RECLAMATION
Managing Water in the West

Environmental Assessment

Bella Vista Water District Advanced Metering and Water Conservation Improvements

16-01-MP

U.S. Department of the Interior
Bureau of Reclamation

March 2016

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Section 1 Introduction

This Environmental Assessment (EA) examines the potential direct, indirect, and cumulative impacts to the affected environment associated with the U.S. Bureau of Reclamation (Reclamation) providing WaterSMART: Water and Energy Efficiency Grant funding to the Bella Vista Water District (BVWD) for its Advanced Metering, Infrastructure and Water Conservation Improvements Project (Project). The Project would take place within the boundaries of the BVWD, which is located in Northern California, near Redding (see Figure 1). BVWD provides water service to approximately 6,000 customers located in the eastern portion of the City of Redding, as well as the rural communities east of Redding, Bella Vista and Palo Cedro.

1.1 Need for the Proposal

As the State of California is currently experiencing record-breaking drought conditions, cities need to reduce water consumption and waste to the extent feasible. The BVWD uses approximately 14,800 acre-feet of water annually (average over past 10 years). The primary source of this water is through a Water Service Contract with Reclamation as a part of the Trinity Division of the Central Valley Project. In times of drought, water received through this contract can be reduced. For example, in the 2014-15 water year, BVWD received 50 percent of historical municipal and industrial (M&I) use and received no agricultural irrigation water. To compensate for this reduction, groundwater wells were pumped and agricultural water was purchased from another district. All of BVWD agricultural customers reduced water usage, and many customers fallowed pastures. Measures need to be taken to better conserve and reduce water consumption.

The BVWD needs funding assistance to improve water conservation and water use efficiency. To achieve this BVWD would replace aging water meters with more accurate and efficient meters, purchase and install smart irrigation controllers, perform irrigation water audits, and purchase a portable ultrasonic flow meter. Implementation of the Project would provide more accurate metering of water usage, and daily water meter readings would be available online to agricultural and large landscape irrigation customers. This would allow users to make more informed water usage choices, as well as provide a more immediate indication of leaks. Proposed smart irrigation controllers would automatically adjust to environmental conditions (i.e. rainfall, wind temperature, humidity, solar radiation, and soil type) to drastically reduce waste while providing ideal irrigation for a particular landscape. Landscape irrigation audits would inform customers on how to improve water use efficiency and implement water conservation. Meter replacements would provide BVWD with real-time water usage information coming from 200 of its largest water users. More advanced

meters would also provide alerts to BVWD in the event of water theft. A portable ultrasonic flow meter would enable BVWD to verify accuracy of its meters.

Reclamation provides WaterSMART funding to entities with water or power delivery authority that propose projects seeking to conserve and use water more efficiently.

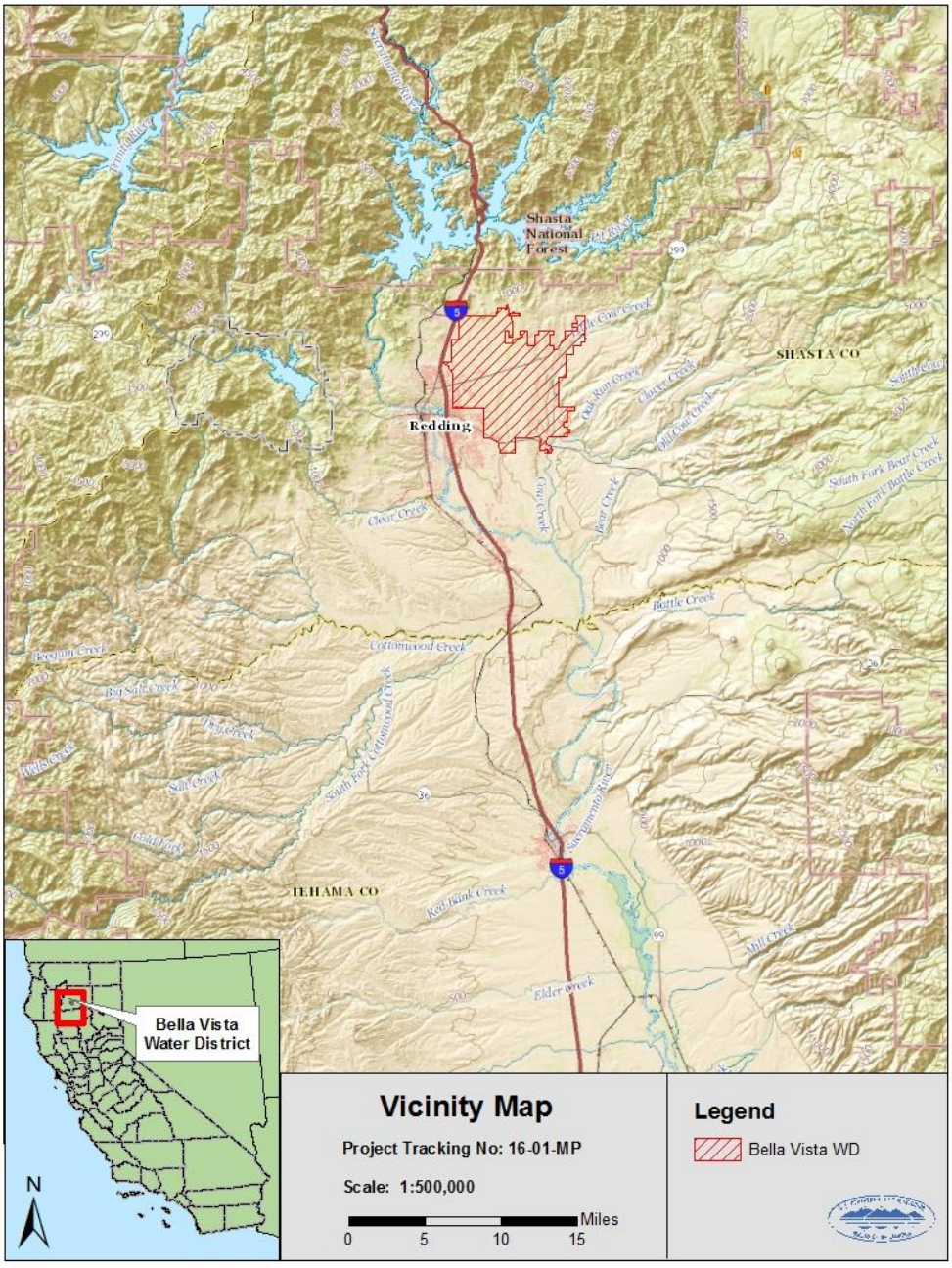


Figure 1. Vicinity of Bella Vista Water District.

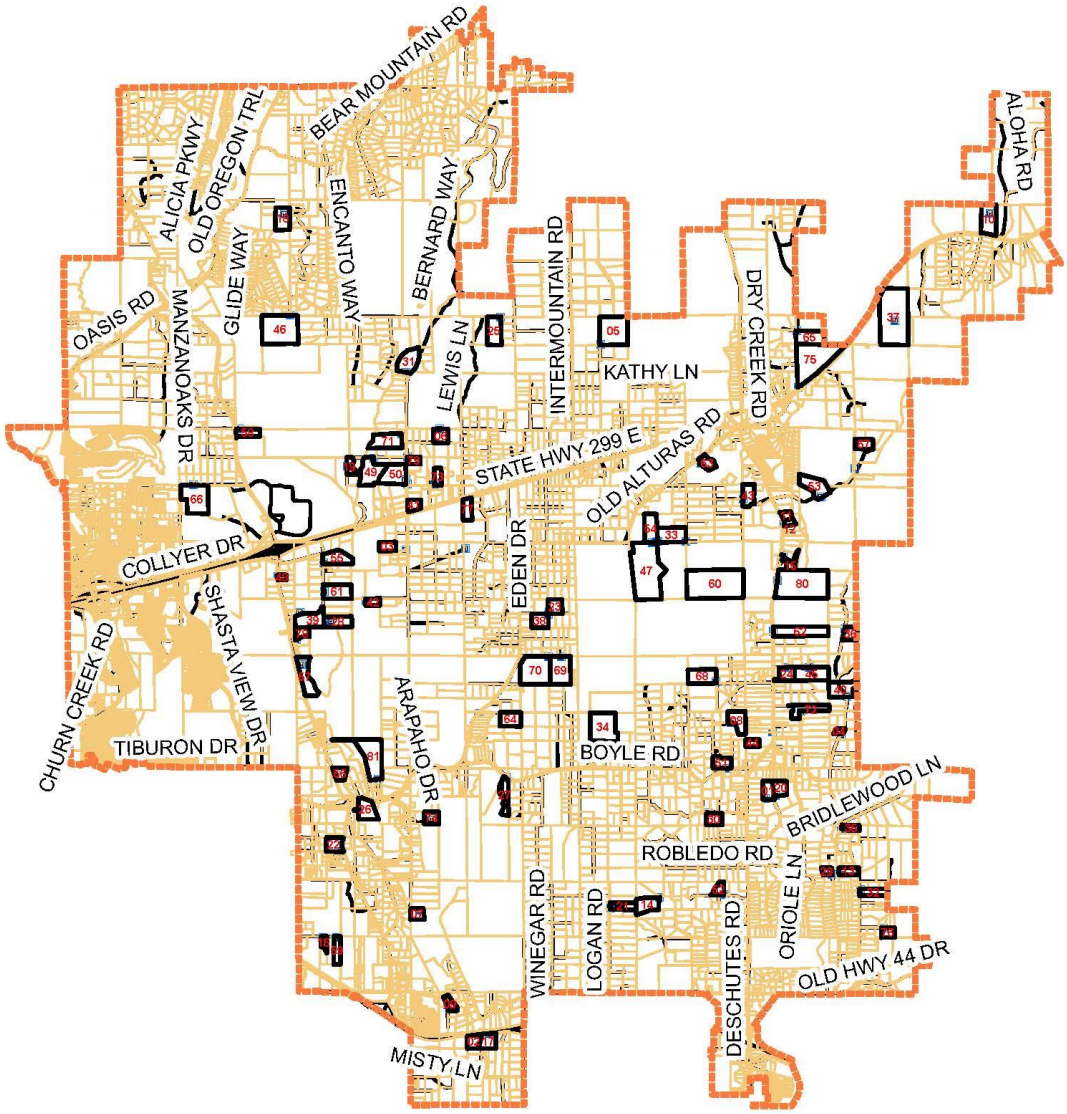


Figure 2. Location of Project within the Bella Vista Water District. The 80 largest water users where meters will be replaced are outlined in black.

1.2 1.1 Resources Analyzed in Detail

The range of potential impacts assesses whether the decision by Reclamation to partially fund the Project might cause significant effects on the human environment. This EA will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential impacts and cumulative effects to the following environmental resources:

- Biological Resources
- Water Resources
- Air Resources

- Cultural Resources

Impacts to the following resources were considered and found to be minor or absent. Brief explanations for their elimination from further consideration are provided below:

- Indian Trust Assets: The Proposed Action does not have the potential to affect Indian Trust Assets (see Appendix A).
- Indian Sacred Sites: The Proposed Action would not be located on or impact federal lands and therefore could not limit access to Indian sacred sites on federal lands.
- Environmental Justice: The Proposed Action would not have impacts to any group of individuals, and therefore could not disproportionately impact low-income or minority individuals or populations within the Project area.

Section 2 Proposed Action and Alternatives

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not contribute financial assistance to BVWD through a program grant for the Project. BVWD would either need to find another source of funding, or not complete the Project. Analysis within this EA assumes the project would not be implemented and conditions would remain unchanged.

2.2 Proposed Action

Reclamation proposes to contribute $199,938 to BVWD's Project as described below, through a WaterSMART Program grant. The BVWD would supply $246,312 of non-federal funding in support of the Project. The Project entails replacement of approximately 80 water meters on existing service connections (previously disturbed land) as well as purchase of smart irrigation controllers, advanced meter reading registers and a portable ultrasonic meter (Figures 2 and 3). The Project would also fund an irrigation consultant.

The Project would consist of the following activities:

- Installation of ~80, 1-in to 4-in water meters (Figures 2 and 3)
    - Meters would be installed at current service connections and in most cases would be replaced with smaller meters
    - Locations are accessible from established roadways and/or driveways
    - Approximately 35 of the meters would require no ground disturbance
    - The remaining 45 meters would require exposure of attached water pipes in order to change incompatible fittings
        - Maximum ground disturbance is estimated to be 12 ft by 12 ft to a depth of 6 ft.
- Purchase and installation of advanced meter reading registers
    - Registers would clamp on existing meters and would require no ground disturbance
    - Funding for advanced metering infrastructure services
- Purchase of smart irrigation controllers to be made available for use and installation by BVWD water users
    - Installation would require no ground disturbance
- Purchases of a portable ultrasonic flow meter and two handheld meter readers

    - Do not require installation or ground disturbance
- Funding an irrigation consultant to perform audits and inform water users of how they can better conserve water

Reclamation's action to award the grant and issue a notice to proceed on the above-described Project may occur in spring of 2016. The BVWD would purchase equipment and begin water meter retrofits in spring and summer of 2016. Installation of the meters is anticipated to take up to two years.

Construction equipment to be used includes:

- Backhoe
- Dump truck
- Service truck with a small lifting boom
- Small vacuum truck
- Vibratory plate compactor

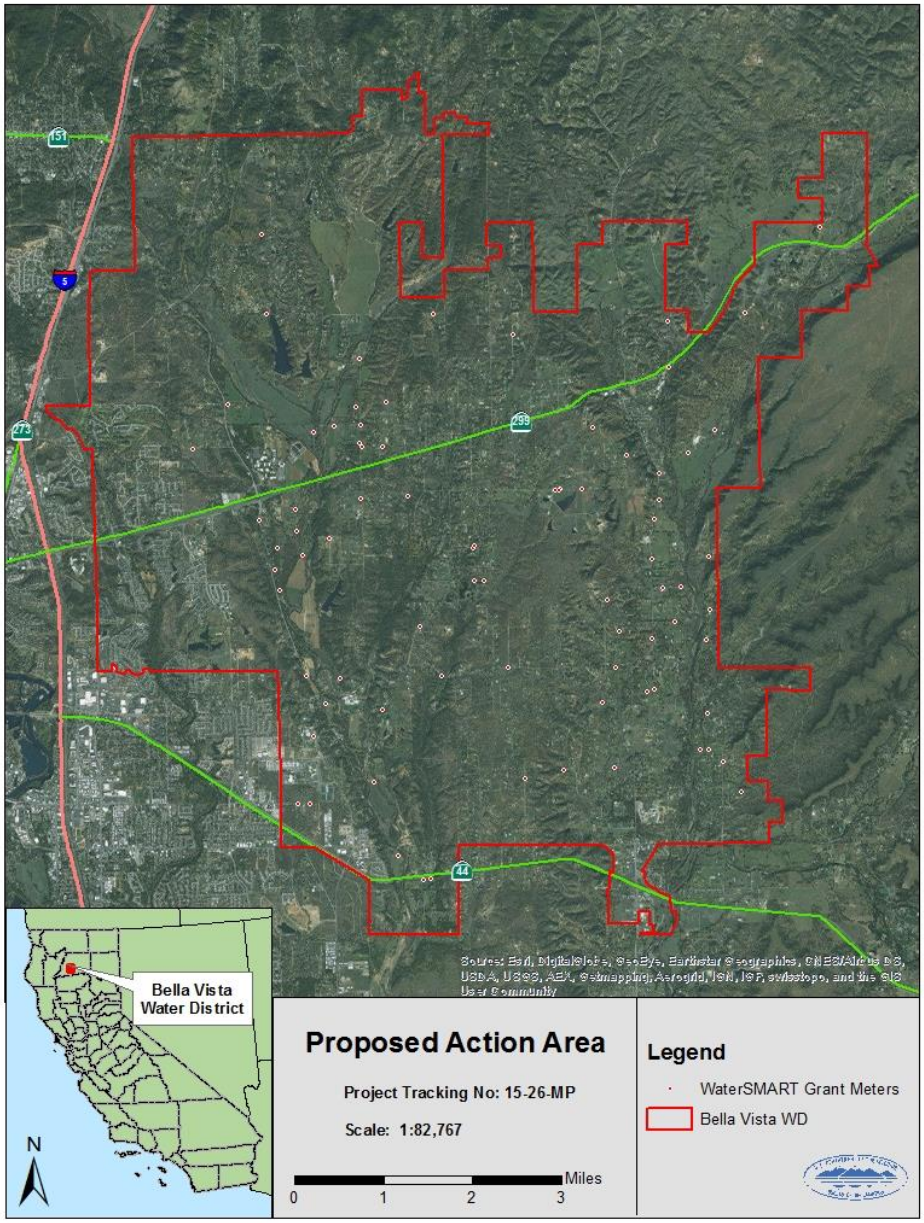


Figure 3. Location of the Proposed Action Area showing specific meter locations.

2.2.1 Environmental Commitments and Best Management Practices

As part of the Proposed Action, BVWD will implement the following environmental commitments and Best Management Practices in order to avoid and minimize potential effects to the affected environment:

- There will be no discharges to any bodies of water.
- No construction will occur within wetland or riparian areas.
- Ground disturbance will be limited to the smallest practical footprint.
- Access routes will be along established roads and driveways.
- Ground disturbing work will be limited to dry conditions.

- Standard erosion and dust control measures will be implemented.
- All equipment will be fitted with rubber tires.
- Straw wattles or silt fencing will be used to protect sensitive vernal pool resources within 250 ft of ground disturbing work when no other physical barrier is present.

Section 3 Affected Environment and Environmental Consequences

3.1 No Action Alternative

The No Action Alternative would consist of Reclamation not providing grant funding to replace aging water meters and purchase equipment to aid in water conservation. Under the No Action Alternative, there would be no change to existing conditions within the affected environment. Without the Proposed Action there would be no water savings from improved metering, or equipment to improve water conservation. Landscapes and irrigation systems currently in place would continue to operate as is and the BVWD would continue to provide water to users.

3.2 Proposed Action

3.2.1 Biological Resources

A list of federal endangered and threatened species was obtained for the BVWD in January 2016, from the U.S. Fish and Wildlife Service's (USFWS) website (USFWS 2016). Of the nine federally listed as threatened or endangered species with potential to occur in the vicinity of BVWD, Reclamation has determined three are likely to occur in proximity to the Project: vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), and slender Orcutt grass (*Orcuttia tenuis*). All three of these species are associated with and restricted to vernal pool habitat. Of the approximate 45 meter replacements requiring ground disturbance, only two are in proximity (within 250 ft) to these sensitive resources (Figure 4). These two meters are also within a USFWS designated vernal pool core recovery area. Critical habitat has been designated for all three species, however the closest (slender Orcutt grass) is over 0.28 miles from ground disturbing work associated with the Project; this distance is great enough that no impacts to critical habitat from the Project are anticipated.

Meters being replaced within 250 ft of vernal pools are located at 3253 and 3361 Tarmac Road in Redding, CA (155 ft and 61 ft respectively)(Table 1). The meter at 3253 is directly adjacent to the homeowner's driveway and is physically separated from the vernal pool complex across the street by Tarmac Road. The meter at 3361 is on a mound at the end of a gravel road where a mobile home was previously located. The area where these meters are found can be described as an ecotone between annual grassland and open oak woodland. There is a vernal pool complex to the north of Tarmac Road that is surrounded by development.

The site was visited by a Reclamation biologist on January 20, 2016 following a large rain event. The vernal pools were observed holding water, and water was also present in a shallow swale extending north to south, five ft in width crossing

the gravel road approaching the meter at 3361 (identified on Figure 4). While the swale may have potential to transport sensitive vernal pool species, it is unlikely to support them because it lacks the necessary characteristics (i.e. insufficient depth, compacted gravel base, and slope). Replacement of these two meters would be completed during dry conditions between June and October, and the number of trips to access the location would be limited to the maximum extent practicable.

The excavation associated with the Project (maximum depth 6 ft) could disrupt the hardpan, leading the neighboring vernal pool habitat to receive less water. This is unlikely because excavation will be on the existing footprint of the current utility line and will not exceed previous disturbance. Therefore there should be no new impacts to vernal pool hydrology in the area as a result of implementation of the Project.

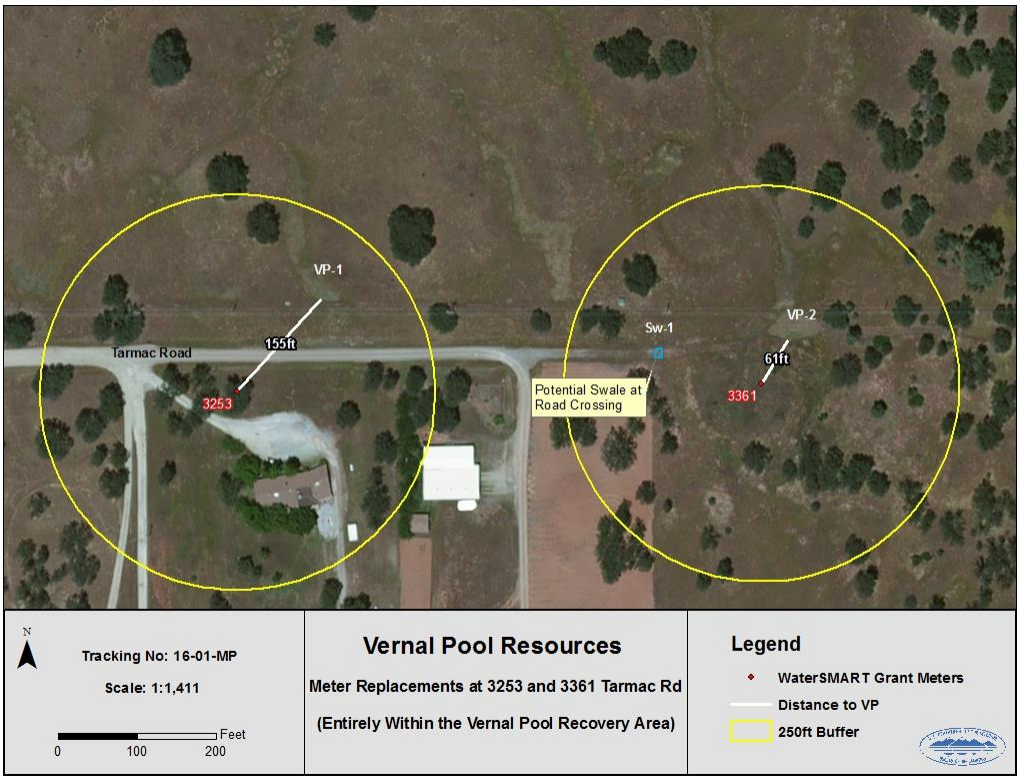


Figure 4. Meter replacements in proximity to sensitive biological resources.

Table 1. Biologically sensitive wetland habitat within the Project Area.

ID	Wetland Type	Potential Branchiopod and/or SOG Habitat	Distance to Project Area	Justification for Not Likely to Adversely Affect
VP-1	Vernal Pool	Yes	155 ft	This feature is 155 ft away from any ground disturbance. There is a physical barrier (Tarmac Rd) separating the pool from the meter replacement. The meter will be accessed via established roadways and a private driveway.
VP-2	Vernal Pool	Yes	61 ft	This feature is 61 ft away from any ground disturbing activities. Ground disturbance will be within the footprint and to equal depth of previous ground disturbance from the original meter/utility installation. Work will be completed in the dry season and silt fencing/wattles will be used during ground disturbing activities to ensure any loosened soils do not travel to the pools.
Sw-1	Swale	No	~ 130 ft	This swale is shallow and crosses the gravel road leading onto the property. It is poorly defined and sloped. It is unlikely to hold water for sufficient periods necessary to support branchiopods or slender Orcutt grass. Equipment will cross it only under dry conditions, using rubber tires, and number of trips will be kept to a minimum.

3.2.2 Water Resources

Replacement of aging water meters with improved technology would reduce unaccounted water and help to identify leaks in water lines. The current water meters do not accurately measure low flows, such as those from slow leaks. The improved metering would inform the user as well as the water district of unintentional water loss. The user would be more apt to fix any leaks, so as to avoid the additional charges. The estimated annual savings from this is 75-90 AF.

BVWD will target the 50 largest water users for irrigation auditing. This service would be performed to offer guidance to customers on how to reduce and conserve their water use. The estimated water savings if half of those 50 customers take advantage of the irrigation auditing is 10 percent of their average annual usage of 1,300 AF, or 130 AF annually.

Based on irrigation audit findings, smart irrigation controllers would be installed. BVWD estimates the water savings from this to be an additional 70-130 AF annually. This number is based on 25 of the district's largest landscape irrigation accounts. BVWD would work with local irrigation supply companies to offer rebates on 50 percent of the cost of smart irrigation controllers.

Implementation of the Project would create an estimated 275-350 AF in total annual water savings. This water savings results in less water diverted from the Sacramento River, which leaves more water for other beneficial in-stream and downstream uses. This savings would also result in less pumping of groundwater in dry years.

3.2.3 Air Quality

Shasta County is in attainment for all federal ambient air quality standards (EPA 2015). The activities associated with the Project are minimal, and would occur throughout the water district. Installation of a single meter is anticipated to take from one to three days. Installation of all 81 meters is anticipated to be completed within a two-year timeframe. Thus and minor, temporary impacts would be spread across both time and space.

Equipment operation during meter installations will be short-term and temporary. Ground disturbance would be very limited and not require extensive use of large equipment. General best management practices would be implemented to control fugitive dust.

Water conserved by the project would reduce the amount of natural gas and electricity used by groundwater pumps and pressurization systems in the water district by identifying leaks in the system, thus providing minor reductions in emissions from these systems including a reduction in greenhouse gas emissions (BVWD 2015). Automated meter reading will also reduce the need for the water district staff to travel as frequently around the service area, thereby reducing emissions from vehicle trips. Therefore the improved water meter technology

would result in long-term, minor emission reductions from water pumping and travel in the water district service area.

3.2.4 Cultural Resources

The Proposed Action would provide the BVWD with federal funding to install new water meters, purchase equipment, and provide water users with professional irrigation audits. Ground disturbing activities would be limited to previously disturbed meter and utility locations. All cultural compliance required by Section 106 of the National Historic Preservation Act (NHPA) will be completed and necessary concurrence achieved from the California State Historic Preservation Officer prior to signing a Finding of No Significant Impact (FONSI) for this EA.

3.2.5 Cumulative Impacts

According to CEQ regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Temporary, minor adverse effects to vernal pool habitat (vernal pool fairy shrimp, vernal pool tadpole shrimp, slender Orcutt grass) may occur as a result of this action. With the implementation of the measure to limit work to the dry season, use wattles/silt fencing, and construction matting when crossing any wetland feature (see section 3.2.1 and Appendix C), effects to sensitive vernal pool species will be discountable and will not contribute to significant cumulative adverse impacts to the species/habitat.

Section 4 Consultation and Coordination

4.1 Agencies and Groups Consulted

Bella Vista Water District, the U.S. Fish and Wildlife Service, and the California State Historic Preservation Officer were consulted in the preparation of this EA.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

A Reclamation biologist visited the site on January 20, 2016. An informal consultation for vernal pool fairy shrimp, vernal pool tadpole shrimp, and slender Orcutt grass with a finding of May Effect, Not Likely to Adversely Affect was submitted to the U.S. Fish and Wildlife Service (USFWS) on March 3, 2016. Reclamation will not provide grant funding to BVWD until concurrence has been received.

4.3 National Historic Preservation Act (54 U.S.C. § 300101 et seq.)

54 U.S.C. § 304108, commonly known as Section 106 of the NHPA, requires that Federal agencies take into consideration the effects of their undertakings on historic properties. Historic properties are cultural resources that are included in, or eligible for inclusion in, the National Register. The 36 CFR Part 800 regulations implement Section 106 of the NHPA and outline the procedures necessary for compliance with the NHPA. Compliance with the Section 106 process follows a series of steps that are designed to identify if significant cultural resources are present in the proposed action project area and to what level they would be affected by the proposed Federal undertaking.

All cultural compliance required by Section 106 of the National Historic Preservation Act (NHPA) will be completed and necessary concurrence achieved from the California State Historic Preservation Officer prior to signing a FONSI for this EA.

Section 5 References

EPA (2015). Current Nonattainment Counties for All Criteria Pollutants. http://www3.epa.gov/airquality/greenbook/ancl.html. Accessed February 25, 2016.

Eriksen, C.H. and D. Belk. (1999). *Fairy Shrimps of California's Puddles, Pools, and Playas.* Mad River Press, Eureka, CA.

WRRC. (2010). *Period of Record Monthly Climate Summary for Redding, California (047300)*. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7300. Accessed February 9, 2016.

USFWS, (2009). *Slender Orcutt Grass (Orcuttia tenuis) 5-Year Review: Summary and Evaluation.* Sacramento, CA.

USFWS. (2016). IPaC Trust Resource Report. https://ecos.fws.gov/ipac/. Accessed January 13, 2016.

Appendix A: ITA Concurrence

04/13/2015

Indian Trust Assets
Request Form (MP Region)

Submit your request to your office's ITA designee or to MP-400, attention Deputy Regional Resources Manager.

Date:

Requested by (office/program)	Kylene Lang MP-152/Environmental Compliance & Conservation
Fund	15XR0680A1
WBS	RY.30180006BVWCA1E
Fund Cost Center	2015200
Region # (if other than MP)	
Project Name	Bella Vista Water District Advanced Metering, and Water Conservation Improvements
CEC or EA Number	16-01-MP
Project Description (attach additional sheets if needed and include photos if appropriate)	Reclamation proposes to contribute $199,938 to BVWD's Project as described below, through a WaterSMART Program grant. The BVWD would supply $200,938 of non-federal funding in support of the Project. The Project entails replacement of approximately 80 water meters on existing service connections (previously disturbed land) as well as purchase of smart irrigation controllers, advanced meter reading registers and a portable ultrasonic meter (see attached figure). The Project would also fund an irrigation consultant. The Project would consist of the following activities: • Installation of ~80, 1-in to 4-in water meters ○ Meters would be installed at current service connections and in most cases would be replaced with smaller meters ○ Locations are accessible from established roadways and/or driveways ○ Approximately 35 of the meters would require minimal to no ground disturbance ○ The remaining 45 meters would require exposure of attached water pipes in order to change out incompatible fittings ▪ Maximum ground disturbance is estimated to be 12 ft by 12 ft to a depth of 6 ft.

	• Purchase and installation of advanced meter reading registers
	  ○ Registers would clamp on existing meters and would require no ground disturbance
	• Purchase of smart irrigation controllers to be made available for use and installation by BVWD water users
	  ○ Installation would require no ground disturbance
	• Purchase of a portable ultrasonic flow meter and a handheld meter reader
	  ○ Do not require installation or ground disturbance
	• Funding an irrigation consultant to perform audits and inform water users of how they can better conserve water
	
	Reclamation's action to award the grant and issue a notice to proceed may occur in spring of 2016. The BVWD would purchase equipment and begin water meter retrofits in spring/summer of 2016. Installation of the meters is anticipated to take up to two years.
	
	Construction equipment to be used includes but is not limited to:
	• Backhoe
	• Dump truck
	• Service truck with a small lifting boom
	• Small vacuum truck
	• Vibratory plate compactor

***Project Location (Township, Range, Section, e.g., T12 R5E S10, or Lat/Long cords, DD-MM-SS or decimal degrees). Include map(s)**	122°16'53" W 40°37'3" N

Signature | Kylene Lang (Printed name of preparer) | 1-15-2016 (Date)

ITA Determination:

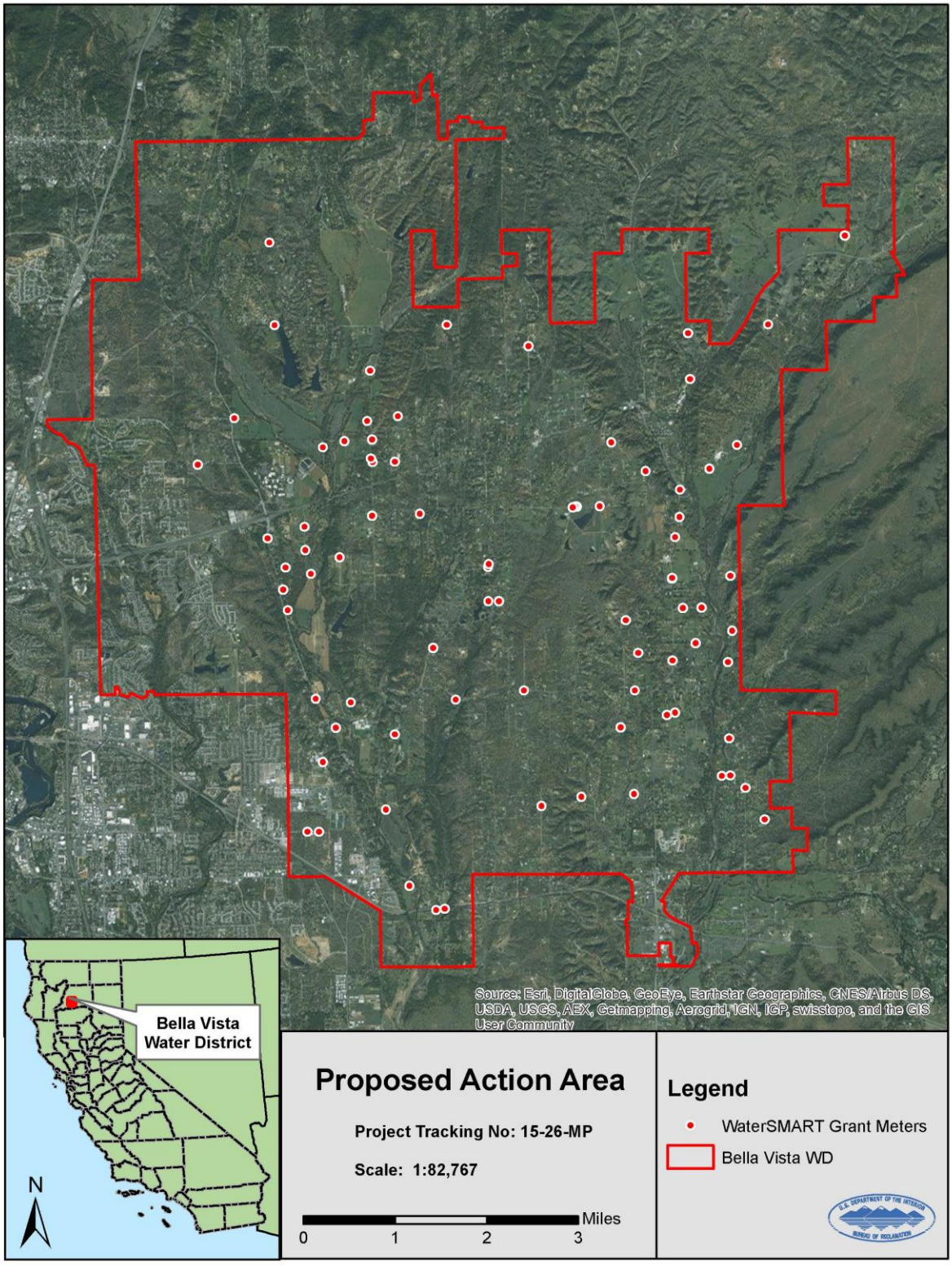
The closest ITA to the proposed BVWD Metering / Improvement (Insert activity name) activity is the 50F G5124 (Insert ITA name) about 2.75 miles to the northwest (approx.. compass direction) (see attached image).

Based on the nature of the planned work it does / does not (circle one) appear to

be in an area that will impact Indian hunting or fishing resources or water rights nor is the proposed activity on actual Indian lands. It is reasonable to assume that the proposed action will / will not have any impacts on ITAs.

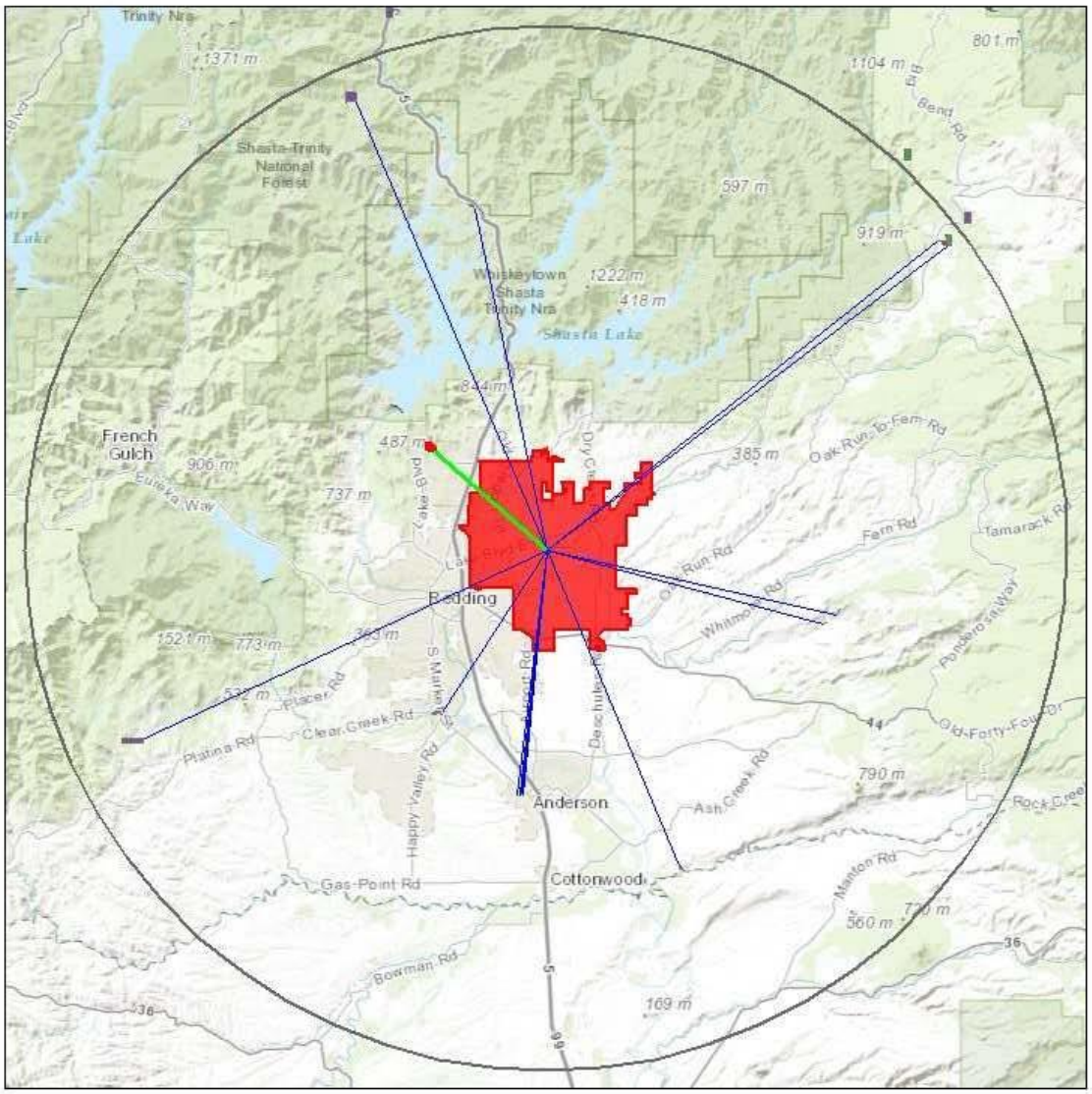
circle one

Signature	Printed name of approver	Date
	Kevin Clancy	1-19-2016



Bella Vista Water District
Advanced Metering, and
Water Conservation Improvements

Bella Vista Water District



Native American Lands FL

1:577,791

- PDA
- Rancheria
- Reservation
- <all other values>
- Alaska Native Regional Corporation
- Alaska Native Village Statistical Area
- American Indian Reservation
- Colony

RECLAMATION
Managing Water in the West

Appendix B: NHPA, Section 106 Compliance

Communication with the SHPO is in progress.

Appendix C: ESA, Section 7 Compliance

Informal consultation with the USFWS is in progress.