

RECLAMATION

Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

NOTICE OF INTENT TO AWARD

This Funding Announcement is not a request for applications. This announcement is to provide public notice of the Bureau of Reclamation's intention to fund the following project activities without full and open competition.

ABSTRACT	
Funding Announcement	Agreement No. R12AP35357
Project Title	La Jolla Irrigation Multi-Phased Water Resources Plan
Recipient	La Jolla Band of Luiseno Indians
Principal Investigator / Program Manager	Rob Roy, La Jolla Band of Luiseno Indians
Anticipated Federal Amount	\$1,002,312
Cost Share	\$0.00
Total Anticipated Award Amount	\$1,002,312
New Award or Continuation?	Continuation
Anticipated Period of Performance	September 26, 2012 through September 25, 2017
Award Instrument	Grant Agreement
Statutory Authority	Consolidated Appropriations Resolution, 2003: Div D Energy and Water Development Appropriations, 2003; Title II Sec 201. P.L.108-7, as codified in 43 USC 373d.
CFDA # and Title	15.519– Indian Tribal Water Resources Development, Management, and Protection
Single Source Justification Criteria Cited	Continuation of existing project
Reclamation Point of Contact	By mail: Bureau of Reclamation Attn: Shawna M. Thompson P.O. Box 61470 Boulder City, NV 89006 By Phone: 702-293-8570 By E-mail: smthompson@usbr.gov

OVERVIEW

The La Jolla Band of Luiseño Indians and its Reservation are situated in the San Luis Rey Watershed in Northern San Diego County, California. The region frequently experiences drought conditions that have significant impacts on the people, the economy and the natural resources of the Reservation. This Tribal Irrigation Water System, Multi-Phase Project Plan (Irrigation Plan) is intended to prepare the Tribe for future drought by guiding the implementation of irrigation system improvements that will alleviate the effects of drought on the tribal community.

The Tribe consists of approximately 693 Tribal members that are governed by a five member Tribal Council. The Council is elected by Tribal members over the age of 21. There are 179 Tribal homes on the La Jolla Reservation. During periods of drought, available Tribal water sources dramatically decline. Drought also increases the severity and frequency of wildfires, and adversely affects the health of Tribal forests, by weakening trees and spreading insect infestation and disease. Thus drought increases the need for additional water supply for human use and for fire suppression; at the same time that drought decreases the availability of water.

The completed emergency drought project funded by Reclamation successfully enhanced the Tribe's ability to collect surface water for irrigation, fire suppression and construction, which partially reduced demand on potable water supplies. And the Drought Contingency Plan provided an excellent analysis of current conditions and a helpful framework for monitoring and mitigating drought. The Drought Plan also helped the Tribe to prioritize needed projects to better manage the effects of drought. Now, the Tribe needs assistance with implementation of the Tribe's identified priority projects. To accomplish these goals, we propose a multi-phase plan comprised of several distinct, yet related projects. Each project is an important part of the overall plan, but each project can also be implemented independently.

RECIPIENT INVOLVEMENT

The La Jolla Band of Luiseño Indians (Tribe) is working to reduce demand on limited potable water supplies and improve efficiency through a multi-phased plan. The Tribe is implementing the priority projects previously detailed in the La Jolla Drought Contingency Plan submitted to Reclamation in 2009.

The main goals are as follows:

1. Technical assessments of the Tribe's irrigation systems
2. Improvements to irrigation water supply and distribution systems
3. Renewable energy supply for a water disinfection system
4. Enhance non-potable water supply for fire fighting
5. Rainwater catchment systems for isolated homes
6. Improve water management and conservation

The La Jolla Tribe intends to primarily use force account staff for the work effort.

The following are the tasks outlined to be provided through this funding agreement:

Task 1. Eastern Irrigation System Technical & Engineering Review

The Tribe will conduct an assessment of existing irrigation system infrastructure on the eastern side of the Reservation and create a Technical and Engineering Review (TER) for expansion of the system. This project will be completed by La Jolla tribal staff, contractors, and Bureau of Reclamation staff. The purpose is to study and document existing infrastructure, and develop detailed recommendations for future improvements. The Eastern TER will not involve construction. Project tasks will include creating accurate GIS maps and engineering plans of all existing irrigation system infrastructure. Using these maps and plans, they will develop engineering plans for future expansion of the irrigation system, in order to bring surface water from tribal irrigation intakes and distribute it to residents for outdoor irrigation use. Deliverable items will include GIS maps/plans of existing irrigation infrastructure, along with engineering plans for future irrigation system improvements and wharfheads for emergency fire suppression.

The Eastern irrigation system has three surface water intake structures. Two intakes are on Cedar Creek and one intake is on Yapitcha Creek. The upper Cedar Creek intake feeds a 6" line, leading to a 16,000 gallon storage tank. The water then flows to an 8" main distribution line that serves homes on and near Church Road. The lower Cedar Creek intake feeds an 8" line, leading to a 10,000 gallon storage tank. The water then flows to homes in Poomacha via a 6" main distribution line. Poomacha is also home to the Tribe's Community Park. The Poomacha area needs year-round irrigation water in order to sustain fruit and vegetable gardens, and also to sustain an important native plants area.

The Tribe desires to connect the upper Cedar Creek system, the Yapitcha Creek system, and the lower Cedar Creek system. This will provide for more effective year-round water management. The combined irrigation systems would be connected to an existing 31,000 gallon water storage tank that is unused. The Tribe will then expand the Eastern irrigation system to bring irrigation water to more Tribal homes and gardens. This will reduce water demand on the Eastern potable water system.

This project also includes conducting an Irrigable Lands Assessment (ILA) of the Eastern Reservation. The goal is to accurately map and assess tribal lands that may be suitable for growing marketable crops, including vineyards, avocados, fruit and nut orchards, and other useful plants.

Task 2. Western Irrigation System Technical & Engineering Review

The Tribe is requesting financial assistance from Reclamation to conduct an assessment of existing irrigation system infrastructure on the western side of the Reservation and to create a Technical and Engineering Review (TER) for expansion of the system. This project will be completed by La Jolla tribal staff, contractors, and Bureau of Reclamation staff. The purpose is to study and document existing infrastructure, and develop detailed recommendations for future improvements. The Western TER will not involve construction. Project tasks will include creating accurate GIS maps and engineering plans of all existing irrigation system infrastructure. Using these maps and plans, they will develop engineering plans for future expansion of the irrigation system, in order to bring surface water from tribal irrigation intakes and distribute it to

residents for outdoor irrigation use. Deliverable items will include GIS maps & plans of existing irrigation infrastructure, along with engineering plans for future irrigation system improvements and wharfheads for emergency fire suppression.

The Western irrigation system currently has one surface water intake structure and one non-potable well. The irrigation intake on J.M. Creek feeds a 4" line, leading to three irrigation water storage tanks with a total capacity of 42,000 gallons. The water then flows into a 4" main distribution line that ends at a wharfhead, just above Tribal homes on Harold's Road. The non-potable well is used to pump water into a 36,000 gallon water storage tank via a 6" pipeline. The pump and generator system were recently repaired with BOR funding (Project 10 – Pasall Road Fire Suppression). Non-potable water exits the tank via a 6" line and flows to wharf heads near a housing area on Pasall Road.

The Tribe desires to expand the Western irrigation system to include homes adjacent to Harold's Road and Pasall Road. The Western part of the Reservation is very short of water and needs year-round irrigation water in order to irrigate Tribal fruit and vegetable gardens, and also to provide for emergency fire suppression. This project will increase the Tribe's ability to distribute irrigation water on the Western Reservation and will reduce water demand on the Western potable water system.

This project also includes conducting an Irrigable Lands Assessment (ILA) of the Western Reservation. The goal is to accurately map and assess tribal lands that may be suitable for growing marketable crops, including vineyards, avocados, fruit and nut orchards, and other useful plants.

Task 3. Groundwater Monitoring Wells – La Jolla Reservation

The La Jolla Tribe is completely dependent on limited Reservation water resources for potable water, irrigation water and emergency fire suppression. The La Jolla Reservation is located in a remote area and has no access to imported water or any other water source. To better manage Tribal water resources during times of drought, the Tribe has developed a BOR-approved Drought Contingency Plan. The Drought Plan directs tribal managers to continually monitor Tribal water resources and to use the monitoring data as a guide for implementation of drought measures when necessary.

During a drought, the Tribe implements water-use restrictions for Reservation residents when water levels in community wells drop too low. To track this, the Tribe has established an integrated monitoring program to assess Reservation ground and surface water resources. The monitoring program includes rain gauges, stream gauges, groundwater sensors, and water-quality sensors. But the Tribe needs more groundwater monitoring wells in key areas, in order to better assess groundwater conditions and to investigate the potential for new water resources. The goal of this project is to help the Tribe better understand and manage Reservation groundwater aquifers in the face of drought, and to ensure a safe and reliable water supply for tribal residents.

Project Approach - This project is divided into three sub-tasks: (3a) Hydro-Geologic Study and NEPA Study, (3b) Test Wells Drilling, (3c) Monitoring Wells Development. Planning and budgeting for this project is also divided into three sections, based on sub-tasks. The Task 3a budget is for the hydro-geologic study and NEPA Study. The Task 3b budget is for drilling up to

16 test wells. And the Task 3c budget is for developing 6 of the test wells into monitoring wells. Much of the work will be carried out in a phased approach, based on sub-task. However, some test well drilling will be conducted while the hydro-geologic study is still being performed, because the Tribe has already identified 2-3 potential test well sites as part of a recent EPA grant project (Tribal Border Infrastructure). The EPA project identified potential test well sites, but did not have enough funds to drill the wells.

Task 3a: Hydro-Geologic Study of La Jolla Reservation - In Task 3a, the Tribe will hire a consultant to perform a Hydro-Geologic Study of the La Jolla Indian Reservation. The study will map the hydro-geology of the Reservation and determine where monitoring wells should be located. The study will include Fracture-Trace Analysis of faults and fractures on and near the Reservation that may indicate potential water sources. It will also include Very Low Frequency (VLF) and/or similar geophysical sensing, to investigate sub-surface geological structures. The Tribe will use information from this study as a guide to help determine the locations of test wells that will be drilled in Task 2. For some well sites, NEPA studies will be required before site preparation or test well drilling can begin. For these sites, qualified Tribal staff will work with BOR staff to conduct proper NEPA environmental and cultural studies of the test wells sites.

Task 3a: Hydro-Geologic Study of La Jolla Reservation

- Hire a Contractor to conduct a Hydro-Geologic Study of the Reservation.
- Include fracture-trace analysis, fault-mapping and VLF studies as needed.
- Use Hydro-Geologic Study to determine sites & depths for 16 test wells.
- Work with BOR Staff to perform NEPA & cultural studies of well sites.

Task 3b: Test Well Drilling on La Jolla Reservation - For Task 3b, the Tribe will hire a qualified well-drilling company to bore up to 16 Test Wells, at locations recommended by the Hydro-Geologic Study. The wells will be drilled to different depths, depending on site-specific geology. Some wells may be drilled horizontally, if site geologic conditions recommend it and the project budget allows it.

- Tribe will hire a Drilling Contractor to drill 16 test wells.
- Tribe will prepare test wells sites for drilling equipment setup.
- Preparation of test well sites will include erosion control measures.
- Drilling Contractor will commence drilling activity for 16 test wells.
- Tribe may direct Hydro-Geologic Contractor to monitor well drilling logs.
- Depending on drilling results, Drilling Contractor will pump-test selected wells.
- Depending on drilling results, water quality analysis will be done for selected wells.
- Drilling Contractor will prepare well reports with drilling logs and pump test results.
- Drilling Contractor will submit test well reports to the Tribe and Bureau for review.

Task 3c: Develop Groundwater Monitoring Wells - For Task 3c, the Tribe will hire a qualified Well Contractor to construct up to 6 Monitoring Wells. Based on actual test well drilling results, 4-6 selected test wells will be bored out to a larger diameter and mild steel well-casing installed. Sanitary-seals will be installed to protect groundwater from surface water intrusion. Small well pumps will be installed to enable water quality analysis of groundwater aquifers. Well monitoring tubes with automated groundwater monitoring sensors may also be installed, to

enable aquifer monitoring of groundwater levels over time. The new monitoring wells will be incorporated into the Tribe's integrated water resources monitoring program.

- Tribe will hire a Drilling Contractor to develop 4-6 monitoring wells.
- Drilling Contractor will ream out selected test wells to larger diameter.
- Drilling Contractor will install 0.25-inch steel well casing inside the wells.
- Drilling Contractor will install well-casing screens at the appropriate depths.
- Drilling Contractor will install proper sanitary seals into each monitoring well.
- Drilling Contractor will submit well reports to the Tribe and Bureau for review.
- Tribe will perform one Title 22 water quality analysis for each monitoring well.
- Tribe will perform quarterly water quality analysis for each monitoring well.
- Tribe will monitor water levels daily or weekly for each monitoring well.
- Tribe will use monitoring well data to assess tribal water resources.

Task 4. Renewable Power for Water Pumps

The La Jolla Indian Reservation enjoys sunny days year-round and is in a class 5250-5500 kWh/Year solar power area, with 5.5kW hours of peak solar gain per meter of PV panel. Yet the Tribe spends a large amount of scarce funding each year for electricity to power community water pumps – and this is the single greatest water system expense after wages. Recently, the Tribe has been working with a non-profit organization to install photovoltaic (PV) systems for low-income homeowners and these systems have been very successful. Through this work, tribal staff have gained the experience required to install PV systems including design, installation, inspection and the operational permitting process. Staff have also been working with the California Center for Sustainable Energy (CCSE) to learn more about renewable energy, and the CCSE is interested in providing ongoing guidance and assistance to La Jolla to identify opportunities for energy conservation and sustainability. The CCSE has provided oversight for home PV systems installed at La Jolla, under the California Public Utilities Commission Single-Family Affordable Solar Homes. The CCSE is a non-profit organization dedicated to creating change for a clean energy future. (<http://energycenter.org/>)

Solar energy maps show there is a great potential to generate solar power for the Tribe's community potable water pumps. This would greatly reduce pump operating costs and allow the Tribe to put the savings to other needed uses. It would also enable the Tribe to use a renewable energy resource while reducing the production of green-house gases. We propose to conduct a demonstration project to install grid-connected solar power generation at one of the Tribe's water pump-houses, to test the viability of generating and using renewable power in this manner. This project would follow the Tribe's energy plan by promoting renewable power production and energy conservation on Tribal lands and greenhouse gas reductions for the region as a whole.

A preliminary study to review the water department electricity bills has shown a demand of approximately 39kW. There are at least two viable options for designing and installing PV systems. The first is to use available grant funding to install one or more PV systems. With the funding currently available, this would likely be in the range of about 10kW. The second would be to use the available funding as an initial payment for installing a 39kW system and enter into a Power Purchase Agreement (PPA) with the local or other utility. The funds normally spent on the monthly electrical bills would be used to buy down the financing of the PV system over time.

The Tribe would be eligible for an incentive under the California Solar Incentive (CSI) program administered by the CCSE and should receive the higher government/non-profit rate for installed PV systems. The current rate in step 8 is \$1.10 per watt. There are currently 5.81 MW's remaining in step 8 with 1.89 MW's currently in review. The incentive amount then drops to \$0.90 per watt in step 9 and to \$0.70 in step 10, the final step.

Based on the initial data obtained, to install the full capacity needed to offset all costs they would need three separate PV systems (9kW, 11kW, and 19kW) for three separate pumps. If they don't go that route, they could instead use the available grant funding for this task to install approximately 10kW. The final decision will be decided through continued discussions with the Bureau and the CCSE.

They are also looking into the current rate structure for Tribal Water Department electric bills. A Time of Use tariff rate may be beneficial if the majority of the electric use is between the hours of 10:00 PM and 6:00 AM. There is also the possibility of eventually purchasing power at a lower, government rate. Both of these options would reduce costs over time and will be considered.

Project Tasks:

- Tribe will determine final requirements for water pump PV system(s).
- Tribe will determine most cost effective and viable options for PV installation.
- Tribe will review options and consult with BOR staff to develop final proposal.
- Tribe will contract with a qualified solar company to install PV system(s).
- PV system(s) will be installed on or near existing well pump infrastructure.
- Tribe will work with SDG&E to ensure PV system(s) meets requirements.
- Tribe will obtain Permission to Operate PV System(s) from SDG&E.
- Tribe will consider other ways to further reduce electricity costs.

Task 5. Smart Water Meters for Water Conservation

Currently, the Tribe is not able to accurately quantify the water use of Reservation residents. This is due to a lack of water meters on homes and due to the time involved for meter reading. The Tribal Water Department has a modest Operations and Maintenance budget, and the water operators are stretched very thin to accomplish all necessary maintenance tasks and to comply with requirements of the EPA Safe Drinking Water Act. Reservation residents pay a flat monthly fee for water service.

The Tribe wants to show residents how much water they are using, with the goal of promoting water conservation and hopefully reducing demand on potable water supplies. This project would be the demonstration phase of a two or three phase project, starting with a limited number of residential homes and all commercial buildings. Eventually, smart water meters would be installed on all Tribal homes, depending on costs and available funding. For this demonstration project, they propose to install smart water meters on 6 Tribal administration buildings and, depending on costs, up to 20 Tribal homes to collect water usage information. It is anticipated that they will utilize a touch-read smart meter system, consisting of the Sensus AMR hand-held device and SR II meter or similar system, to collect meter information during normal water department operations. A final evaluation of the different smart meters available will be conducted to determine the most appropriate one for the Tribe. New water meter pits will need

to be constructed. Water operators will download usage data from the water meter to a hand-held device, and then transfer the data to their office computer. This will reduce the amount of time required by Water Department staff to read the meters, as they drive on roads near metered homes during the course of their normal duties. A touch-read system would be less expensive and require less maintenance than a radio transmission-type system.

With the collected water-use data, the Tribe can conduct education and awareness outreach to Reservation residents, showing them their usage and comparing it to an “average” home. They will use this opportunity to inform them about ways to conserve water. They will also use smart meter data to correlate home-use data with water-production data, to better monitor the water systems and help us detect any hidden water losses due to water line leaks and/or other losses.

Project Tasks:

- Identify the Tribal buildings and homes that will receive smart meters.
- Purchase and construct water meter pits (concrete boxes with related items).
- Purchase and install smart meters on 6 Tribal office buildings.
- Purchase and install smart meters on up to 20 Tribal homes.
- Monitor and maintain the smart meters on a monthly basis.
- Use data for water conservation, education and water system monitoring.

Task 6. Connect Water Park Tank to Poomacha Irrigation System

Note: This project is complete. It was funded in FY-2012 for \$26,992.22 and the actual project costs were \$10,354.69 (per July 2015 financial statements). The Tribe requests transfer of the unspent Task 6 funds (\$16,637.53) from this task to Task 10 (Fire Suppression Water).

Cedar Creek has two surface water intakes, the upper intake and the lower intake. The upper intake supplies irrigation water to the Church Road area of the Reservation. The lower intake supplies irrigation water to the Poomacha area of the Reservation, via the Poomacha irrigation pipeline. The surface water flows from the lower intake structure to the Poomacha area via gravity flow. The lower intake was recently repaired utilizing BIA/BAER funding – after the Poomacha Fire – and it is now functioning well.

The main goal of this project is to provide non-potable water year-round for irrigation of the Poomacha area, by connecting the Poomacha irrigation pipeline to the Water Park Well and Tank. Due to drought, surface water flows of Cedar Creek do not always reach the lower irrigation intake and the Poomacha Pipeline. When the stream runs dry, the Poomacha area currently uses potable water for landscape irrigation. With this project, non-potable water would be pumped during dry months from the Water Park Well into the Water Park Tank. The water could then flow into the Poomacha irrigation pipeline via a new 6” irrigation pipeline connection, per this project. This would provide for year-round irrigation of the new Poomacha Community Park and Tribal homes.

A second goal of this project is to build a new debris filter and sand trap for the Poomacha Irrigation System. Currently, surface water entering the irrigation system carries with it much sand and organic matter. These sediments tend to clog the irrigation pipeline. The Tribe desires to build a combined debris filter/sand trap that can remove most of the sand and organic matter from the irrigation water, right after the water enters the irrigation system. These two important

projects will help reduce demand on the Tribe's Domestic Water System by making non-potable water available year-round. It will also provide Poomacha with irrigation water for emergency fire suppression.

Phase I Tasks – Water Park Tank Connection:

- Locate and evaluate the 6" valve(s) at the Water Park Tank.
- Locate and evaluate the 6" valves located at the old Water Park.
- Locate and evaluate the 6" waterlines located at the Water Park.
- Determine if project can be implemented, based on items above.

A. Phase I Task List: Water Park Tank Connection

- 1) Find and test valve connections at the Water Park Tank. Determine which valves feed the tank and the operational condition of the valves.
- 2) Find and test valve connections feeding the Water Park. Make sure they are able to open and close valves in order to bypass the Water Park.
- 3) Locate the existing underground PVC waterline that feeds the Water Park Tank. If it is in good condition, they can connect the existing PVC water line to the newly replaced Poomacha Irrigation Pipeline (using the proper fittings).
- 4) Determine if this project is feasible, based on items 1-3 above.
- 5) It was determined that the Phase I project was Not feasible. The Tribe stopped work on Phase I and then completed work on Phase II. With Bureau approval, the unspent Project 6 funds were transferred to Project 10 – Fire Suppression Water for Pasall Road.

Phase II Tasks – Debris Filters Construction:

- Install (2) 6" PVC angles on Poomacha irrigation pipeline – at debris filter.
- Install 50 feet of 6" PVC pipe to connect debris filter to Poomacha pipeline.
- Build debris filter out of concrete blocks: 5' wide x 8' long x 40" tall.
- Install 8" gate valve on 8" PVC pipeline, above inflow to the debris filter.
- Install 6" gate valve on 6" PVC clean-out pipe, at low point of debris filter.
- Install 2" Channel Track to bottom and inside walls of debris filter structure.
- Install (3) stainless steel screens into the Channel Tracks, inside debris filter.
- Install 3/8" plate steel cover on top of debris filter (with lock).

B. Phase II Task List: Build Poomacha Pipeline Debris Filter

- 1) Tribe will locate the existing 8" steel Poomacha Pipeline where it passes under the Altitude Valve road. If feasible, Tribe will build a new debris filter/sand trap on top of the existing 8" pipeline, above the Altitude Valve Road, using separate inflow and outflow pipes.
- 2) Tribe will cut the 8" steel pipeline where the new debris filter/sand trap will be built.
- 3) Tribe will purchase and install (2) 90-degree angle fittings where irrigation water will enter and exit the new debris filter/sand trap.
- 4) Tribe will purchase and install (1) 6" gate valve at the low point, to be used for cleaning out the debris filter/sand trap.
- 5) Tribe will determine materials needed for construction of debris filter/sand trap.
- 6) Tribe will build a concrete foundation for the debris filter/sand trap.
- 7) Tribe will use 8" x 8" x 16" concrete blocks to build the debris filter/sand trap.
- 8) Tribe will install 3/8" steel plate, with locking mechanism, to secure debris filter.

- 9) Tribe will rent a backhoe to prepare work area; Water Department will provide operator.
- 10) Tribe will hire (2) Pipe Layers to install pipe/fittings and build the debris filter/sand trap.

Task 7. Connect Church Road Irrigation Systems

Note: This project is complete. It was funded in FY-2012 for \$11,473.16 and the actual project costs were \$8,832.09 (per July 2015 financial statements). The Tribe requests a transfer of unspent Task 7 funds (\$2,641.07) to Task 10 (Fire Suppression Water).

The Church Road area is served by two different irrigation systems: the Yapitcha Creek Irrigation System (Yapitcha Creek system) and the Upper Cedar Creek Irrigation System (Cedar Creek system). The Yapitcha irrigation pipeline originates at a surface-water intake structure on Yapitcha Creek to the northwest. The Cedar Creek irrigation pipeline originates at the upper Cedar Creek surface-water intake structure, to the northeast. Currently, these two irrigation systems are not connected.

The upper Cedar Creek surface-water intake was rebuilt a couple of years ago, as part of an emergency drought planning project. Reclamation funding was utilized to repair and enlarge the irrigation intake structure. The Cedar Creek system also includes a 16,000 gallon water storage tank, which is situated below the intake structure. Irrigation water flows from the storage tank to the Church Road area via a 6" irrigation pipeline. At present, the Cedar Creek system terminates at a wharf head on Church Road, approximately 260 feet east of the end of the Yapitcha Creek system.

The goal of this project is to install a section of new 8" irrigation pipeline to connect the Cedar Creek system with the Yapitcha Creek system. This is important because portions of the Yapitcha Creek system were destroyed by flooding and debris flows following the Poomacha Fire of 2007. The surface-water intake structure and two pipeline stream crossings were wiped out, and the Yapitcha Creek system cannot provide water to the Church Road area at present time. By connecting the Cedar Creek system to the eastern end of the Yapitcha Creek system, the Tribe will be able to supply irrigation water to the Church Road area, using good sections of the Yapitcha Creek system. The water will be used for irrigation, emergency fire suppression and for tribal construction projects.

It is important that this project be coordinated with the Church Road Improvement Project. Funded by the BIA, the improvement project will rebuild and repave all of Church Road. Because part of the pipeline alignment for the Church Road Pipeline Connection Project lies within the road right-of-way, the Tribe must install the new 8" irrigation pipeline before paving commences under the BIA Improvement Project.

Project Tasks – Connect Church Road Irrigation Systems:

- Evaluate and determine best route for connecting the existing pipelines.
- Evaluate and determine locations for fire suppression wharfheads.
- Purchase 260 feet of 8" irrigation pipeline, gate valves, and other materials.
- Install 260 feet of 8" irrigation pipeline to connect both irrigation systems.
- Inspect and repair or replace two existing 8" gate valves along Church Road.
- Pressure-test existing irrigation pipeline; repair any leaks that are found.
- Plan work in partnership with the Church Road resurfacing project.

- Finish all work in road before Church Road paving is complete.

Project Task List – Connect Church Road Irrigation Systems

- 1) Locate the existing underground 8” PVC irrigation pipelines that need to be connected on Church Road. Determine amount of new 8” PVC pipe needed to complete connection and the desired alignment for pipeline connection.
- 2) Find and test existing valve connections on the Cedar Creek and Church Road irrigation lines. Determine the condition of all valves.
- 3) Locate all lateral distribution pipelines coming off the main irrigation pipelines.
- 4) Determine how many gate valves, tees, wharfheads, and blow-off valves are needed, based on items 1-3 above; will need 8” cap near Clifford home.
- 5) Determine other materials needed for repair of existing irrigation pipelines; will need 8” gate valve and repairs where pipeline crosses road above Sipple home.
- 6) Develop final materials list and get price quotes from three vendors.
- 7) Hire Equipment Operator to operate backhoe and other equipment.
- 8) Hire Pipe Layer / Laborer to assist the Equipment Operator.
- 9) Hire Project Manager to manage this project.

Task 8. Yapitcha Creek Irrigation System Repair

Yapitcha Lane, on the eastern Reservation, is served by a surface-water irrigation intake on Yapitcha Creek. Normally, irrigation water flows from the intake through a 6” pipeline to Tribal homes in this area. But at present, the Yapitcha Creek irrigation intake is not connected to the distribution system, because the intake was destroyed by floods after the 2007 Poomacha Fire. The Tribe was able to partially rebuild the intake structure using a FEMA grant, but it requires more repair work and needs to be connected to the existing irrigation pipeline system. Repairs must also be made to the main distribution pipeline before the Yapitcha irrigation system can be put back into service.

They propose to repair the irrigation intake and install a 6” irrigation pipeline to connect the intake to the existing 6” distribution line that survived the flooding. They will then repair the 6” distribution pipeline and add two gate valves, in order to bring irrigation water to nearby Tribal homes. The gate valves will allow the Tribe to more effectively manage limited water supplies and will allow the Yapitcha Irrigation System to be connected to the Church Road/Cedar Creek irrigation system in the future. The repaired Yapitcha system will supply irrigation water to several homes on Yapitcha Lane.

In the future, they propose to connect the Yapitcha irrigation system to an existing non-potable water well, in order to supply irrigation water even during times of extreme drought. They also plan to connect the Yapitcha irrigation system to the Church Road irrigation system, to provide more options for managing the irrigation water. With future installation of wharf-heads and a water storage tank, the Yapitcha system will be able to provide irrigation water that can also be used for emergency fire suppression.

Project Tasks:

- Finish repairs to the Yapitcha Creek Irrigation Intake structure.
- Build a concrete/gabion cutoff wall at upstream end of intake structure.

- Install 6" steel irrigation pipe to connect intake to an existing 6" pipeline.
- Install 6" Tee and (2) gate valves at the lower end of existing 6" pipeline.
- Connect 6" pipeline to existing distribution line that feeds Tribal homes.
- Make additional repairs to irrigation distribution system as necessary.

Task 9. Connect Upper and Lower Cedar Creek Irrigation Systems

Cedar Creek has two surface water intakes, the upper irrigation intake and the lower irrigation intake. These irrigation intake structures are both situated on Cedar Creek, but are separated by about 3000 feet of horizontal distance. As part of an emergency drought planning project, Reclamation funding was recently utilized to repair the upper intake structure and it is now functioning well. The lower intake structure was damaged by floods following the 2007 Poomacha Fire and was repaired utilizing BAER/BIA funds.

The upper Cedar Creek intake supplies irrigation water to a 16,000 gallon storage tank located below the intake. Irrigation water then flows to the Church Road area of the eastern Reservation. At present, this upper system supplies water to a wharf head on Church Road that is used for irrigation, emergency fire suppression and construction projects. The lower Cedar Creek intake supplies irrigation water to a 10,000 gallon storage tank located below the lower intake. Irrigation water then flows to the Poomacha area of the eastern Reservation, including to the new Community Park and Gardens.

During the summer months, Cedar Creek often dries up between the upper intake and the lower intake. When this happens, stream flows are sufficient to supply irrigation water to the Church Road area, but dry up before reaching the lower irrigation intake. The goal of this project is to connect the upper and lower Cedar Creek irrigation systems, so that irrigation water can be supplied to both the Poomacha and Church Road areas on a year-round basis. This will help reduce potable water use on the Eastern Water System.

Project Tasks:

- Evaluate alternate routes for connecting irrigation pipelines.
- Determine the best route for connecting irrigation pipelines.
- Purchase an estimated 3000 feet of 6" PVC pipeline as required.
- Purchase 6" valves and other project materials as required.
- Install an estimated 3000 feet of 6" PVC pipeline as required.
- Install 6" valves and other materials to connect the irrigation systems.

Task 10. Fire Suppression Water Supply for Reservation

Note: This project is active and in process. It was funded in FY-2012 for \$30,455.61 but the project scope has been expanded to include building irrigation system debris filters. Total project costs are now estimated at \$107,733.59 (per estimate below).

The La Jolla Indian Reservation is at risk for severe and devastating wildfires. It is located on the southwest slope of Palomar Mountain, in San Diego County, California. The area is remote and rugged, dominated by coastal sage and oak woodland areas. The terrain is susceptible to extreme fire growth during drought conditions, as exemplified by the Poomacha Fire of fall 2007. This disastrous fire grew quickly and burned 97% of the Reservation, including 1/3 of all

Tribal homes. The problem is compounded by a lack of water for fire suppression, especially during severe drought. This project is intended to help remedy the situation, by providing additional water for fire suppression.

The Pasall Road area of the west side of the Reservation is where the Tribe is building new Tribal homes for the near-term future. An AMIHA-funded Tribal housing project is currently under way and 7 new homes have recently been built at the end of Pasall Road. 2 additional homes will be built in 2015/2016. The western PWSS will be extended to supply potable water to the new homes, but potable water supply is very limited for the western Reservation and there's a need to develop irrigation water for fire suppression.

Near Pasall Road there is an existing unused well with a diesel-powered generator, water pump, and 6" pipeline leading to a 36,000 gallon water storage tank. This system has not been used for several years and will require repair work, but the need for water is great and the infrastructure is thought to be in fairly good condition. Non-potable water exits the tank via a 6" line and flows to a wharf head near a housing area on Pasall Road. This water would be very acceptable for irrigation and fire suppression use. They propose to repair the generator and pump, rehabilitate the pipeline and tank, and install a new wharfhead. This would greatly increase the Tribe's capacity to store and distribute irrigation water for fire suppression in a part of the Reservation that greatly needs it.

A second goal of this project is to build new debris filters and sand traps for the Tribe's irrigation systems. Currently, surface waters entering irrigation lines carry sand and organic matter. The sediments can clog irrigation system pipelines and are harmful for Fire Truck pumps. The Tribe plans to build debris filters & sand traps that remove the sand and organic matter from the irrigation water, at the entry points to the irrigation systems. These projects will help reduce demand on the Tribe's Domestic Water System by making irrigation water available year-round for emergency fire suppression.

A. Project Task List – Fire Suppression Water for Pasall Road:

- Develop a materials list and get price quotes from three vendors.
- Hire a contractor to inspect the well and replace the submersible well pump.
- Hire a contractor to install a new submersible pump into the well. This includes repairing or replacing the pump electrical control system and installing a PVC sounding tube into the well. It may also include installing a new uptake pipe.
- Hire a contractor to inspect and repair the well pump electrical generator.
- Hire qualified Equipment Operators to operate backhoe and other equipment.
- Hire a skilled pipe layer/laborer to assist Equipment Operators with work.
- Install (1) 4" blow-off valve on irrigation pipeline – for pipeline clean-out.
- Install (2) 6" blow-off valves on irrigation pipeline – for pipeline clean-outs.
- Install (1) 6" gate valve at the water storage tank – at top of 6" pipeline.
- Install (2) Wharfheads on Pasall Road – with 2 ½" connections.
- Install (1) fire hydrant on Pasall Road for emergency fire suppression.
- Use Tribal Labor to place DG fill dirt on top of the 6" pipeline going to tank.
- Use Tribal labor to repair any leaks on the 6" pipeline to the water storage tank.
- Use Tribal labor to repair any leaks inside the irrigation water storage tank.

B. Project Task List – Build (2) Irrigation Sand and Debris Filters

- Locate existing 8" Cedar Creek pipeline and 4" JM Creek pipeline.
- Determine best locations to build new debris filters/sand traps.
- Rent Tribal backhoe to prepare work area for each debris filter/sand traps.
- Hire a qualified Equipment Operator to operate Tribal backhoe.
- Hire (2) skilled water operators to build debris filter/sand traps.
- Build a concrete foundation for each debris filter/sand trap.
- Use 8" x 8" x 16" concrete blocks to build debris filters/sand traps.
- Build debris filters/sand traps with separate inflow and outflow pipes.
- Build debris filters/sand traps with overflows, clean-outs and gate valves.
- Purchase and install (1) 90-degree angle pipe for each debris filter/sand trap, where irrigation water will enter the box.
- Purchase and install (1) vertical riser for each debris filter/sand trap, where irrigation water will exit the box.
- Purchase and install (1) 6" gate valve at low point, for cleaning out boxes.
- Attach 2" Channel Track to inside walls of debris filter/sand trap boxes.
- Purchase materials and build (3) redwood/stainless steel screens for each box.
- Install (3) redwood/stainless steel screens into the Channel Tracks for each box.
- Use stainless screens to filter out organic debris from irrigation systems.
- Install 3/8" steel plates, with locking mechanism, to secure top of boxes.

Task 11. Rainwater Catchment Demonstration Project

The La Jolla Indian Reservation has some of the highest rainfall totals of San Diego County, due to being located on the southwest-facing slopes of Mt. Palomar. Average annual rainfall for the Reservation ranges from 20-60 inches per year, depending on location. For a Tribal home with an average 1400 square-foot roof, this equates to a minimum annual rainfall runoff from each home's roof of approximately 17,500 gallons:

- (a) 20 inches average annual rain = 1.67 feet of rainwater per year (average)
- (b) 1.67 feet rainwater x 1400 square-foot roof = 2338 cubic feet of water (per year)
- (c) 2338 cubic feet water = 17,488 gallons of rainwater per year (average)

Within the Reservation, there are a few isolated Tribal homes in areas not served by the Tribe's potable community water systems (PWSS). Tribal homeowners that lack piped potable water must have water trucked in at very high cost. They must then store the water in their personal storage tanks. This is expensive and inefficient.

The Tribe proposes a demonstration project that will install two rainwater catchment systems on two isolated homes. This project will demonstrate the viability of rainwater catchment to all Tribal homeowners, whether on community water systems or not. It will also demonstrate the water conservation benefits of rainwater catchment. This would help reduce demand for limited potable water supplies on the Reservation, by making rainwater available for landscape irrigation. Initially, this project will benefit two isolated Tribal homes. But in the future, all homes on the Reservation would benefit from the installation of effective rainwater catchment systems.

They have studied various rainwater catchment systems and solicited quotes from suppliers in various parts of the United States. The systems will be comprised of gutters to catch runoff from

the home roofs, water storage tanks, pipes to bring the water into the tanks, and small water pumps to pump the water out of the tank for landscape irrigation use.

Project Tasks:

- Design rainwater catchment systems for two Tribal homes.
- Purchase rain gutter materials from a local hardware supplier.
- Purchase rainwater catchment system materials from supplier(s).
- Use Tribal labor to install rain gutters on two isolated Tribal homes.
- Use Tribal labor to install two rainwater catchment systems.

Task 12. Update the La Jolla Drought Contingency Plan

The La Jolla Indian Reservation is located in northern San Diego County, California. This region often experiences drought conditions that can have significant impacts on the people, the economies and natural resources found there. Because of this, in 2009 the La Jolla Tribe developed a Drought Contingency Plan (Drought Plan) to guide and direct the Tribe's activities during drought. Working with the Bureau of Reclamation, the Tribe formally adopted mechanisms for monitoring environmental conditions related to drought, deciding when to activate the Tribe's Drought Task Force, identifying proper response actions, and implementing water conservation measures to alleviate the effects of drought in the La Jolla tribal community.

The Drought Plan was developed with funding from the Bureau of Reclamation, under authority provided by the Reclamation States Emergency Drought Relief Act of 1991 (Public Law 102-250). The Act authorizes the Secretary of the Interior to "undertake construction, management and conservation activities that will minimize, or can be expected to have an effect in minimizing, losses and damages resulting from drought conditions". The Tribe uses the Drought Plan to be self-determined in the declaration of drought on the La Jolla Reservation and to implement identified drought mitigation activities. Importantly, the Drought Plan should be reviewed and amended as needed every two years, to ensure the accuracy and effectiveness of the Plan.

Task 12 – Update the Drought Contingency Plan

The purpose of this project is to perform a much-needed review and update of the Tribe's Drought Plan. The review will include the following work-plan actions: (a) identify the individuals, programs and departments that will take action during drought conditions; (b) review and decide the types of environmental monitoring needed to identify the onset of drought conditions; (c) review and decide which environmental conditions shall be "primary triggers" for declaring the onset of drought conditions; (d) determine the response activities that each entity is responsible for under different drought conditions; (e) identify the water resources that can be utilized in the event of severe drought (our present condition); (f) identify drought mitigation measures that can be implemented to help reduce the effects of drought in the future; (g) contract with a professional to review and provide input on the details of the revised Drought Plan.

The La Jolla Tribe will select a project manager and a researcher/writer to begin the process of updating the Drought Plan. The Drought Task Force will then meet to discuss the goals of this project and to form a committee to provide assistance. After sufficient progress has been made, the Drought Task Force will meet again to discuss proposed changes to the Drought Plan.

Depending on input from the Drought Task Force, a Tribal Community Meeting may be held to solicit input from Tribal members on the Drought Plan update and to increase awareness of water conservation issues. Upon final approval of the revised Drought Plan, the Plan will be announced to the Tribe through publication of written notifications to the General Council and the Tribal Council.

Task 12 – Project Tasks:

- Identify responsible Tribal individuals, programs and departments.
- Decide types of environmental monitoring needed to identify drought.
- Decide the “triggers” that will be used to declare onset of drought conditions.
- Determine response actions for each entity under different drought conditions.
- Identify the water resources that can be utilized in event of severe drought.
- Identify drought mitigation measures to reduce effects of future drought.
- Contract with drought professional to provide input on Drought Plan.

RECLAMATION INVOLVEMENT

No substantial involvement on the part of Reclamation is anticipated for the successful completion of the objectives to be funded by this award. It is anticipated that Reclamation’s involvement will consist of standard federal stewardship responsibilities such as monitoring project performance, technical assistance at the request of the recipient, etc.

SINGLE-SOURCE JUSTIFICATION

DEPARTMENT OF THE INTERIOR SINGLE SOURCE POLICY REQUIREMENTS
Department of the Interior Policy (505 DM 2) requires a written justification which explains why competition is not practicable for each single-source award. The justification must address one or more of the following criteria as well as discussion of the program legislative history, unique capabilities of the proposed recipient, and cost-sharing contribution offered by the proposed recipient, as applicable.
In order for an assistance award to be made without competition, the award must satisfy one or more of the following criteria: (1) Unsolicited Proposal – The proposed award is the result of an unsolicited assistance application which represents a unique or innovative idea, method, or approach which is not the subject of a current or planned contract or assistance award, but which is deemed advantageous to the program objectives; (2) Continuation – The activity to be funded is necessary to the satisfactory completion of, or is a continuation of an activity presently being funded, and for which competition would have a significant adverse effect on the continuity or completion of the activity;

- (3) Legislative intent – The language in the applicable authorizing legislation or legislative history clearly indicates Congress' intent to restrict the award to a particular recipient of purpose;
- (4) Unique Qualifications – The applicant is uniquely qualified to perform the activity based upon a variety of demonstrable factors such as location, property ownership, voluntary support capacity, cost-sharing ability if applicable, technical expertise, or other such unique qualifications;
- (5) Emergencies – Program/award where there is insufficient time available (due to a compelling and unusual urgency, or substantial danger to health or safety) for adequate competitive procedures to be followed.

Reclamation did not solicit full and open competition for this award based the following criteria:

(4) UNIQUE QUALIFICATIONS

The tribe is the only entity with unlimited authority to work on the tribal land, qualifying only them to complete this work.

Single Source Justification Description:

This Program is a continuation of existing project administered in accordance with the authority of the Consolidated Appropriations Resolution, 2003: Div D Energy and Water Development Appropriations, 2003; Title II Sec 201. P.L.108-7, as codified in 43 USC 373d.

STATUTORY AUTHORITY

Statutory Authority P.L. 108-7, div. D, title II, Sec. 201, 117 Stat. 144, dated February 20, 2003 (43 USC 373d)

SEC. 201. In order to increase opportunities for Indian tribes to develop, manage, and protect their water resources, in fiscal year 2003 and thereafter, the Secretary of the Interior, acting through the Commissioner of the Bureau of Reclamation, is authorized to enter into grants and cooperative agreements with any Indian tribe, institution of higher education, national Indian organization, or tribal organization pursuant to 31 U.S.C. 6301–6308. Nothing in this Act is intended to modify or limit the provisions of the Indian Self Determination Act (25 U.S.C. 45 et seq.).