3441 E. Harbour Drive
Phoenix, AZ 85034
(602) 437-9530 • (602) 437-0446 Fax

NET PRICES ARE FOR QUANTITIES AND DESCRIPTIONS SHOWN HEREIN ONLY, AND NO IMPLICATION OR WARRANTY IS MADE WITH REGARD TO THEIR CORRECTNESS OR AGREEMENT WITH THE SPECIFICATIONS. SHIPMENT SUBJECT TO CREDIT CLEARANCE. NO LIABILITY IS ASSUMED FOR QUANTITY SHOWN.

SUBTOTAL	6,897.56
8.9750% TAX	619.06
QUOTE TOTAL	7,516.62

THE ABOVE QUOTATION IS FOR ESTIMATING PURPOSE ONLY. WHEN ORDER IS PLACED IT WILL BE SHIPPED AT PRICE IN EFFECT AT TIME OF SHIPMENT UNLESS OTHERWISE NOTED ON THIS QUOTATION.

Taxes on quote are calculated based on billing location and are subject to change based on delivery location.

PRICES SHOWN ARE CURRENT AS OF 3/28/2011 AND WILL BE GOOD UNTIL 4/27/2011. EXCEPTION: WIRE PRICES GOOD FOR 2 WEEKS ONLY.

BY GARY

EWING IRRIGATION PRODUCTS & INDUSTRIAL PLASTICS

TORO *Irrigation Division* *January 13, 2017*

M E M O R A N D U M *from Chris Steele*

To: City Of Fresno-Parks Department

SUBJECT: Roeding Park Controller Upgrade

The following are three Sentinel options for Roeding Controller Upgrade:

#1 Dog Park: 12 Station SS Pedestal
#2 Storyland: 24 Station SS Pedestal
#3 Playland: 24 Station SS Pedestal
#4 Maple Grove: 24 Station SS Pedestal
#5 Ed Building: 12 Station SS Pedestal
#6 New Pond: 24 Station Pedestal
#7 Olive Entrance: 24 SS Pedestal
#8 Pump House: 24 Station Wall Mount
#9 Olive Ave: 12 Station SS Pedestal
#10 Eucalyptus Grove: 12 Station SS Pedestal
#11 Golden State: 12 Station SS Pedestal
#12 Belmont Circle: 36 Station SS Pedestal

Sentinel Central: $2747.50
102-2376 Sentinel Central Interface Module with Power Supply
SB-ANT-MAST UHF Omni-directional mast antenna (includes 50' RG8 cable)
City supplies Computer and Antenna pole and installation.
N/C on Software

Weather Station:$1800
Wireless Vantage Pro2™ &
Vantage Pro2™ Plus Stations

Maintenance Remotes:$1400
SHHR* Sentinel Hand Held Radio With Charger

#1 Standard Sentinel Satellites
SB12PS1U 12 station Sentinel field controller, stainless steel pedestal mount enclosure, level three surge protection, onboard network connection, onboard Turf Guard connection and VRA antenna. **$5677.00**
SB24PS1U 24 station Sentinel field controller, stainless steel pedestal mount enclosure, level three surge protection, onboard network connection, onboard Turf Guard connection and VRA antenna. **$6296.50**
SB36PS1U 36 station Sentinel field controller, stainless steel pedestal mount enclosure, level three surge protection, onboard network connection, onboard Turf Guard connection and VRA antenna. **$6919.50**

SB24WS1U 24 station Sentinel field controller, small painted wall mount enclosure, level three surge protection, onboard network connection, onboard Turf Guard connection and ATX antenna. **$4263.00**

#2 2-wire Sentinel Satellites
SBAWS5U 204 station AC two wire controller in large stainless steel wall mount enclosure. Remote and flow sensor ready. **$6026.30**
SBAWS1U 204 station AC two wire controller in Custom Command painted wall mount enclosure. Remote and flow sensor ready. **$4052.30**

Decoder 1 station: $84.00

P220S-26-08 2" scrubber valve with Reclaim water resistant Diaphragm: $136.00

Community Center
WaterSmart Irrigation Improvments
Budget Proposal 2011

Budget Item	Description	Cost Basis	Estimated Costs	Grantee Match	Total
A. Salaries and Wages			*14,826.50*		*14,826.50*
	Supervisor II	148 hours x $32.68/hour	4,884.00		4,884.00
	Irrigation Specialist	410 hours x $24.25/hour	9,942.50		9,942.50
B. Employee Benefits			*5,216.20*	-	*5,216.20*
	Supervisor (Project Oversight)	148 hours x $10.70/hour	1,583.60		1,583.60
	Irrigation Specialist	1 staff x 410 hrs x $8.86/hr	3,632.60		3,632.60
					-
C. Contractual			*62,490.30*	-	*62,490.30*
	LCC		62,490.30		62,490.30
					-
D. Travel				-	
					-
E. Supplies			*17,467.00*	-	*17,467.00*
	Trees	50 #15 trees @ $60/tree	3,000.00		3,000.00
	Tree Stakes	100 @ $4.00/tree	400.00		400.00
	Tree Ties	100 @ $0.67/tree	67.00		67.00
	Mulch	100 Yds. @ $15/Yd.	1,500.00		1,500.00
	Water Smart Irrigation	50 trees @ $50.00/tree	2,500.00		2,500.00
	Field Irrigation Imps		10,000.00		
TOTAL DIRECT COSTS			100,000.00		100,000.00