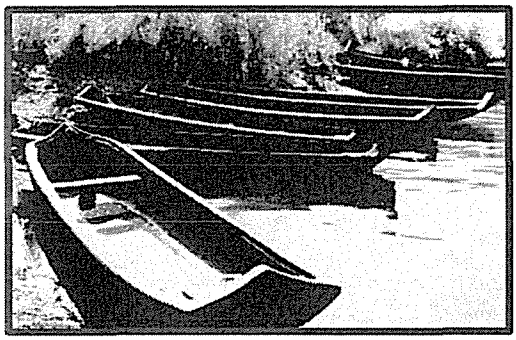
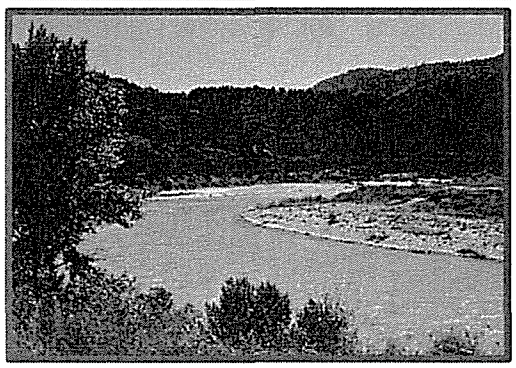
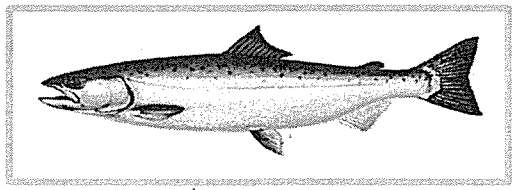
Conserving Waters of the Hoopa Valley Indian Reservation

U.S. Bureau of Reclamation –
WaterSMART: Water and Energy Efficiency Grants for FY2013
Funding Opportunity Announcement No. R13SF80003





Hoopa Valley Tribe
Hoopa Valley Public Utilities District (HVPUD)
PO Box 656
200 Loop Road
Hoopa, CA 95546
530-625-4543 (P) / 530-625-4112 (F)
Barbara Ferris, HVPUD General Manager
babsferris@yahoo.com

Table of Contents

A. Technical Proposal 1

I. Executive Summary 1

II. Background Data 2

a. Geographic Location 5

b. Sources of Water Supply 6

c. Water Rights Involved 7

d. Current Water Uses and Number of Users Served 7

e. Current and Projected Water Demand 7

f. Potential Shortfalls in Water Supply 7

g. Major Crops and Total Acres Served 8

h. Water Delivery System 9

i. Energy Efficiency Elements 10

j. Past Working Relationship with Bureau of Reclamation (BOR) 10

III. Technical Project Description 12

a. Water Management and Delivery 14

IV. Evaluation Criteria 15

a. Evaluation Criterion A: Water Conservation 15

b. Evaluation Criterion B: Energy-Water Nexus 20

c. Evaluation Criterion C: Benefits to Endangered Species 22

d. Evaluation Criterion D: Water Marketing 24

e. Evaluation Criterion E: Other Contributions to Water Supply Sustainability 24

f. Evaluation Criterion F: Implementation and Results 32

g. Evaluation Criterion G: Additional Non-Federal Funding 36

h. Evaluation Criterion H: Connection to Reclamation Project Activities 36

V. Description of Performance Measures 37

B. Environmental Compliance 37

C. Required Permits or Approvals 40

D. Project Budget 40

a. Funding Plan 40

b. Budget Proposal 42

c. Budget Narrative 43

d. Budget Form SF-424C 45

E. Commitment Letters 46

F. Official Resolution 46

VI. Exhibits

A. Cooperative Working Agreement between the Tribe and NRCS 49

B. Memorandum of Understanding between the Tribe, HVPUD, and NRCS 55

C. Matilton Field Plan Map 57

D. Soctish Field Plan Map 58

E. USDA Custom Soils Report Map for the Hoopa Valley 59

F. HDPE Industry Standards Information 61

G. HVPUD Indirect Cost Rate Agreement 62

Figures

1. Hoopa Valley Indian Reservation Districts or "Fields" 2
2. Hoopa Valley Indian Reservation 3
3. Horse Plowing Field in Hoopa 3
4. Trinity River Watershed Emphasis within the Klamath Basin 5
5. General Project Location Map 6
6. Hostler Creek 9
7. Signing of the ROD by Secretary of the Interior Bruce Babbitt and Hoopa Valley Tribal Chairman Duane Sherman 11

Tables

1. Number of Users by Field 7
2. Agricultural Lands Breakdown for the Proposed Project 8
3. Agricultural Lands Breakdown for the Hoopa Valley 26
4. Summary of Non-Federal and Federal Funding Sources 41
5. Funding Group II Funding Request by Year 42
6. Funding Sources 42
7. Budget Proposal 42

A. Technical Proposal

I. Executive Summary

Date: January 17, 2013
Applicant Name: Hoopa Valley Public Utilities District, Hoopa Valley Tribe
Address: PO Box 656, 200 Loop Road
City: Hoopa
County: Humboldt
State: California
Contact: Barbara Ferris, HVPUD General Manager, babsferris@yahoo.com, 530-625-4543

Project Summary and Task Areas:

The Hoopa Valley Public Utilities District (HVPUD), a sub-entity of the Hoopa Valley Tribe, is requesting **two years of funding under Funding Group II to commence July 1, 2013 and be completed June 30, 2015.** Proposed work includes survey, right-of-way easement acquisition, design engineering, environmental compliance, clearing and grubbing, mobilization and construction, reporting, and project management. Construction includes the replacement and improvement of the deteriorating systems at Matilton and Soctish Fields, which includes 200 users. An estimated 20,225 linear feet of HDPE pipe will be used for these improvements, which include entrapment of the open ditches, laterals to serve each sub-field, and replacing cement and metal piping. This will result in a zero leak rate, increase life expectancy of improvements (50-100 years), and increase pressure to allow for on-farm improvements, such as sprinklers (**Tasks A, B, and C**). Both delivery and management systems will be improved by installing an infiltration gallery, pump, fish screen, meters, and valves (**Tasks A, B, and C**). Meters and valves will allow the Tribe to monitor usage, which they have never been able to do. This can lead to HVPUD's ability to assess fees, detect leaks, and assess stream draws (**Task A**). Valves can allow HVPUD to implement conservation-minded management schemes, such as rotational irrigation (**Task A**). Presently, domestic water is being utilized for irrigation purposes, creating a waste of chemical treatment that is flooding into fields, as well as creating excessive pumping costs, energy usage, and bills for users (**Tasks A and B**). By improving the total system efficiency and eliminating domestic supply for irrigation, more water will remain in the tributaries and rivers that are the lifeblood of the Hoopa people and continue to sustain the Tribe's ceremonial, subsistence, cultural, commercial, and other beneficial uses (**Task C**). Because of the project, an estimated 379 ac-ft of water may be conserved (35% of the annual supply) and a total of 1,086 ac-ft—100% within those systems— will be better managed (**Task A**). It will also result in energy savings of 97% of the gasoline used for routine visual monitoring and a similar 97% reduction in related CO^2 emissions (**Task B**). Lastly, this project will allow for continued and expanded conservation technical assistance from Natural Resources Conservation Service by to the Tribe and directly to farmers and ranchers.

II. Background Data

For thousands of years, the Na:tinixwe, now referred to as the Hupa, lived in dozens of villages along the Trinity River in mountainous northwestern California. Subsisting by hunting, fishing, and foraging, the surrounding mountains, rivers, prairies, and valleys provided a rich wealth of natural resources. At the heart of the ancestral territory of the Hupa, is the Hoopa Valley. Beginning in the 1850s, the arrival of non-Indigenous settlers and miners to the area—as a result of the California gold rush to the Trinity and nearby rivers—violently disrupted the Hupas' traditional way of life. As a means to protect the Hupa and other northern California indigenous peoples, the Hoopa Valley Indian Reservation (Reservation) was established by Executive Order in 1876. This twelve-mile square Reservation includes the Hoopa Valley and surrounding mountains. It includes over 92,000 acres of land, which is approximately half of the ancestral territory of the Na:tinixwe. More than 94% of Reservation lands are held in Tribal trust by the Hoopa Valley Tribe and individual assignments to Tribal members. Both natives and non-natives privately own the remaining lands in fee status. Streams and tributaries of the Trinity River divide the Valley floor into seven Districts, also known as "Fields" that correspond to ancient village sites: Campbell, Hostler-Matilton, Agency, Soctish-Chenone, Mesket, Norton, and Bald Hill (see Figure 1).

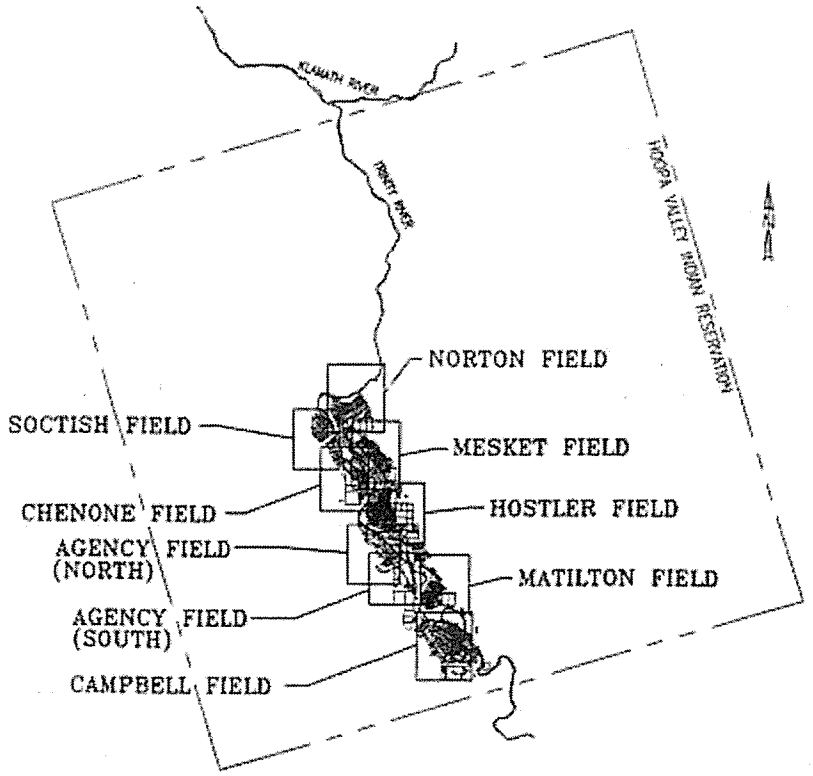


Figure 1. Hoopa Valley Indian Reservation Districts or "Fields"

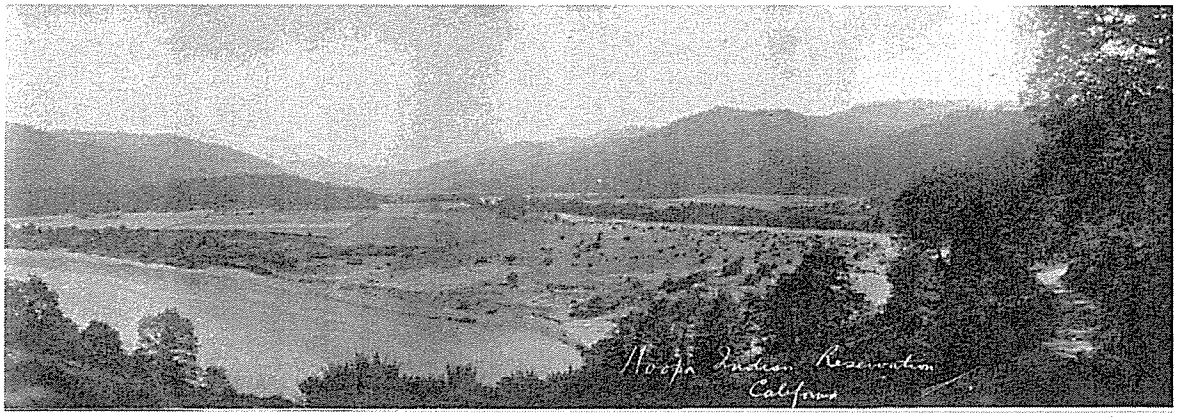


Figure 2. Hoopa Indian Reservation, California - Genzoli Collection at Humboldt State University.

In the early years of the Reservation, the government pushed for the development of agriculture as a potential means of economic development and self-sufficiency in the assimilation of resident Indians. Around 1890, the Indian Agency located on the Reservation began to impart agricultural practices on the Hupa; land was cleared, grains and orchards were planted, and ranches were established. By 1895, garden crops such as squash, corn, tomatoes, and cabbage and some 1,300 fruit trees were planted. The Bureau of Indian Affairs (BIA) constructed an irrigation system in the 1930s that sufficiently serviced all of the (then eight) Fields at that time. This original irrigation system derived from wells and streams that were conveyed by canals, flumes, cement pipe, and open ditches. Enough fruit, vegetables, and grain were being grown on the Reservation to export surplus to distant markets in Eureka and San Francisco, giving the valley the nickname of the "breadbasket" of northern California. After World War II, socioeconomic conditions changed. Locally, the timber industry became predominate and local farms subsided as improved transportation and industrialization of American agriculture lead to an increase in imported food. The uncertain land status of many irrigable acres because of the Jesse Short case also made it difficult for people to cultivate their lands, particularly for commercial purposes for nearly fifty years, until the Tribe regained full ownership to the land when the case was settled in the 1980s.

Figure 3. Horse Plowing Field in Hoopa - Genzoli Collection. Photo courtesy of Humboldt State University.

Despite the decrease in production, many residents in the Valley have continuously had family and multi-family farms, relying on the fresh foods and canning as primary and secondary food sources to ensure food security. Using pasturelands for horse boarding and small cattle operations has also continued since the early years of the Reservation and requires less irrigation than crop production. With the drastic decline of the timber industry since the 1990s and the increase in market interest in

organic food production, there is an opportunity to increase economic agricultural opportunities as well. Specialty Agriculture has been identified as a Target Industry of Opportunity for the region[1] and the Hoopa Valley certainly has the potential to expand this added dimension to the local economy. With an unemployment rate of 40%, high percentage of poverty[2], and remoteness, agrarian subsistence and market potential are particularly important.

The Hoopa Valley Public Utilities District (HVPUD) is a tribally chartered entity of the Hoopa Valley Tribe (Tribe) that provides domestic and irrigation water to the majority of the residents of the Reservation. In 1984, the Tribe compacted the total operations of the irrigation system within the Reservation from the BIA under a PL 93-638 contract. In turn, the Tribe delegated the irrigation responsibilities to the HVPUD who is equipped with trained personnel. The irrigation was expanded by HVPUD in 1985 to various parts of the Reservation, including the Campbell, Agency, Hostler, Matilton, and Soctish Fields. A total of approximately 12,200 feet of pipeline and appurtenances were installed as part of the original irrigation system. This includes the use of open ditches, surface diversions, and metal and cement piping. Since the funding provided by the BIA to install the irrigation in 1985, HVPUD has attempted to maintain this large system on the $46,500-$50,000/year provided by the BIA under the compact. **This funding has never been remotely adequate to maintain this system and there has never been an increase provided by BIA for the nearly 30 years of operation.**

Several professional studies analyzing water supplies and irrigation needs have been conducted for the Valley on behalf of HVPUD. Gordon Seversen outlined in detail several options for developing domestic water supplies from Mill Creek, Tish Tang Creek, and the Trinity River. Possible irrigation supplies were outlined in reports by Winzler and Kelly in 1973, the BIA in 1985, Omni in 1988, SHN in 1988, Spencer Engineering and Construction Management, Inc. in 1998, the Bureau of Reclamation, and by NRCS in 2002. In every study, conservation and/or source expansion are stressed in order to extend the agricultural capacity of the valley.

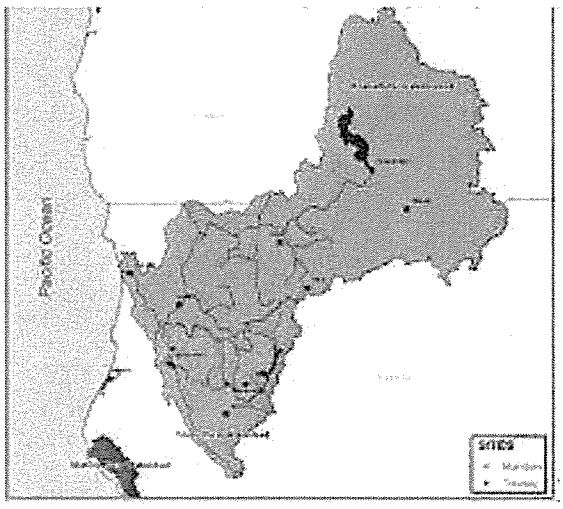
For the past 30 years, the Tribe and HVPUD have made consistent and repeated attempts to convince the BIA and/or Congress to increase funding for the operation, maintenance, and construction costs for the deteriorating and insufficient irrigation system as called out in these studies. In 1991, HVPUD Manager Barbara Ferris, testified to the Senate Select Committee on Indian Affairs Oversight Hearing on the Operation and Management of Indian Irrigation Projects. She was personally assured by Senator McCain that funds would be allocated, but that never materialized. The lack of adequate operations and maintenance funding has meant that even routine maintenance has been grossly insufficient. This has exacerbated problems with an out of date irrigation system of highly inefficient open ditches, cement and metal piping, a complete lack of meters to monitor usage and be able to assess fees, and a lack of valves to improve management.

[1] Humboldt County Workforce Investment Board. (2007) "The North Coast Targets of Opportunity." Eureka, CA.
[2] Bureau of Indian Affairs. (2005) American Indian Population and Labor Force Report. United States Department of Interior.

To begin to address the irrigation needs and conservation concerns of the Valley, the HVPUD entered into the U.S. Department of Agriculture (USDA), NRCS, Agricultural Water Enhancement Program (AWEP). Through this cooperative voluntary conservation initiative, AWEP provides financial and technical assistance to HVPUD to implement agricultural water enhancement activities on agricultural land to conserve surface and groundwater, as well as to improve water quality. As part of the Environmental Quality Incentives Program (EQIP), AWEP operates through established partnership agreements, which in this case, is with the HVPUD. In 2002, NRCS, the Tribe, and HVPUD entered into a Cooperative Working Agreement, "For their Cooperation in the Conservation of Natural Resources" (see Exhibit A). This was complemented by an indefinite Memorandum of Understanding, "Relative to Conservation Planning and Implementation" between NRCS and the Tribe (see Exhibit B). The purpose of these agreements was to outline a partnership focused on conservation within the Reservation. Although this partnership is certainly promising and there have already been several successful outcomes (see pages 27-28), there is a need for funding to be infused into the effort to continue to address these long-overdue irrigation system replacement needs.

The proposed project will address irrigation concerns in <u>Matilton and Soctish Fields</u> and significantly increase water and energy savings for HVPUD and users. For Matilton, an infiltration gallery will be placed in Captain John Creek and a total of ~10,050 linear feet of HDPE pipe will be installed and replace existing open ditch and metal and cement deteriorating piping (see Exhibit C for a conceptual design map). At Soctish, a small 40HP VPD pump with a fish screen will be installed in the river, a 50,000 gallon tank will be set, and ~10,175 linear feet of HDPE pipe will be installed to entrap open ditches, replace metal and cement piping, and extend laterals (see Exhibit D for a conceptual design map). Valves and meters will be installed in both Fields to better monitor usage, be able to assess fees, better manage rates and delivery, and detect leaks.

Figure 4. Trinity River Watershed Emphasis within the Klamath Basin



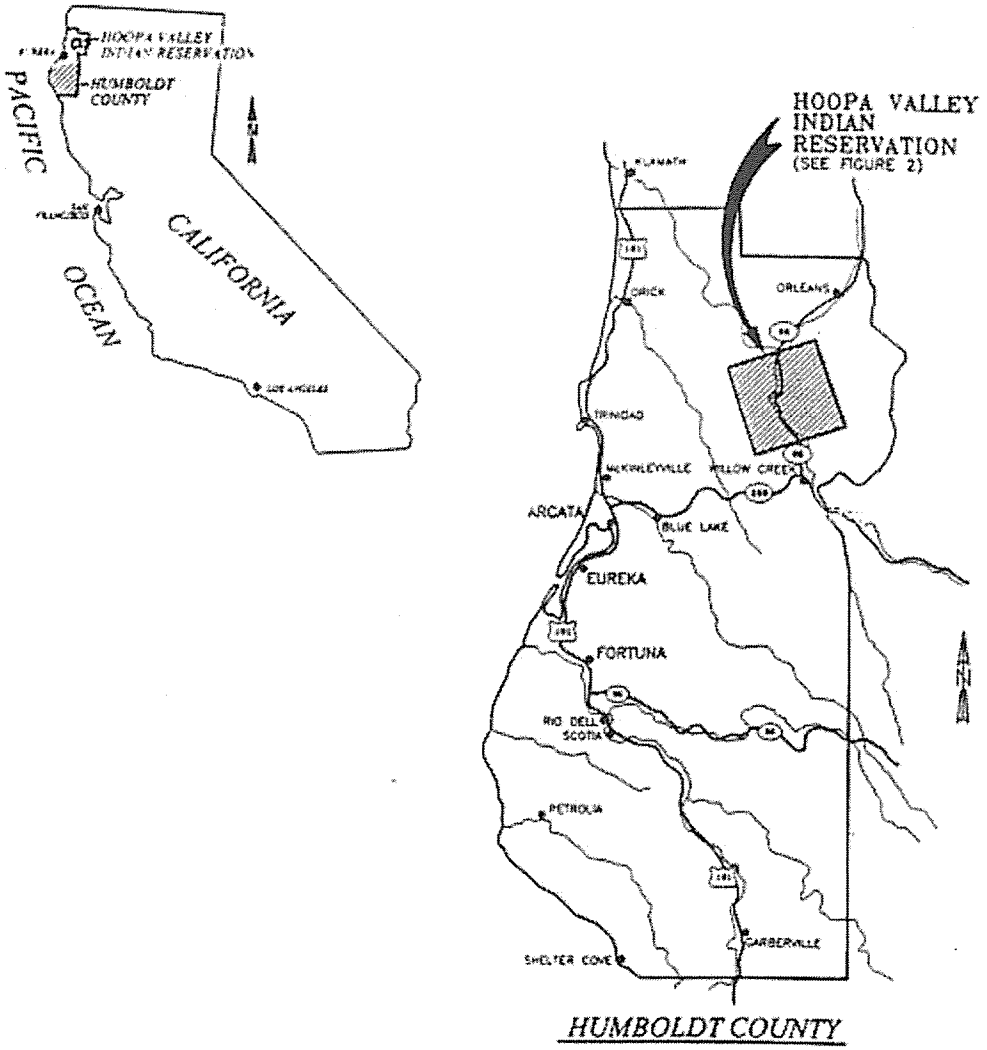
a. Geographic Location

The Hoopa Valley Indian Reservation totals over 92,000 acres of primarily timber and agricultural land in northwestern California. This remote river valley lies 300 miles north of San Francisco and 90 miles south of the Oregon border in Humboldt County— and 64 miles northeast of Eureka (see Figure 5 on the following page). It is located within the Trinity River watershed, the longest tributary of the Klamath River Basin (see Figure 4).

The Hoopa Valley is a conglomeration of alluvial terraces about 1 mile wide and 6 miles long with

3,500 acres comprising the valley floor. There are several streams flowing into the Trinity River as it bisects the valley. The climate is characterized by wet, cool winters with the occasional snowfall and warm dry summers. The mean annual rainfall is 57.2 inches, of which only 1.3 inches falling in the summer months. The mean annual temperature is 56.9°F with summer temperatures generally in the 90s and 100s and winter temperatures generally in the 30s to 50s.

Figure 5. General Project Location Map



b. Sources of Water Supply

The community of the Reservation depends exclusively on wells and tributary streams for its irrigation water supply. A minor draw from the river will result from the installation of a small 40HP pump to draw only when needed to supplement Soctish Creek during dry summers. Streams relied upon for Valley-wide irrigation includes Mill, Hostler, Captain John, Soctish, Supply, and Campbell Creeks. There are some residences in Matilton Field that currently use domestic water—

pumped by electricity from the Trinity River—for irrigation because of the improvements required for that Field. This, however, will be resolved by completing the proposed project and users will have gravity-fed pressurized creek water for irrigation.

c. Water Rights Involved

The Tribe is a sovereign nation with all water rights to streams flowing through the Reservation. They also own the bed of the Trinity River and have recognized water rights thereto for all of the Tribe's beneficial uses. This includes water necessary to protect the Tribe's federally-reserved fishing rights to salmon and other anadromous species for subsistence, ceremonial, and commercial purposes. The Tribe also has recognized jurisdiction over waters that flow into and through the Reservation, regardless of the geographic origins of water sources for purposes of Water Pollution Control.

d. Current Water Uses and Number of Users Served

Irrigation water in the Valley is used for family or multifamily food gardens at virtually every residence; the Kin-tah-te Community Garden and Orchard; Tsemeta Nursery, a tribal enterprise with organic fruits, vegetables, starts, and tree saplings for timber production; three income-producing organic vegetable and fruit enterprises; three income-producing livestock and forage enterprises, and one income-producing organic vineyard. The Hoopa Valley Tribe retains all water shares and there are approximately 200 users served in Soctish and Matilton Fields.

Table 1. Number of Users by Field

Field	No. of Users Served
Soctish	84
Matilton	116
TOTAL	**200**

e. Current and Projected Water Demand

The land status of the majority of parcels in these Fields is Tribal trust and Tribal assignment. This restricts parcel sale, division, and/or relinquishment to another individual by the resident. Thereby, the amount of actual growth is restricted. Irrigation availability also restricts a significant increase in agricultural expansion. Because of these restrictions, the agricultural water demands have remained fairly constant over the years and are anticipated to do the same in the future. Since there is no metering, the amount of irrigation water being used is unknown. This will be resolved with meter installation with the proposed project.

f. Potential Shortfalls in Water Supply

The entire Klamath Basin is currently under a BOR Basin Study to assess water allocations, needs, and water and other basin impacts from climate change. One such result can be drier summers and

increased opportunities for drought. This study has not, however, completed. For HVPUD, a potential shortfall of concern is major water loss as water is carried through the open ditches and canal systems, resulting in less available for irrigators and in some cases, none at all. Similar results occur from deteriorating and leaking pipes. Some parcels have not been irrigated for decades in Matilton and Soctish Fields because systems were turned off years ago because of the deteriorated state. Mill, Hostler, and Captain John Creeks have always be able to adequately supply their respective Fields (Norton and Mesket; Hostler; and Matilton).[3] Soctish Creek is often insufficient in the dry months and, therefore, will require a small 40HP pump to be installed in the Trinity River to supplant the stream feed to Soctish Field, as needed.

g. Major Crops and Total Acres Served

There is a net area of 2,578 acres of potentially irrigable land in the Hoopa Valley,[4] however, much of this lay fallow or has become overgrown. The most recent U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Custom Soil Resources Report for the Reservation identifies the majority of land in the valley has a Class 1 California Revised Storie Index designation (see Exhibit E for the map included from a Custom Soil Resources Report). This Index is a soil rating based on soil properties that govern a soil's potential for cultivated agriculture in California. As the map indicates, the majority of the valley floor is prime agricultural land (i.e. Class 1).

Irrigation water is used for family or multifamily food gardens, orchards, livestock, forage, landscaping, a nursery, and a vineyard. Major crops include hay; grape vineyards; a variety of organic fruits and vegetables, including white raspberries; Douglas-fir for timber production replanting; and irrigated pasture.

For the proposed project area, the following table provides a breakdown of agricultural lands by Field.

Table 2. Agricultural Lands Breakdown for the Proposed Project[5]

Field	Irrigable Acreage
Soctish	115
Matilton	200
Total	**315**

[3] Pers. comm. Barbara Ferris. General Manager, HVPUD. January 8, 2013.
[4] University of California, Davis, Hoopa Valley Soil Survey, 1974.
[5] Figures provided by Ken Householder, Area Agricultural Engineer, Area One Red Bluff Office, Natural Resources Conservation District. January 2013.

h. Water Delivery System

The following describes the irrigation water delivery systems that have been a focal point for conservation upgrades by HVPUD through either the AWEP or the proposed project herein. The proposed project focuses on the Soctish and Matilton Fields, whereas the AWEP focused on Norton, Mesket, and Hostler.

Soctish Field—for both the north and south portions—is supplied by Soctish Creek, which is a tributary that originates within the Reservation. The northern system draws water through a sum type structure built into the bed of the creek. This intake is controlled, solely by the amount of sediment and debris blocking the intake screen. The southern system draws from the creek through an 8 inch pipe that is laid in the creek bed for the irrigation season. The transmission line crosses under the creek to the north side and feeds an open itch that runs along the top of the field. Two distribution, tight-lines feed down through the line. The northern most line is primarily PVC pipe, but the southern line is old concrete pipe.

Matilton Field draws from Captain John Creek for irrigation with main transmission lines along Tish Tang Road and Airport Road. At one time, this system was converted to domestic use and the irrigation lines lay unused for many years. When the domestic use became furnished by a centralized system pulling from the Trinity River, the system was re-converted back to irrigation use. Since these lines lay unused for several years without maintenance, there is much leakage and water loss with this old system.

Mesket Field feeds from a junction box off the Norton Field System and, therefore, is also supplied by Mill Creek. From this junction box, the Mesket system enters a buried line that crosses over Mill Creek and enters a vertical riser on the creek's south side to rise to a constructed bench along the upper edge of Mesket Field. From this bench, the line continues along contour through various segments of plastic pipe, unlined ditch, concrete ditch, corrugate metal half-round, and PVC pipe. Near Hostler Creek is where the main transmission line terminates at the south end of the Field. This distribution line provides incomplete coverage to the lower Field and contains sections of old and failing concrete and steel pipe.

Figure 6. Hostler Creek

Hostler Field System is supplied from Hostler Creek through an under-gravel infiltration gallery. The supply is transmitted down the creek canyon in buried PVC pipe and back up onto the upper edge of Hostler Field where it is released into an open ditch. It then continues through a series of ditches, half pipes and pipes under open channel along the top of the field to the south end. Here the ditch crosses under Tish Tang Road and the flow is deposited into the Trinity River. Two

distribution networks feed that lower portions of the Field from the upper transmission line. The first feeds the northern third and contains long sections of concrete pipe. The second feeds the southern third of the Field near the Hoopa Shopping Center and is primarily concrete pipe.

Norton Field water is supplied from Mill Creek, which is the most plentiful water source in the Valley, excluding the Trinity River. The intake structure at Mill Creek—reconstructed by the Hoopa Valley Tribal Fisheries Department—is self-cleaning and prevents fish from being entrapped. The main transmission line from the headworks is buried in the streambed for several hundred feet then forms a vertical riser that exits the active channel. From the active channel, the line follows contour for nearly a mile in 30 inch corrugated metal pipe to a domestic water withdrawal station and a junction box that feeds the Mesket Field irrigation system. From here, the line continues along contour for another half a mile where it enters a tight-line that crosses under State Highway 96 to supply the distribution system in lower Norton Field. This system is nearly entirely PVC pipe and reaches almost every residence in the Field. There are only two sections of older cement pipe that are not pressure capable.

i. Energy Efficiency Elements

The HVPUD irrigation system for the Valley has always had a gravity-fed system. The pressurized system will not require any additional pumps to move or pressurize the system. Having the majority of the ditches piped will result in reducing the amount of energy use to monitor because it will be unnecessary to routinely drive the lines and look for leaks during the irrigation season. Additionally, this will result in reducing the amount of energy use to maintain miles of open ditch, which includes routine clearing and brushing. Therefore, a major savings of nearly 97% of gasoline and diesel consumption and CO^2 pollutants will be realized by this project. No longer having residents rely on the domestic supply, which requires electricity to pump, and once again, use the gravity-fed stream source in Matilton Field will result in an energy savings of 41,486 KwH per year. The type of pump that will be installed will also increase energy efficiency and lower CO^2 emissions.

j. Past Working Relationship with Bureau of Reclamation (BOR)

HVPUD originally worked with BOR years ago through the Shasta and Sacramento, CA offices to develop a comprehensive valley-wide irrigation system. The system that BOR designed was over an estimated $20 million and included 20 pumps pulling water from the river by electricity. This design was cost-prohibitive and not obtainable in the foreseeable future. The amount of water that would have been required to be pulled from the river would likely have an impact to the fisheries and other beneficial uses by the Tribe. BOR's design would have demanded a high quantity of electricity, which is highly inefficient and also would have come with a cost-prohibitive monthly electrical bill. Rather, HVPUD moved towards working with NRCS to meet conservation and user needs by focusing on smaller, water and energy efficient irrigation projects that could be reasonably grant funded over several years.

The Hoopa Valley Tribe also has a working relationship with BOR through the Central Valley Project (CVP) and the subsequent Trinity River Restoration Plan. In 1955, Congress passed legislation authorizing the Trinity River Division as an integrated component of the CVP, which provides water to the California Central Valley. Section 2 of the 1955 Act specifically directs the Secretary of the Interior to adopt appropriate measures to ensure the preservation and propagation of fish and wildlife in the Trinity Basin. Regardless, for decades the BOR diverted up to 90% of the Trinity River to benefit commercial water users in the Central Valley, which decimated the fishery by 80% in the Trinity River in 10 years. To work to restore fish stocks to levels that existed prior to the CVP Trinity River Division and adhere to Section 2 of the 1955 Act, Congress has enacted various legislation to provide funding for restoration and increase flows to the Trinity River. In 1992, Congress established a new framework for the CVP called the Central Valley Project Improvement Act (CVPIA). Through the BOR, Congress gave CVP water use for fish and wildlife equal status with other water uses; directed an ongoing Fishery Flow Evaluation Study and implementation of its conclusions; and set a minimum amount of water to remain in the Trinity River. Congress authorized the Secretary of the Interior and the Hoopa Valley Tribe to adjust water diversions, prepare a Trinity fishery restoration plan, and required water and power contractors to pay the cost of restoration.

Figure 7. Signing of the ROD by Secretary of the Interior Bruce Babbitt (left) and Hoopa Valley Tribal Chairman Duane Sherman (right).

The Tribe and the, then Secretary of the Interior, Bruce Babbitt agreed on a plan in 2000 and the Record of Decision (ROD) was ceremoniously signed along the banks of the Trinity River on the Reservation, establishing the Trinity River Restoration Program (see Figure 7). Even before the ROD was signed, litigation was brought by a San Joaquin irrigation contractor who sued to block Trinity River restoration. Despite restoration delays brought on by this case, the courts have allowed increasing water releases to the Trinity River and have directed the Department of the Interior to carry out other restoration work. As a result, there has been positive collaboration through the formation of the Trinity River Restoration Program, including between the Hoopa Valley Tribe and BOR.

With federally-reserved fishing rights, senior water rights, and a cultural reliance on the Trinity River, the Tribe has diligently ensured the primary role for these activities. The Tribal Fisheries Department is responsible for the monitoring and reporting of the fishery for the entire Trinity River Basin. This work is completed through funding from BOR, as well as from the BIA Compact and the National Marine Fisheries Service. Monitoring activities include fish tagging, weir operations, juvenile out-migrant trapping, screw trap monitoring, creel census, and net harvest monitoring. Data gathered is used to estimate future anadromous fish runs as a means to determine the annual catch allocation of the ocean, tribal, and sports fisheries. The Tribal Fisheries Department also takes several measures to ensure optimal spawning habitat and rearing grounds in seven major tributaries within the Reservation. This is complemented by water quality sampling

conducted by the Tribe's Environmental Protection Agency. Through habitat typing, channel morphology characterization, sediment loading analysis, and water quality analysis, the Tribe is able to assess stream habitat and implement restoration activities, as needed. The Tribe also continues to diligently pursue increased water flows in the Trinity River, which have been set by the federal courts since the ROD in 2000.

The waters of the Hoopa Valley are culturally significant and have been since time immemorial. Cultural significance includes the ceremonial and traditional uses, and remains as a viable beneficial use to the Hoopa Valley Reservation today. The Boat Dance is a ceremony that was timed to coincide with the natural flow regime of the Trinity River. The current flow regime resulting from the diversions to the CVP produces flows different from the natural regime and thus makes the enactment of this ceremony impossible without a special request for altered flows from the BOR. Every other year the Hoopa Tribe contacts BOR to request an increase flows to at least 1,600 cfs for the enactment of this ceremony. This requirement is protected under the American Indian Religious Freedom Act (P.L. 95 – 341) and the BOR complies bi-annually with this request, if needed.

III. Technical Project Description

HVPUD is requesting funding under Funding Group II with a total project cost of $2,121,956 ($1,040,988 BOR request, $1,080,968 Recipient Cost Share).

The proposed project will address irrigation concerns in Matilton and Soctish Fields and significantly increase water and energy savings for HVPUD and users. For Matilton, an infiltration gallery will be placed in Captain John Creek and a total of ~10,050 linear feet of HDPE pipe will be installed, which will replace existing metal and cement deteriorating piping and provide laterals to ensure irrigation access to users. At Soctish, a small 40HP VFD pump with a fish screen will be installed in the river, a 50,000-gallon tank will be set, and ~10,175 linear feet of HDPE pipe will be installed to entrap open ditches, replace metal and cement piping, and connect laterals. Valves and meters will be installed in both Matilton and Soctish Fields to better manage and monitor usage, as well as to and detect leaks.

High-density polyethylene (HDPE) pipe will be used to maximize conservation. HDPE has a zero leak rate because the fusion process when installed creates a monolithic system, meaning it fuses into one continuous piece molecularly. HDPE pipe is also more environmentally sustainable than PVC because it is non-toxic, corrosion and chemical resistant, has a long design life, and is ideal for trenchless installation methods because of its flexibility.

The project will be constructed over two years, which includes: survey, securing right-of-way easements; completing environmental compliance; design engineering; clearing and grubbing; mobilization; construction; project management, and reporting.

Funding Group II Breakdown for Two-Year Project:

The **Year 1** federal funding request from WaterSMART will be $470,535 with a 51% total project match. According to the Funding Opportunity Announcement, the Award Notification is expected in March 2013, with Pre-award reviews and clearances completed from April to June. Therefore, for project planning purposes, it is anticipated that the project will commence July 1, 2013.

Year 1, from July 1, 2013 to June 30, 2014 will include the following Tasks and Activities:

- Survey
  - Conduct boundary, laterals, and right-of-way surveys and identify parcels with descriptions.
- Right-of-way easements
  - Identify landownership (Tribal, trust, and fee); request and copy title status reports for trust; identify unprobated estates; research addresses of landowners; prepare forms for permission to survey; acquire signed forms and submit for approval; prepare mail and acquire right of way easements; and record easements with either the County (fee) or the Bureau of Indian Affairs (Tribal and trust).
- Environmental compliance
  - Work with BOR to provide any requested documentation; coordinate environmental activities and tribal departmental involvement; and consult with National Marine Fisheries Services, the Hoopa Valley Tribal Environmental Protection Agency; and the Hoopa Culture Committee.
- Engineering design
  - Work with NRCS Conservation Technical Assistance staff who will review conceptual design, environmental documents, conduct site visits and soil tests, etc… in order to develop piping, pump station, tank, meters, and infiltration system drawings; prepare bid documents; and conduct site inspections.
- Clearing and grubbing
  - Clearing vegetation and other materials, as required.
- Mobilization and Construction
  - Competitively bid and hire Construction Management; HVPUD will install an infiltration gallery in Captain John Creek, replace the cement main transmission and create a gravity-fed pressurized conveyance system of 10,050 linear feet (3,400 ft of 8 in, 3,400 ft of 6 in, and 3,250 ft of 4 in) of leak-free HDPE pipe at Matilton Field.
- Project Management
  - Site visits with employees and contractors; schedule, coordinate, and attend meetings; assist in preparation of RFP or Bid documents; advertise RFP for contracts; assist in selection of Contractor; issue Notices to Proceed; perform any

necessary research/realty; coordinate all activities among Tribal entities; and oversee grant specifications.

- Reporting
  - Complete SF-425, Federal Financial Report, on a semiannual basis and complete Program Performance Reports on a semi-annual basis.

The **Year 2** federal funding request from WaterSMART will be $570,453 with a 51% total project match.

Year 2, from July 1, 2014 to June 30, 2015 will include the following Tasks and Activities:

- Clearing and grubbing
  - Clearing vegetation and other materials, as required.
- Mobilization and Construction
  - Competitively bid and hire Contractor; Contractor will install a 40 HP VFD pump in the Trinity River and a 50,000 gallon tank; HVPUD will install a 1.8 cfs fish screen, entrap the open ditch and replace pipe with 10,175 linear feet (3,400 ft of 8 in, 3,400 ft of 6 in, and 3,375 ft of 4 in) of leak-free HDPE pipe for Soctish Field; conduct inspections; final punchlist; complete final punchlist; and inspector signoff.
- Project Management
  - Site visits with employees and contractors; schedule, coordinate, and attend meetings; assist in preparation of RFP or Bid documents; advertise RFP for contracts; assist in selection of Contractor; issue Notices to Proceed; perform any necessary research/realty; coordinate all activities among Tribal entities; and oversee grant specifications.
- Reporting
  - Complete SF-425, Federal Financial Report, on a semiannual basis and complete Program Performance Reports on a semi-annual basis and then a final report.
- Close-out
  - Complete all necessary financial and other reporting requirements for grant closeout.

a. Water Management and Delivery

This project will greatly improve HVPUD's ability to manage the irrigation. There are currently no flow meters on either system and so there has never been any way to monitor usage as a means to implement management measures and detect leaks. The first step to assuring the equitable distribution of a limited resource is to monitor its consumption. Placing meters at every point of access will provide the means for tracking usage and assessing fees. It is also recommended that main line meters be installed within the transmission and distribution systems to aid in the detection of leaks and possible pirating. These meters will also provide a means for approximating source withdrawal rates. Monitoring will allow the necessary data needed by the HVPUD Board, HVPUD

management staff, Tribal Fisheries and Environmental staff, and the Tribal Council to inform policy and management approaches to maximize conservation value for irrigation use. Moreover, metering will allow HVPUD to assess a fee schedule, which can certainly deter overuse and/or misuse.

Valve installation will also be important component of the proposed project for management. Without valves in key areas throughout the system (e.g. where open ditch is currently) there is no way to currently manage sub-areas of a Field. Valves along major laterals will allow HVPUD to implement water savings management measures, such as rotational or capped allowance, between users. In extreme cases where there may be misuse and water is recklessly flooding and creating damage, HVPUD will be able to turn off the water to that user without affecting others.

This project will also help HVPUD more efficiently deliver the water to residents by improving the piping system. Replacing the old piping and canals with HDPE will eliminate leaks and ensure the highest efficiency and pressure. The principal factors that influence water conveyance efficiency of open channel conveyance systems, i.e., ditches, canals, streams, are seepage, evaporation, and transpiration. These losses can be reduced by using lined channels and controlling vegetative growth. Seepage and other losses are avoided in pipelined conveyance systems because leakage is minimal from well-designed and well-managed pipelines.

Upon completion of the project, when the full water right is not being utilized water will overflow back to the river instead of running down to the bottom of the ditch. The closed delivery system should result in a significant water savings

IV. Evaluation Criteria

a. Evaluation Criterion A: Water Conservation (28 points)

Up to 28 points may be awarded for a proposal that will conserve water and improve efficiency.

Subcriterion A.1: Water Conservation

Subcriterion A.1 (a): Quantifiable Water Savings

Up to 20 points may be allocated based on the quantifiable water savings expected as a result of the project.

- **Describe the Amount of Water Saved.**

Currently, irrigation water floods the fields with no monitoring or management scheme in place. Immense unknown amounts of water settles in the low-lying areas, pooling and causing unwanted flooding at nearby residences and roadways. The water savings on Norton, Mesket, and Hostler Fields that has already been achieved with the new intakes and pipes through the AWEP is a total of 184 ac-ft per year. Converting the irrigation method from the flooding currently being used to sprinklers has the potential to save an additional 393 ac-ft per year in those fields.

For the proposed project, abandoning the surface diversion and open canal on Soctish Field will have a water savings of 55 ac-ft per year for this 115 acres of irrigable land, with an additional 118 ac-ft per year associated with converting from flood to sprinklers. Matilton Field has the potential to conserve 206 ac-ft of water with sprinkler use. NRCS Engineer, Ken Householder, using the NRCS Water Conservation Calculator, calculated this information. Additionally, by improving the irrigation system at Matilton and installing conveyance lines irrigators will rely on the gravity-fed pressurized system from the non-fish bearing stream for irrigation purposes and stop continuing to use domestic water pulled by electricity from the Trinity River and treated by chemicals to meet drinking water standards. Installing meters on these systems will also allow for use to be monitored, leaks to be detected, and for HVPUD to implement rotational water usage to control use equitably and more stringently. The HPDE pipe that will replace cement and metal pipe and open ditch will also create a leak-proof scenario because of the way the pipe is fused during installation. The total amount of water estimated to be conserved by the project with sprinkler use, is 379 ac-ft per year.

- **What is the applicant's average annual acre-feet of water supply?**

Based on stream flow rates, HVPUD's average annual acre-feet of water supply for these two Fields is 1,086.

- **Where is that water currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground, etc.)?**

The water is being lost through leakage and seepage into the ground. Additional water in the soil encourages invasive plants to flourish, such as Himalayan blackberry, which have overrun some fields in the valley. Water in the open ditches is being lost to evaporation and when the ditches overflow, water is causing flooding and pooling in certain areas that have caused erosion, impacted roadways, caused residential foundation problems, and affected private sewer systems. HVPUD has even been threatened with litigation because of the impacts an overflowing open ditch caused on residences. Water is also spilled at the end of ditches and cement pipes, as well as runs continuously into fields. Treated Trinity River domestic water is also imprudently being used for irrigation purposes at Matilton Field.

- **Where will the conserved water go?**

The conserved water will first remain in the closed delivery system and meet the needs of the users. Conserved water will also remain in the streams, increase these tributaries' flows to the Trinity River, and subsequently increase flows in the Trinity and lower Klamath Rivers.

Please address the following questions according to the type of project you propose for funding.

(1) Canal Lining/Piping

- **How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.**

The estimated average annual water savings is based on climate, crops, soils, and assumed conveyance efficiencies (71% for canal and 78% for piping of gross efficiency). Calculations were conducted by NRCS Engineer, Ken Householder, using the NRCS Irrigation Water Savings Calculator from Section 1 of the NRCS Field Office Technical Guide. The water savings on Norton, Mesket, and Hostler Fields that has already been achieved with the new intakes and pipes through the AWEP is a total of 184 ac-ft per year. This was calculated by taking the total acreage (380 acres) and multiplying that by 5.8 ac-in/ac. Converting the irrigation method from the flooding currently being used to sprinklers has the potential to save an additional 393 ac-ft per year in those fields. This is based on a gross efficiency increase of 12% (61% for flooding to 73% for sprinklers) Abandoning the surface diversion and open canal on Soctish Field will have a water savings of 55 ac-ft per year for this 115 acres of irrigable land, with an additional 118 ac-ft per year associated with converting from flood to sprinklers. Matilton Field has the potential to conserve 206 ac-ft of water, from sprinkler use using the same formula.

- **How have average annual canal seepage losses been determined?**

These have been determined by NRCS Engineer, based on assumed efficiency of canals.

- **Have ponding and/or inflow/outflow tests been conducted to determine seepage rates under varying conditions? If so, please provide detailed descriptions of testing methods and all results. If not, please provide an explanation of the method(s) used to calculate seepage losses. All estimates should be supported with multiple sets of data/measurements from representative sections of canals.**

No. Seepage losses were calculated based on assumed efficiency of canals based on soil types by an NRCS Engineer.

- **What are the expected post-project seepage/leakage losses and how were these estimates determined (e.g., can data specific to the type of material being used in the project be provided)?**

Zero. Welded HDPE has a zero leak rate because the fusion process creates a monolithic HDPE system by fusing the pipe into a single piece. HDPE is also corrosion and chemical resistant.

- **What are the anticipated annual transit loss reductions in terms of acre-feet per mile for the overall project and for each section of canal included in the project?**

Zero. No canals will remain post-project.

- **How will actual canal loss seepage reductions be verified?**

Canals shall be eliminated and, therefore, seepage will not exist.

- **Include a detailed description of the materials being used.**

High-density polyethylene (HDPE) pipe will be used throughout the project, using 8 in, 6 in, and 4 in sizes. HDPE is the preferred pipe of the industry for several reasons; the first is because it has a zero leak rate. This is a result of the fusion process used during installation, which creates a monolithic HDPE system. This eliminates the potential leak point every 10-20 feet that is found with PVC and Ductile Iron bell and spigot connections. HDPE pipe fused joints are self-restraining and costly thrust restraints or thrust blocks are not required. HDPE pipe can be bent to a radius 25 times the nominal pipe diameter. This can eliminate many fittings required for directional changes in a piping system where fittings and thrust blocks or restraints are required with alternate materials. The flexibility of HDPE pressure pipe makes it well suited for dynamic soils including areas prone to earthquake, which Northern California certainly is. HDPE pressure pipe can accept repetitive pressure surges that significantly exceed the static pressure rating of the pipe. HDPE pipe is also a more environmentally sustainable option as it is non-toxic, corrosion and chemical resistant, has a long design life, and is ideal for trenchless installation methods because of its flexibility. The polyethylene pipe industry estimates a service life for HDPE pipe to conservatively be 50-100 years.

An infiltration gallery, based on engineer's design, will be installed in Captain John Creek. This has the advantage of bank filtration for better water quality than surface withdrawal, as well as is better for any fisheries that may be present. The improved infiltration system will decrease the amount of water diverted from the streams, which will have long-term ecological impacts. HVPUD will be capable of controlling the infiltration galleries, the new pipeline will allow irrigators to irrigate more efficiently, and fish and other aquatic species will no longer be potentially vulnerable to entrapment into the irrigation pipeline. The improved infiltration galleries will reduce, if not completely eliminate, the need for annual in-stream modifications as previously needed with the surface water diversion system. A 50,000-gallon tank will be installed for storage at Soctish Field, as well as a 40HP pump with a variable frequency drive, and a fish screen in the river. Meters will be purchased to be able to monitor usage, detect leaks, and more effectively manage water distribution within each Field.

Subcriterion A.1 (b): Improved Water Management

Up to 5 points may be awarded if the proposal will improve water management through measurement, automation, advanced water measurement systems, or through implementation of a renewable energy project, or through other approaches where water savings are not quantifiable.

- **Describe the amount of water better managed.**

100% of the water will be better managed.

$$\frac{\text{1,086 ac-ft Estimated Amount of Water Better Managed}}{\text{1,086 ac-ft Average Annual Water Supply}} = 100\%$$

Subcriterion A.2: Percentage of Total Supply

Up to 4 additional points may be allocated based on the percentage of the applicant's total average water supply (i.e., including all facilities managed by the applicant) that will be conserved directly as a result of the project.

- **Provide the percentage of total water supply conserved: State the applicant's total average annual water supply in acre-feet. Please use the following formula:**

$$\frac{\text{379 ac-ft Estimated Amount of Water Conserved}}{\text{1,086 ac-ft Average Annual Water Supply}} = 35\ \%$$

Subcriterion A.3: Reasonableness of Costs

Up to 4 additional points may be awarded based on the reasonableness of the cost for the benefits gained.

- **Please include information related to the total project cost, annual acre-feet conserved (or better managed), and the expected life of the improvement. Use the following calculation:**

Total project cost: $2,121,956

Annual acre-feet better managed: 1,086ac-ft

Expected life of the improvement: 100 years

$$\frac{\text{\$2,121,956 (total project costs)}}{\text{1,086 ac-ft x 100 years (water better managed x improvement life)}} = \$19.54$$

The manufacturer of the large diameter HDPE piping that will be used on this project estimates the service life of the material at 100 years. See Exhibit F for industry accepted life-expectancy documentation.

b. Evaluation Criterion B: Energy-Water Nexus (16 points)

Up to 16 points may be awarded based on the extent to which the project increases the use of renewable energy or otherwise results in increased energy efficiency.

Subcriterion B.2: Increasing Energy Efficiency in Water Management

If the project is not implementing a renewable energy component, as described in Subcriterion No. B.1 above, up to 4 points may be awarded for projects that address energy demands by retrofitting equipment to increase energy efficiency and/or through water conservation improvements that result in reduced pumping or diversions.

- **Describe any energy efficiencies that are expected to result from implementation of the water conservation or water management project (e.g., reduced pumping).**

The HVPUD irrigation system for the Valley has always had a gravity-fed system. The pressurized system will not require any additional pumps to move or pressurize the system. Having the majority of the ditches piped will result in reducing the amount of energy use to monitor because it will be unnecessary to routinely drive the lines and look for leaks during the irrigation season. Additionally, this will result in reducing the amount of energy use to visually monitor and maintain miles of open ditch, which includes routine clearing and brushing. Therefore, a major savings of gasoline and diesel consumption and CO^2 pollutants will be realized by this project (see below). No longer having residents rely on the domestic supply, which requires electricity to pump, and once again, use the gravity-fed stream source in Matilton Field will result in an energy savings of 41,486 KwH per year. The use of a VFD pump at Soctish Field will provide energy savings over installing a unit that is not. The many fixed-speed motor load applications that are supplied direct from AC line power can save energy when they are operated at variable-speed, by means of VFD. Such energy cost savings are especially pronounced in variable-torque centrifugal fan and pump applications. It is estimated that a 40HP VFD pump will conserve 106,913 kWh per year of electricity if operated continuously during the 6-month irrigation season. It will also reduce the anticipated carbon footprint by 37.79 Tons of CO^2 more than a non-VFD pump.[6]

The project will also result in reduced vehicle miles driven, which in turn reduces carbon emissions and increases energy efficiency. The efficiency savings from no longer having to drive the system once a day for 6 months of the year and instead, driving the system once a month for those 6 months is as follows:

Gasoline savings: 2648 miles/2738 miles = 96.7%
Pollution savings: a similar 96.7% reduction in CO^2 emissions should be realized.

[6] This is based on the WEG Electric Corporation Energy Savings Estimator using an estimated 6 months of continuous use to represent the irrigation season use.

- **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?**

All of the Fields in the proposed project are gravity-fed pressurized irrigation systems that have no pumping requirements. Due to the deterioration of the current Matilton system and the lack of irrigation piping throughout the Field, irrigation users in this Field have been relying on the domestic supply for years to the dismay of HVPUD and the high pay rate to users. This domestic supply is on a centralized system operated and managed by HVPUD, which pumps the entirety of its water from the Trinity River. Replacing the Matilton system will ensure that users are once again relying on the gravity-fed stream as HVPUD prefers, rather than pump from the river for their irrigation source. Soctish Field is also on a gravity-feed system, drawing from Soctish Creek. This creek can, however, go dry in the height of the irrigation system during those drier summers, making water conservation by users and by an improved system especially important for Soctish Field. To supplant the creek during those dry times, a small 40HP pump with a variable frequency drive (VFD) will be installed near the mouth of the creek to pull water from the river, which will have an energy savings of 106,913 kWh per year compared to a non-VFD pump. No longer having residents rely on the domestic supply, which requires electricity to pump, and once again, use the gravity-fed stream source in Matilton Field will result in an energy savings of 41,486 KwH per year.

- **Please indicate whether you energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.**

The energy savings estimate originates from the points of diversion.

- **Does the calculation include the energy required to treat the water?**

To calculate the energy savings at Matilton Field, the energy required to treat the water is included because irrigators there are currently using treated domestic water from the centralized water treatment plant for irrigation purposes because of the severe disrepair of the irrigation system. There is no way to parse out the energy used for treatment vs. pumping since it comes as a combined bill. There will be not, however, be any energy required to treat water for irrigation in these Fields once the project is completed.

- **Will the project result in reduced vehicle miles driven, in turn reducing carbon emissions? Please provide supporting details and calculations.**

Yes, the project will result in reduced vehicle miles driven, which in turn reduces carbon emissions and increases energy efficiency. The efficiency savings from no longer having to drive the system once a day for 6 months of the year and instead, driving the system once a month is as follows:

Gasoline savings: 2648 miles/2738 miles = 96.7%
Pollution savings: a similar 96.7% reduction in CO^2 emissions should be realized.

It should also be noted that this project would result in having existing open ditch no longer open through pastures and cultivated fields, reducing the amount of pollutants coming in the tailwater. There is also an anticipated reduction in nutrient and sediment loading, which has the potential to flow to the Trinity River, the valley's drinking water supply and important fisheries habitat, although this reduction has not been quantified. Similarly, by eliminating the use of domestic water supply, which has been treated with chemicals to meet drinking water standards, will also reduce chemical loading, although this has not been quantified.

- **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).**

It is the interest of HVPUD to install solar renewable energy to supply the necessary electricity for the pump to be installed. This will require a bit more investigation by staff. We hope to include the use of renewable energy for the pump in the RFP and provide additional points when scoring for applicants that include this important feature.

c. Evaluation Criterion C: Benefits to Endangered Species (12 points)

Up to 12 points may be awarded for projects that will benefit federally-recognized candidate species or up to 12 points may be awarded for projects expected to accelerate the recovery of threatened or endangered species, or addressing designated critical habitat.

The following federally-listed Threatened Species will benefit from the proposed project:

- Coho salmon (*Oncorhynchus kisutch*); and
- Green sturgeon (*Acipenser medirostris*).

For projects that will directly accelerate the recovery of *threatened or endangered species or address designated critical habitats*, please include the following elements:

(1) How is the species adversely affected by a Reclamation project?

The Trinity River Division is the second largest CVP department for the northern Sacramento Valley. The primary purpose of the division is to divert water from the Trinity River into the Sacramento River drainage downstream of Shasta Dam, in order to provide more flow in the Sacramento River and generate peak power in the process. The CVP's diversion of water from the Trinity River has significantly hurt the salmon runs of the Trinity and Klamath Rivers. In the early decades of the dam, this diversion out of the Trinity River was up to 90%. The impacts of land use and dams combined to push the river past its regenerative capacity. By 1970, less than 10 years after

the dams were completed, the extent of habitat alteration and decline in salmon and steelhead populations became obvious with 80% of the fishery decimated.

Over three-quarters of the river's flow is still diverted away from the Trinity River, causing the river below the dam to become warm, silty, shallow and slow-flowing; attributes that negatively impact young salmon. The low flows, increased water temperatures, and increased presence of harmful algal, parasite, and bacteria blooms can have a significant impact on salmon, steelhead, and sturgeon populations. Furthermore, the Trinity Dam forms a blockade that prevents salmon from reaching about 109 miles (175 km) of upriver spawning grounds. Due to the Trinity River Diversion (TRD), over 100 miles of cold-water salmon and steelhead spawning and juvenile rearing habitat upstream of the dams has been lost. This has led to the spawning and cold-water juvenile rearing habitat to all occur in the lower river, which is where the Reservation is located. The low flows have also degraded channel morphology and high quality habitat, which require a high flow regime to scour the river channel. The once dynamic channel is restricted by riparian berms so that once mobile gravel/cobble bars are trapped behind the berms and in-channel gravel/cobble are not being replenished. This also leads to coarse sediment being deposited by tributaries below the dams to accumulate locally. Fine sediments have accumulated in spawning gravels and filled historic pools where adult salmon hold up.

As the largest tributary to the Klamath River, the drastic reduction of water in the Trinity River also affects the fishery throughout the entire Klamath River Basin. This is compounded by the presence of six large dams in the upper Klamath Basin, developed by BOR for irrigation and energy purposes. The subsequent low flows, increased water temperatures, lower dissolved oxygen, increase algal and bacteria blooms, and the over 300 miles of river blocked from fish passage in the upper reaches have all taken a large toll on these and other Threatened, Endangered, and Critical Listed Species and their Critical Habitat throughout the Klamath River Basin. This includes a massive fish kill of approximately 70,000 salmon and sturgeon in September 2002.

(2) Is the species subject to a recovery plan or conservation plan under the Endangered Species Act?

Yes, both species are subject to the following recovery or conservation plans:

- Recovery Plan for the Southern Oregon Northern California Coast Evolutionarily Significant Unit of Coho Salmon (*Oncorhynchus kisutch*) Version January 2012. Southwest Regional Office. National Marine Fisheries Services. Arcata, CA.
- Federal Recovery Outline North American Green Sturgeon Southern Distinct Population Segment. December 2010. Southwest Regional Office. National Marine Fisheries Service. Arcata, CA.

- Recovery Plan is currently being drafted. Although the expected completion of the draft was Summer 2011, it is still not complete (see http://swr.nmfs.noaa.gov/gs/jd/rec_plan.htm)

(3) What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species?

The proposed project seeks to conserve and enhance water efficiency and use from tributaries of the lower Trinity River, approximately 12 miles from where it enters the Klamath. Conserving that water that would be otherwise lost to seepage, evaporation, and misuse will reduce the amount of water taken from Soctish and Captain John Creeks. Moreover, this conserved water then feeds into the lower Trinity River and then into the lower Klamath River, benefiting not only salmon and sturgeon, but all respective fish and wildlife species. This conserved water is anticipated to have a decreased nutrient loading downstream, which, coupled with increased flows, is important to reducing the potential for harmful algal, parasite, and bacteria blooms. While the extent of which the proposed project would improve the status of the species is unknown, the anticipated higher flows of the tributaries and rivers will directly benefit the fisheries, as well as wildlife in the area. Furthermore, while it is unknown whether relying on streams that are not considered salmon-bearing or spawning habitat, rather than relying on the river for irrigation will certainly contribute towards improving the status of the species.

d. Evaluation Criterion D: Water Marketing (12 points)

Up to 12 points may be awarded for projects that propose water marketing elements, with maximum points for projects that establish a new water market.

There are no available water markets for the Hoopa Valley Tribe to tap into. There are no developed irrigation systems downstream that could benefit, the Tribe retains rights to all waters within the Reservation, and the Tribe's irrigation is a closed system. Furthermore, the Tribe uses their entire share of the Trinity River for identified Beneficial Uses.

e. Evaluation Criterion E: Other Contributions to Water Supply Sustainability (14 points)

Up to 14 points may be awarded for projects expected to contribute to a more sustainable water supply. This criterion is intended to provide an opportunity for the applicant to explain how the project relates to a WaterSMART Basin Study, how the project could expedite future on-farm improvements, or how the project will provide other benefits to water supply sustainability within the basin. An applicant may receive the maximum 14 points under this criterion based on discussion of one or more of the numbered sections below.

(1) Points may be awarded for projects that address an adaptation strategy identified in a WaterSMART Basin Study.

The Klamath Basin was funded in FY2011 for a Plan of Study. Then in FY2012, it was selected for a WaterSMART Basin Study, which is currently underway. BOR, Oregon's Water Resources Department, and California's Department of Water Resources are partnering to conduct the Klamath River Basin Study to identify strategies to meet current and future water demands in the Basin, particularly taking into consideration climate change.

Employing broad stakeholder involvement, the Klamath Basin Study will accomplish the following objectives:

- Evaluate supply and demand imbalances in the basin that may be exacerbated by climate change;
- Identify possible impacts to the Basin's agricultural water requirements, hydroelectric facilities, recreational facilities, fish and wildlife habitats, flood control facilities, and water storage and distribution facilities; and
- Develop both structural and non-structural adaptive strategies to balance supplies with demands.

Stakeholder involvement in the Study includes a broad spectrum of Tribal governments, water user groups, agriculture associations and environmental interests. The total cost of the Klamath Basin Study is $1.85 million with a 50/50 cost share between Reclamation and the States of California and Oregon. Due to the fact that the study has not yet been completed, it is unknown whether this project addresses an adaptation strategy identified in the Study, however, the strategies implemented in the proposed project are longstanding sound strategies for water conservation, particularly specific to irrigation.

(2) Points may be awarded for projects that will help to expedite future on-farm irrigation improvements, including future on farm improvements that may be eligible for NRCS funding. Please address the following:

- **Include a detailed listing of the fields and acreage that may be improved in the future.**

The following is a list of the Fields and acreage that may be improved in the future in the Hoopa Valley. "Available Agricultural Acreage" is used to describe the sum of all open land (pasture and fallow), current production land, and a subjective percentage estimate of available rural residential agricultural land. These lands are a more practical approximation of agricultural land currently in

production and were determined by Spencer (1998)[7] from air photos and field reconnaissance. "Irrigable Acreage" is the maximum extent of land that can sustain a reasonable crop production with adequate irrigation. This includes parcels that are likely too small or fragmented for extensive development or would require serious clearing of vegetation (e.g. blackberry). These figures are taken from the agricultural soils map provided by the Hoopa Valley Land Management Department. "Domestic Irrigation" is estimated at ¼ are per residence.

Table 3. Agricultural Lands Breakdown for the Hoopa Valley[8]

Field	Irrigable Acreage	Available Agricultural Acreage	Domestic Irrigation
Matilton	211	45	14
Soctish	129	101	5
Chenone	122	58	7
Agency	188	118	29
Campbell	447	152	47
Norton	216	171	23
Mesket	182	127	23
Hostler	197	114	37
Total	**1,692**	**886**	**185**

- **Describe in detail the on-farm improvements that can be made as a result of this project. Include discussion of any planned or ongoing efforts by farmers/ranchers that receive water from the applicant.**

There has been expressed interest in sustainable farming, as well as organic commercial farming by many residents. This interest has been supported with projects through the University of California Cooperative Extension Office, the Hoopa Valley Tribe, NRCS, and the recently established Klamath-Trinity Conservation District. Unfortunately, the status of the irrigation systems in the valley have been limiting, and in some areas, prohibitive. As a result of this project, on-farm improvements can include irrigation access; water availability during dry summers; sprinkler and drip systems; increased crop production; more family and multi-family gardens and orchards; and increased access to previously uncultivated or underutilized agricultural, pasture, and range land.

- **Provide a detailed explanation of how the proposed WaterSMART Grant project would help to expedite such on-farm efficiency improvements.**

As a result of deteriorated or insufficient systems, the complete lack of irrigation access to certain areas of both Fields has prohibited and/or limited farming. This project would ameliorate this problem and allow residents to maximize potential irrigable acres within the valley. Additionally, the

[7] Spencer Engineering & Construction Management, Inc. (2008) "Hoopa Valley Irrigation System Needs Assessment."
[8] *Ibid.*

current systems do not have enough pressure so farmers are forced to flood irrigate. Because of the proposed project, the systems will be pressurized enough for sprinkler and drip system use. The addition of a river pump at Soctish will also ensure that users there will have water through dry summers. This will also develop the initial infrastructure for future improvements for the adjacent Chenone Field, which currently is completely without irrigation access and includes 122 irrigable acres.

With this project, valley residents, of which 40% are unemployed according to recent BIA Labor Force reports, can have the opportunity for on-farm improvements that will allow them to be self-employed farmers and/or lease their fields to others for agricultural purposes. Increasing the opportunity for family and multifamily gardens can also seek to address food security concerns on the Reservation.

- **Fully describe the on-farm water conservation or water use efficiency benefits that would result from the enabled on-farm component of this project. Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.**

Pressurizing the systems so that sprinklers may be used is one example of an on-farm water conservation benefit that will result from the enabled on-farm component of the project. It is estimated that sprinklers have gross efficiency increase of 12% over flooding. Between Soctish and Matilton, an estimated 324 ac-ft could be saved through sprinkler use using the NRCS Irrigation Water Savings Calculator.

- **Projects that include significant on-farm irrigation improvements should demonstrate the eligibility, commitment, and number or percentage of shareholders who plan to participate in any available NRCS funding programs. Applicants should provide letters of intent from farmers/ranchers in the affected project areas.**

The HVPUD and the Hoopa Valley Tribe is committed to participating in any available NRCS funding programs. In 2002, NRCS, the Tribe, and HVPUD entered into a Cooperative Working Agreement, "For their Cooperation in the Conservation of Natural Resources" (see Exhibit A). This was complemented by an indefinite Memorandum of Understanding, "Relative to Conservation Planning and Implementation" between NRCS and the Tribe (see Exhibit B). The purpose of these agreements was to outline a partnership focused on conservation within the Reservation. Although this partnership is certainly promising and there have already been several successful outcomes, there is a need for funding to be infused into the effort to continue to address these long-overdue irrigation system replacement needs. HVPUD and the Tribe look forward to continuing their commitment to participating in available NRCS funding programs, as well as encourage the 200 users that would become eligible to directly participate in any available NRCS funding programs because of this project.

- **Describe the extent to which this project complements an existing or newly awarded AWEP project.**

This project complements the existing AWEP project that was funded in 2009 for five years. HVPUD collaborated with the Klamath Trinity Resource Conservation District—the first Tribal conservation district in California—to obtain financial assistance through AWEP to complete the first phase of an important conservation and water enhancement irrigation project to address delivery losses and inefficiencies in 3 of the 8 Fields in the Valley—Norton, Mesket, and Hostler. These three Fields compromise 35% of the Irrigable Acreage and 46.5% of the Available Agricultural Acreage in the entire Valley.[9] The Norton, Mesket, and Hostler Fields project is in its final funding year of five, with only $15,000 remaining. The project has exceeded the proposed scope and drastically increased water conservation and improved fisheries. New intakes were installed at Mill and Hostler Creeks; open ditches were replaced in Mesket and Hostler; corrugated pipe was replaced at Mill Creek; meters were installed to monitor usage and provide for early detection of leaks; ad outreach to users was performed regarding conservation techniques. A total of over 20,950 feet was replaced from open ditch and cement and metal pipe. This breaks down to 7,200 feet in the Hostler Field system and 13,752 feet in the Mill Creek system. The Hostler Creek system will supply 50+ properties with irrigation and the Mill Creek system will provide water to 60+ properties.

The successful outcomes of this project specific to conservation include:

- Closing open ditches and replacing antiquated concrete and metal pipes conserves the water loss through excessive leaks and evaporation;
- Significantly minimizing water loss means there is more water in these fish bearing streams;
- Installation of intake galleries ensures fish protection;
- Pipe installation that prevents soil erosion and degradation of water quality supports the fisheries;
- An opportunity for the creation of conservation incentive programs;
- Replacement of leaking and/or broken irrigation risers and the open and unattended valves eliminates the continued discharge of water;
- Increased education of irrigation users on water conservation measures;
- Installation of zero leak rate HDPE pipe; and
- Zero energy use by harnessing gravity feed sources.

As this AWEP funded project concludes, there is a prime opportunity to leverage the initial conservation work that has been completed with that provided through the WaterSMART

[9] Spencer (1998)

opportunity. If awarded, NRCS will be able to provide Conservation Technical Assistance towards project completion. They will also be able to continue assistance directly to the Tribe—as well as be able to expand services directly to landowners in the Valley—after the project concludes. For the proposed project proposal, NRCS staff provided technical assistance with an initial design and engineer's cost estimate that are provided as leveraged resources. HVPUD has also received verbal commitment from NRCS Conservation Technical Assistance staff that through the EQIP-AWEP, they can provide continued technical assistance on the design engineering.

(3) Points may be awarded for projects that include other benefits to water supply sustainability.

- **Will the project make water available to address a specific concern? For example:**
    - **Will the project address water supply shortages due to climate variability and/or heightened competition for finite water supplies (e.g., population growth or drought)? Is the river, aquifer or other source of supply over-allocated?**

The project will make more water available to the Trinity River, which addresses many concerns, such as for fisheries, ceremonial uses, habitat, and recreation. For a more detailed description regarding the Trinity River Diversion to the Central Valley Project, resultant impacts, and the continuous fight over the amount diverted (see Section II j.). Climate variability is also a concern as temperatures rise there is increased evaporation and water loss from open ditches, flood irrigation use, and less water in the streams and river, which will be addressed by this project.

- **Will the project market water to other users? If so, what is the significance of this (e.g., does this help stretch water supplies in a water-short basin)?**

No, water marketing is not an option because of various restrictions. Please refer to Section IV d.

- **Will the project make additional water available for Indian tribes?**

Yes, the project will make additional irrigation water available to the Hoopa Valley Tribe and the Hoopa Valley Indian Reservation where the project will take place. Additional water will be made available directly to the irrigation users of the Valley through improved conveyance and increased water availability from elimination of loss. The pump to be installed for Soctish Field to supplement the creek will also make additional water available for the Tribe for irrigation.

Beyond irrigation, the additional water that will remain in the tributaries and rivers impacted by the project will be additional water that is available for Indian Tribes for ceremonial, cultural, subsistence, commercial, and other beneficial uses. This is true for not only the Hoopa Valley Tribe,

but also their downstream neighboring Tribes along the lower Klamath, the Yurok Tribe and Resighini Rancheria. These Tribes has always relied on the fishery and other riverine resources since time immemorial. The Hoopa and Yurok Tribes also maintain federally-reserved fishing rights to anadromous fish (50% tribal share).

- **Will the project help to address an issue that could potentially result in an interruption to the water supply if unresolved? (e.g., will the project benefit an endangered species by maintaining an adequate water supply)? Are there endangered species within the basin or other factors that may lead to heightened competition for available water supplies among multiple water uses?**

The project will benefit two threatened species, as well as ceremonial, cultural, commercial, and subsistence uses by the Tribe and downstream tribal and non-tribal users, by increasing the amount of water remaining the Trinity River towards ensuring an adequate water supply for these beneficial uses and federally-protected rights.

- **Will the project generally make more water available in the water basin where the proposed work is located?**

Yes, generally there will be more water available in the water basin where the proposed work is located as a result of this project.

- **Does the project promote and encourage collaboration among parties?**

  - **Is there widespread support for the project?**

There is widespread support for the project goals and objectives, including from the Tribal Council, HVPUD, local NRCS conservation technical assistance staff, the Klamath-Trinity Conservation District, UC Cooperative Extension, and the local community. There have been countless public meetings of the HVPUD Board and Tribal Council where irrigation concerns are discussed and the need for an upgraded and more efficient system is discussed with passionate support from the community and leadership.

  - **What is the significance of the collaboration/support?**

Collaboration will be required by HVPUD, the Tribal Council, Hoopa Tribal Fisheries Program and Hoopa Tribal Environmental Protection Agency. Additionally, continued collaboration with the Klamath-Trinity Conservation District, the first tribal conservation district in California, and with NRCS through the AWEP will also be supported by this project. Lastly, collaboration directly with farmers and users will be more effective through this project. The collaboration between a Tribe,

several tribal entities, a conservation district, two federal agencies, and the local community is extremely significant because of the nature of the players involved.

- **Will the project help to prevent a water-related crisis or conflict?**

The project will certainly help to prevent water-related conflicts locally as it will help ameliorate the unequal distribution and availability of irrigation water. The additional water in the watershed will also support those large-scale water conflicts on-going with the Trinity River Diversion to the Central Valley, as well as those within the Klamath Basin.

- **Is there frequently tension or litigation over water in the basin?**

Certainly. There has been litigation over water allocation of the Trinity River since the 1950s and the Hoopa Valley Tribe has been a major player in those processes (see Section II j.). Within the larger Klamath Basin, there is current tension with the FERC relicensing process and the potential for dam removal, as outlined in two settlement agreements signed by over 40 federal, tribal, state, local, non-profit, and other stakeholders. The Hoopa Valley Tribe continues to be proactively involved in ensuring the Tribe's senior water rights and water flow needs for fisheries and other beneficial uses are met.

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

Absolutely. In Matilton Field, there is the Ki 'maw Medical Clinic, Ki 'maw Dental Clinic, and the Hoopa Airport that could implement future water conservation improvements for their landscaping uses. The medical and dental clinics are operated by the Tribe and serve thousands of tribal and non-tribal residents in this remote region. There is also Matilton village and ceremonial grounds that would benefit from future water conservation improvements because of this project. This area is used annually during the summer for ceremonies and attracts hundreds of participants, many of which camp for several days. Lastly, in Soctish Field there is the Hoopa Valley Rodeo Grounds, which has the possibility of implementing water conservation improvements as a result of this project.

- **Will the project increase awareness of water and/or energy conservation and efficiency efforts?**

  - **Will the project serve as an example of water and/or energy conservation and efficiency within a community?**

Yes. As the public utilities district for the entire Hoopa Valley, HVPUD provides the sole example of water management and delivery to residents. When the example that residents see is a dilapidated

system with leaks, seepage, and water recklessly flooding areas, residents may have a tendency to also waste water and energy. With the improvements, the Tribe will have the ability to highlight this project on a locally, regionally, and nationally, as an example of the type of water and energy conservation projects HVPUD is eager to implement as a means to conserve precious natural and tribal resources. This in turn, can stimulate a similar mindset and approach of conservation to water usage among the community.

- **Will the project increase the capability of future water conservation or energy efficiency efforts for use by others?**

Yes. The project will increase the capability of future water conservation efforts of residents, farmers, and ranchers to use sprinkler and dry system irrigation rather than flooding. Currently, the lack of pressure prevents these more water saving techniques. Additionally, Ki ' maw Medical Clinic, Ki 'maw Dental Clinic, Hoopa Airport, and the Hoopa Rodeo Grounds will have the capability of future water conservation or energy efficiently from the project.

- **Does the project integrate water and energy components?**

Yes, the proposal speaks to the integration of water and energy components throughout.

f. Evaluation Criterion F: Implementation and Results (10 points)

Up to 10 points may be awarded for the following:

Subcriterion F.1: Project Planning

Points may be awarded for proposals with planning efforts that provide support for the proposed project.

- **Does the project have a Water Conservation Plan, System Optimization Review (SOR), and/or district or geographic area drought contingency plans in place? Does the project relate/have a nexus to an adaptation strategy developed as part of a WaterSMART Basin Study)?**

Provide the following information regarding project planning:

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

There is a Water Conservation Plan in place for the Hoopa Valley Tribe through the NRCS AWEP for Norton, Mesket, Hostler, and Agency (south) Fields. The Klamath Basin was funded in FY2011 for a Plan of Study and then in FY2012, selected for a WaterSMART Basin Study, which is currently

underway. BOR, Oregon's Water Resources Department, and California's Department of Water Resources are partnering to conduct the Klamath River Basin Study to identify strategies to meet current and future water demands in the Basin, particularly taking into consideration climate change.

There has also been an extensive planning effort towards designing a comprehensive irrigation system that meets the irrigation usage and conservation needs for the entire valley, while also ensuring sufficient water for fisheries and other beneficial uses. Past planning efforts have included several professional studies analyzing water supplies and irrigation for the Valley on behalf of HVPUD. Gordon Seversen outlined in detail several options for developing domestic water supplies from Mill Creek, Tish Tang Creek, and the Trinity River. Possible irrigation supplies were outlined in reports by Winzler and Kelly in 1973, the BIA in 1985, Omni in 1988, SHN in 1988, Spencer Engineering and Construction Management, Inc. in 1998, the Bureau of Reclamation, and by NRCS in 2002. In every study, conservation and/or source expansion are stressed in order to extend the agricultural capacity of the valley. The funding for these projects has never materialized and the high price tags of the valley-wide designs to pull irrigation water from the Trinity River for both installation (NRCS study estimated $6 million and the BOR design estimated $20 million) and the extremely high energy use and fees that would be associated with that design for decades to come, has made this type of upgrade of the entire valley unattainable. Furthermore, minimizing the burden to the Trinity River for irrigation purposes is preferred for fisheries, habitat, ceremonial, and other beneficial uses is a top priority for the Tribe.

Recent planning efforts and discussions, most prominently in the last decade, have included HVPUD, the Tribal Council, Hoopa Tribal Fisheries Program, Hoopa Tribal Environmental Protection Agency, National Marine Fisheries Service, Klamath-Trinity Conservation District, NRCS, and others. Through these planning efforts, HVPUD has moved towards working with NRCS to meet conservation and user needs by focusing on smaller, water and energy efficient irrigation projects that could be reasonably grant funded over several years. This successful approach has been demonstrated with the AWEP work in Norton, Mesket, and Hostler Fields. HVPUD would like to continue this approach through WaterSMART.

(2) Identify and describe any engineering or design work performed specifically in support of the proposed project.

HVPUD requested Conservation Technical Assistance from NRCS staff out of the Red Bluff and Eureka offices. NRCS staff engineers developed a conceptual design for Soctish and Matilton Field systems, as well as provided an engineer's estimate. Furthermore, there is a wealth of engineering and design work in previous professional studies, as discussed previously, which may be drawn from.

(3) 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 project meets the goals of the Hoopa Valley Tribe's planning efforts through their Water Quality Control Plan, Forest Management Plan, Riparian Protection and Surface Mining Ordinance, Pollutant Discharge Prohibition Ordinance, and other plans and ordinances developed to improve the waters of the Reservation. The Tribe's Water Quality Control Plan is concerned with all activities that might affect water quality and provides a definitive program of actions designed to preserve and enhance water quality on the Reservation. These actions are aimed primarily at Tribal departments, including HVPUD. The Hoopa Valley Tribe has recognized authority for setting water quality standards for its Reservation waters, including both the Trinity and Klamath Rivers. Furthermore, the on-going planning efforts of HVPUD have consistently included repair, replacement, and upgrade of the irrigation systems for water, energy, and habitat conservation.

Subcriterion F.2: Readiness to Proceed

Points may be awarded based upon the extent to which the proposed project is capable of proceeding upon entering into a financial assistance agreement.

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

YEAR ONE: July 1, 2013 – June 30, 2014			
Major Tasks	**Time Period**	**Months**	**Milestones**
Cooperative agreement signed	By July 1, 2013	1	
Survey	July 1 – Sept. 30, 2013	1-3	
Design engineering	July 1 – Sept. 30, 2013	1-3	
Easements	July 1 – December 31, 2013	1-6	
Environmental compliance	Sept. 1 – December 31, 2013	2-6	Milestone 1: Environmental clearance and notice to proceed
Clearing and grubbing	Jan. 1 – Feb. 28, 2014	7-8	
Secure Construction Mgmt	Jan. 1 – Feb. 28, 2014	7-8	
Mobilization and Construction	Feb. 1 – June 30, 2014	8-12	
Final inspection	June 30, 2014	12	Milestone 2: Matilton Field completed

YEAR TWO: July 1, 2014 – June 30, 2015			
Major Tasks	**Time Period**	**Months**	**Milestones**

Clearing and grubbing	July 1 – July 31, 2014	1-2	
Secure Contractor to install tank and pump	July 1 – July 31, 2014	1-2	
Contractor and HVPUD Mobilization and Construction	July 1 – Jan. 31, 2015	1-7	
Final inspection	Feb. 1 - 15, 2015	8	Milestone 3: Soctish Field completed
Final reporting and grant close-out	Feb. 16 – June 30, 2015	8-12	Milestone 4: Grant closeout

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

HVPD will likely be required by the Tribe to get a permit under the Tribe's Riparian Protection and Mining Practices Ordinance, as well as for water pollution control under the Clean Water Act (for which the Tribe is designated by the feds to have jurisdiction). These are processes in which HVPUD is very experienced and there has already been dialog with relevant Tribal departmental staff regarding the project scope. It must be understood, however, that the environmental compliance study has not yet been completed. There is a possibility, although it is not anticipated, that other needed permits will be identified during that study.

Subcriterion F.3: Performance Measures

Points may be awarded based on the description and development of performance measures to quantify actual project benefits upon completion of the project.

- **Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved, marketed, or better managed, or energy saved). For more information calculating performance measure, see Section VIII.A.1. "FY2013 WaterSMART Water and Energy Efficiency Grants: Performance Measures".**

Since irrigation use has never been monitored, the performance of the proposed system will be calculated by first establishing a baseline of water usage by Field, as well as for each user. Data will then be gathered monthly and analyzed for over several years to assess performance. Secondly, inflow/outflow testing for the main transmission lines to measure leakage will be conducted. This will be accomplished by monitoring flows at the pipe intake. In addition to monitoring the reduced

amount of water being diverted, HIC will also be monitoring the amount of water that is returned to the river through the new overflow system. Previously waters that have not been applied to the ground have not been monitored.

g. Evaluation Criterion G: Additional Non-Federal Funding (4 points)

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

- Non-Federal Cost Share: $1,080,968 (51% of the total project)
- Total Project Cost: $2,121,956

h. Evaluation Criterion H: Connection to Reclamation Project Activities (4 points)

Up to 4 points may be awarded if the proposed project is in a basin with connections to Reclamation project activities. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.

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

Reclamation built the Central Valley Project (CVP) in the 1930s to provide water to the agriculturally rich production land of the central valley in California. In 1955, Congress passed legislation authorizing the Trinity River Division as an integrated component of the Central Valley Project. BOR also built the Klamath Project, which provides full service water to approximately 210,000 acres of cropland throughout the Klamath Basin. The proposed project is connected to these two Reclamation projects by the Trinity River, a portion of which is diverted upstream to the CVP and the waters that remain flow into the lower Klamath River.

(2) Does the applicant receive Reclamation project water?

Yes, in that Reclamation is required to keep a certain allocation of water in the Trinity River for fisheries, ceremonial, and other beneficial uses for the Tribe. Thus, the Tribe does receive water associated with a Reclamation project. A specific example is that every other year the Hoopa Tribe contacts BOR to request an increase flows to at least 1,600 cfs for the enactment of the Boat Dance. This is a ceremony that was timed to coincide with the natural flow regime of the Trinity River. The current flow regime resulting from the diversions to the CVP produces flows different from the natural regime and thus makes the enactment of this ceremony impossible without a special request for altered flows from the BOR. This requirement is protected under the American Indian Religious Freedom Act (P.L. 95 – 341) and the BOR complies bi-annually with this request, if needed

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

No, the project is on the Hoopa Valley Indian Reservation and all of the irrigation facilities are owned and operated by the Hoopa Valley Tribe.

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

Yes. The project is in the Trinity sub-basin of the Klamath Basin. Both of which, have large-scale Reclamation projects occurring.

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

Yes, the proposed work contributes water to the lower Trinity and lower Klamath Rivers, both of which are associated with a Reclamation project. Increased flows on these essential stretches of the lower rivers are critical for fisheries in migration and eventual spawning.

V. Description of Performance Measures

Since irrigation use has never been monitored, the performance of the proposed system will be calculated by first establishing a baseline of water usage by Field, as well as for each user. Data will then be gathered monthly and analyzed for over several years to assess performance. Secondly, inflow/outflow testing for the main transmission lines to measure leakage will be conducted. This will be accomplished by monitoring flows at the pipe intake. In addition to monitoring the reduced amount of water being diverted, HIC will also be monitoring the amount of water that is returned to the river through the new overflow system. Previously waters that have not been applied to the ground have not been monitored.

B. Environmental Compliance

The Tribe understands that under no circumstances may an applicant begin any ground-disturbing activities (including grading, clearing, and other preliminary activities) on a project before environmental and cultural resources compliance is complete and Reclamation explicitly authorizes work to proceed. This pertains to all components of the proposed project, including those that are part of the applicant's non-Federal cost share. Reclamation will provide a successful applicant with information once such compliance is complete. An applicant that proceeds before environmental and cultural resources compliance is complete may risk forfeiting Reclamation funding under this FOA.

As advised, ~1% has been included in the Budget as a line item for environmental compliance. The following questions are answered to the best of our ability.

(1) Will the project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain

the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

Impacts will be those associated with clearing and grubbing, mobilization, and tank, pump, and pipe installation. Similar projects in the past have had minimal impacts and disturbance of soils should be minimal. Most of the pipe work will be completed within the boundaries of the existing canals or along existing roads. The completed project will close existing open ditch, reducing the exposure of these open ditches to livestock and grazing animals, which should improve water quality. All construction will be conducted using Best Management Practices when conducting earth-disturbing work to minimize any potential impacts.

(2) Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

HVPUD is not aware of any critical habitat designated in the project area. Coho salmon and Green sturgeon are listed as Threatened within the Trinity River, and are anticipated to benefit from the proposed project.

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

HVPUD is not aware of any issues concerning wetlands or other surface waters in the project area.

(4) When was the water delivery system constructed?

The water delivery system was constructed by the Bureau of Indian Affairs in the 1930s with additional piping and appurtenances were placed by HVPUD in the mid-1980s.Some replacement and repairs have occurred, as discussed, through AWEP at Norton, Mesket, and Hostler Fields from 2009-present.

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

Yes, canals will be replaced with a piping system. Canals were constructed in the 1930s by the BIA and have had no extensive alternations or modifications.

(6) Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

No, there are not any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places. Although there are features that are over 50 years old, they no longer have their integrity and/or are not unique or of historic significance per the requirements of the National Historic Preservation Act.

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

HVPUD is not aware of any known archeological sites in the proposed project area. However, the Tribe does have a Culture Committee that will be consulted if the project is awarded.

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

The project will occur within an Indian Reservation where 75% of the population is American Indian and/or Alaska Native and 29% of residents over 18 were below the poverty level within the last 12 months.[10] However, the project will have a positive effect on these communities and, therefore, is not an environmental justice concern.

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

At this time, HVPUD is not aware of a way in which the project will limit access to and ceremonial use of Indian sacred sites. However, the Tribe does have a Culture Committee that will be consulted if the project is awarded. The project will have a direct impact on tribal lands, however, it is a very positive one that is beneficial to residents, fish and wildlife, stream and river restoration, and enhances the local environment by implementing water and energy conservation measures.

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

No, the project will not contribute to the introduction, continued existence, or spread of noxious weeks or non-native invasive species. In fact, by eliminating seepage and the resultant wet ground and the open ditches will actually minimize the noxious spread of Himalayan blackberries that have taken over some ditch lines and adjacent agricultural areas.

C. Required Permits or Approvals

[10] U.S. Census Bureau. 2006-2010 American Community Survey.

HVPUD is not certain, however, permits or approvals may be required from the Tribe under the Riparian Protection and Mining Practices Ordinance, as well as for water pollution control, and, perhaps, regarding the Wild and Scenic Rivers Act. The Tribe will also have to be consulted regarding historic and cultural resources under the National Historic Preservation Act. National Marine Fisheries Service will also have to be consulted. Right-of-way easements will have to be finalized with private landowners for fee land.

It must be understood, however, that the environmental compliance study has not yet been completed. There is a possibility, although it is not anticipated, that other needed permits or approvals will be identified during that study.

D. Project Budget

a. Funding Plan

(1) 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).

The Recipient will contribute to the cost share requirement through monetary and in-kind contributions. Over the two years of the project, there is a total of $1,080,968 provided as non-federal cost share from the Recipient. Of this total, $61,663 is being provided as a cash match from reserves. This includes pre-award funds used for the Fund Application, which occurred after July 1, 2012. It also includes post-award right-of-way survey work. In-kind in the total amount of $1,019,305 is being provided for equipment to be used during construction, tools and materials, office equipment, software, and office space.

(2) Describe any in-kind costs incurred before the anticipated project start date that you seek to include as project costs. Include:

(a) What project expenses have been incurred?

Pre-award project expenses have been incurred and included towards the match. These are for Fund Application in the amount of $8,663, which occurred after July 1, 2012 as required by the FOA.

(b) How they benefitted the project

They have benefitted the project by allowing funding to be secured to complete the work. Without the funding requested herein, HVPUD would not be able to complete any portion of this project in the foreseeable future.

(c) The amount of the expense

$8,663.

(d) The date of cost incurrence

Between December 10, 2012 and January 17, 2013.

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

All cost share will be provided by the Recipient. No funding will be provided by funding partners. NRCS will contribute staff time in conservation technical assistance for the conceptual design and engineering design, which is a significant contribution to the project. These funds, however, may NOT be used towards the cost share because they are federal in nature. Please, however, consider these services, which usually run about 8% of the total project cost, as LEVERAGED funding.

(4) Describe any funding requested or received from other Federal partners. Note: other sources of Federal funding may not be counted towards your 50 percent cost share unless otherwise allowed by statute.

No funding towards the 50 percent cost share is from a Federal source.

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

Not applicable.

Table 4. Summary of Non-Federal and Federal Funding Sources

Funding Sources	**Funding Amount**
Non-Federal Entities	
1. Applicant (Hoopa Valley Tribe)	$1,080,968
Non-Federal Subtotal:	*$1,080,968*
Other Federal Entities	
1.	$0
Other Federal Subtotal:	$0

Requested Reclamation Funding	$1,040,988
Total Project Funding	**$2,121,956**

Table 5. Funding Group II Funding Request by Year

Funding Group II Request		
	Year 1 (FY2013)	Year 2 (FY2014)
Funding Requested	$470,535	$570,453

b. Budget Proposal

Table 6. Funding Sources

Funding Sources	Percent of Total Project Cost	Total Cost by Share
Recipient Funding	51%	$1,080,968
Reclamation Funding	49%	$1,040,988
Other Federal Funding	0%	$0
Totals	**100%**	**$2,121,956**

Table 7. Budget Proposal

YEAR ONE						
Budget Item	**Computation**			**Recipient Funding**	**BOR Funding**	**Total Cost**
	#	**Unit**	**Qty.**			
SALARY AND WAGES				**$28,663**	**$105,380**	**$134,043**
Conceptual Design and Water Savings Calculations						
Engineer	1				$0 - provided as leverage by NRCS	
Funding Application						
Grantwriter	1	$75	115.5	$8,663		$8,663
Survey						
Right-of-way survey				$20,000		$20,000
Design Engineering						
Design and engineering		8%	of project		$0 - provided as leverage by NRCS	
Project Management, Easements, and Reporting						
General Manager	1	$30.12	800		$24,096	$24,096
Accountant	1	$19.16	800		$15,328	$15,328
Grant Compliance	1	$15.94	686		$10,935	$10,935

Clearing and Grubbing; Mobilization; and Construction						
Construction Lead/ Equipment Operator	1	$20.00	1040		$20,800	$20,800
Truck driver 10 yd	1	$16.98	260		$4,415	$4,415
Laborer	2	$14.33	1040		$29,806	$29,806
FRINGE BENEFITS				**$0**	**$38,312**	**$38,312**
General Manager	1	45%	800		$10,843	$10,843
Accountant	1	45%	800		$6,898	$6,898
Grant Compliance	1	45%	686		$4,921	$4,921
Construction Lead/ Equipment Operator	1	27%	1040		$5,616	$5,616
Truck driver 10 yd	1	45%	260		$1,987	$1,987
Laborer	2	27%	1040		$8,048	$8,048
TRAVEL				**$0**	**$358**	**$358**
Easement recording - Hoopa to/from Eureka	5	$0.55	130		$358	$358
EQUIPMENT				**$416,205**	**$18,000**	**$434,205**
Backhoe	1	$125	1040	$130,000		$130,000
Dump Truck	1	$125	1040	$130,000		$130,000
CAT	1	$125	1000	$125,000		$125,000
Hauling Truck	3	$45	183	$24,705		$24,705
Whacker	1	$65	100	$6,500		$6,500
HDPE welder	1	$3,000	6		$18,000	$18,000
SUPPLIES/MATERIALS				**$33,000**	**$135,687**	**$168,687**
Matilton Field						
8" HDPE pipe		$6.60	3,400		$22,440	$22,440
6" HDPE pipe		$4.25	3,400		$14,450	$14,450
4" HDPE pipe		$2.25	3,250		$7,313	$7,313
Infiltration Gallery		$35,000	1		$35,000	$35,000
Valves		$540	8		$4,320	$4,320
Saddles		$54	116		$6,264	$6,264
Tees		$135	20		$2,700	
Meters		$200	116		$23,200	$23,200
Freight					$20,000	
Tools and Materials				$30,000		$30,000
Computer & printer		$1,500	2	$3,000		$3,000

CONTRACTUAL				**$0**	**$25,000**	**$25,000**
Construction Mgt.	1				$25,000	$25,000
Other				**$0**	**$23,500**	**$23,500**
Environmental Services		~1%	of project		$9,500	$9,500
Lot Book Guarantees		$100	20		$2,000	$2,000
Reporting	included in General Manager salary					
Equipment fuel and repair	gas/ diesel	$3.59/ $4.17gal			$12,000	$12,000
Office space	$1.25/sq ft/mo		1000	$12,000		$12,000
Total Direct Costs				**$489,868**	**$346,236**	**$836,103**
Indirect Costs		35.90%			**$124,299**	**$124,299**
TOTAL YEAR 1				**$489,868**	**$470,535**	**$960,402**

YEAR TWO						
Budget Item	**Computation**			**Recipient Funding**	**BOR Funding**	**Total Cost**
	#	**Unit**	**Qty.**			
SALARY AND WAGES				**$0**	**$115,978**	**$115,978**
Project Management, Easements, and Reporting						
General Manager	1	$30.12	800		$24,096	$24,096
Accountant	1	$19.16	800		$15,328	$15,328
Grant Compliance	1	$15.94	520		$8,289	$8,289
Clearing and Grubbing; Mobilization; and Construction						
Construction Lead/ Equipment Operator	1	$20.00	1040		$20,800	$20,800
Truck driver 10 yd	1	$16.98	1040		$17,659	$17,659
Laborer	2	$14.33	1040		$29,806	$29,806
FRINGE BENEFITS				**$0**	**$43,081**	**$43,081**
General Manager	1	45%	800		$10,843	$10,843
Accountant	1	45%	800		$6,898	$6,898
Grant Compliance	1	45%	520		$3,730	$3,730
Construction Lead/ Equipment Operator	1	27%	1040		$5,616	$5,616
Truck driver 10 yd	1	45%	1040		$7,947	$7,947

Laborer	2	27%	1040		$8,048	$8,048
TRAVEL				**$0**	**$0**	**$0**
EQUIPMENT				**$539,100**	**$18,000**	**$557,100**
Backhoe	1	$125	1040	$130,000		$130,000
Dump Truck	2	$125	1040	$260,000		$260,000
CAT	1	$125	900	$112,500		$112,500
Hauling Truck	3	$45	183	$24,705		$24,705
Whacker	1	$65	183	$11,895		$11,895
HDPE welder	1	$3,000	6		$18,000	$18,000
SUPPLIES/MATERIALS				**$30,000**	**$107,700**	**$137,700**
Soctish Field						
8" HDPE pipe		$6.60	3,400		$22,440	$22,440
6" HDPE pipe		$4.25	3,400		$14,450	$14,450
4" HDPE pipe		$2.25	3,375		$7,594	$7,594
Fish screen 1.8 cfs		$2,000	1		$2,000	$2,000
Valves		$540	7		$3,780	$3,780
Saddles		$54	84		$4,536	$4,536
Tees		$135	20		$2,700	
Meters		$300	84		$25,200	$25,200
Freight					$25,000	$25,000
Tools and Materials				$30,000		$30,000
CONTRACTUAL				**$0**	**$123,000**	**$123,000**
Construction Mgt.	1				$25,000	$25,000
50,000 gal tank		$80,000	1		$80,000	$80,000
40HP pump		$18,000	1		$18,000	$18,000
Other				**$22,000**	**$12,000**	**$34,000**
Reporting	included in General Manager salary					
Equipment fuel and repair					$12,000	$12,000
GIS Software		$22,000	1	$22,000		$22,000
Total Direct Costs				$591,100	$419,759	**$1,010,859**
Indirect Costs		35.90%			$150,694	**$150,694**
TOTAL YEAR 2				**$591,100**	**$570,453**	**$1,161,553**

c. Budget Narrative (for the total two-year project)

SALARIES AND WAGES (Recipient: $28,663 and BOR: $221,358):
Funding Application (Recipient: $8,663 and BOR: $0): This includes all tasks after July 1, 2012 to complete the funding application at a rate of $75/hour for 115.5 hours. This is being contributed as a monetary cost share.

Survey (Recipient: $20,000 and BOR: $0): This includes right-of-way surveys for Matilton Field only as Soctish is already completed. This estimate is based on previous survey work by a local engineering firm.

Design Engineering (Recipient: $0 and BOR: $0): This shall be provided at no cost by NRCS engineers. Thus, it can be seen as a leveraged resource of an estimated 8% of total project costs.

Project Management, Easements, and Reporting (Recipient: $0 and BOR: $98,072): This includes salary for Barbara Ferris, General Manager at $30.12/hour for 1,600 hours; Accountant at $19.16/hour for 1,600 hours; and Grants Compliance/Coordinator at $15.94/hour for 1,206 hours.

Mobilization and Construction (Recipient: $0 and BOR: $123,286): This includes salary for Joe Jarnaghan, Construction Lead/Equipment Operator at $20.00/hour for 2,080 hours; a Truck Driver (10yd) at $16.98/hour for 1,300 hours; and 2 Laborers at $14.33/hour for 2,080 hours each.

FRINGE BENEFITS (Recipient: $0 and BOR: $81,393):
Benefits are calculated at 45% for permanent (medical, dental, vision, worker's compensation, FICA, Medicare, and unemployment) and 27% for temporary employees (worker's compensation, FICA, Medicare, and unemployment).

TRAVEL (BOR: $358):
Five trips have been budget to/from Hoopa to/from Eureka at 130 miles roundtrip for recording right of way easements at the County for fee lands for a total of $358.

EQUIPMENT (Recipient: $955,305 and BOR: $36,000):
Several pieces of Recipient-owned equipment are included as in-kind cost share, using ownership rates developed by the Recipient for each piece of equipment, excluding fuel costs. The backhoe is $125/hour for 2,080 hours, a dump truck for $125/hour for 2,080 hours, a CAT for $125/hour for 1,900 hours, three hauling trucks for tools and employees at $45/day for 365 days, and the whacker for $65/day for 283 days. A welder for the HDPE will be rented at the previously acquired rate of $3,000/month for a total of 12 months.

SUPPLIES AND MATERIALS (Recipient: $63,000 and BOR: $243,387):

HDPE pipe is estimated at $6.60/ft for 8 in; $4.25/ft for 6 in; and $2.25/ft for 4" with a total amount of 6,800ft, 6,800ft, and 6,625 ft respectively. A total of 15 valves ($540/each), 200 saddles ($54/each), 40 tees ($135/each), 200 meters ($200/each), and freight ($45,000) have been budgeted. These estimates come from verbal quotes provided by J.W. Wood Company out of Redding, CA, as well as previous freight tickets for HDPE pipe delivery for the AWEP project. One infiltration gallery ($35,000) and a 1.8 cfs fish screen ($2,000) will also be purchased. These estimates were provided by NRCS engineers. Lastly, monies are included as cost share ($60,000) for tools and other materials, as well as $3,000 for the use of two office computers and printers.

CONTRACTUAL (Recipient: $0 and BOR: $148,000):
An Engineer will be secured for Construction Management, which includes review/approving submittals; review proposed changes and make recommendations; periodic site visits; onsite inspection; review partial payments and make recommendations, review claims and make recommendations, provide technical assistance; final inspection; punch list; punch list completion and notice of completion. An total estimated $50,000 has been determined based on previous contracts for similar work. A qualified and licensed Contractor will also be hired to install the 40HP pump ($2,000) and set the 50,000 gallon tank ($80,000). These figures have been determined by an engineer's estimate provided by NRCS.

OTHER (Recipient: $34,000 and BOR: $35,550):
Environmental and Regulatory Compliance Costs (Recipient: $0 and BOR: $9,500): As suggested, ~1% of the total project costs has been included for environmental and regulatory compliance. This is for costs incurred by Reclamation or the recipient in complying with environmental regulations applicable to a WaterSMART Grant, including costs associated with any required documentation of environmental compliance, analyses, permits, or approvals. Applicable Federal environmental laws could include NEPA, ESA, NHPA, and the CWA, and other regulations depending on the project. Such costs may include, but are not limited to 1) the cost incurred by Reclamation to determine the level of environmental compliance required for the project; 2) the cost incurred by Reclamation, the recipient, or a consultant to prepare any necessary environmental compliance documents or reports; 3) the cost incurred by Reclamation to review any environmental compliance documents prepared by a consultant; and 4) the cost incurred by the recipient in acquiring any required approvals or permits, or in implementing any required mitigation measures.

Reporting: All reports will be completed by the General Manager and the Account. Salary has been included for reporting duties in the Salaries and Wages budget line item.

Easements (Recipient: $0 and BOR: $2,000): This includes lot book guarantees of right-of-ways on 20 total parcels at $100/piece.

Equipment Fuel (Recipient: $0 and BOR: $24,000): This is fuel to operate equipment identified in Equipment line item. Current gas rate of $3.59/gallon for gas and $4.19 for diesel was considered.

An estimated $2,000/month for the 6 month season was determined based on previous work by HVPUD.

INDIRECT COST RATE (Recipient: $0 and BOR: $274,993):
The HVPUD has a federally-negotiated rate with the U.S. Department of the Interior, National Business Center of 35.9% (see Exhibit G).

TOTAL PROJECT COST: Federal - $1,040,988 / Non-Federal Cost Share - $1,080,968

d. Budget Form (SF424C is on the following page)

E. Commitment Letters

Not applicable.

F. Official Resolution (on the following pages)

RESOLUTION OF THE HOOPA VALLEY TRIBE
HOOPA VALLEY INDIAN RESERVATION
HOOPA, CALIFORNIA

RESOLUTION NO.: 13-01

DATE APPROVED: JANUARY 7, 2013

SUBJECT: WaterSMART GRANT FOR IRRIGATION

WHEREAS: The Hoopa Valley Tribe did on June 20, 1972, adopt a Constitution and Bylaws which was approved by the Commissioner of Indian Affairs on August 18, 1972, and Article IV, Section 1, to negotiate with Federal, State and Local Government, on behalf of the Tribe. Ratified by the Act of October 31, 1988 and Amended on June 19, 1990, and by Tribal Law, the Sovereign Authority of the Tribe over the matter described herein is delegated to the Hoopa Valley Tribal Council, acting by Resolution; to authorize the Hoopa Valley Public Utilities District to make application for the WaterSMART GRANT for Irrigation funding to promote self sufficiency and conservation of water and energy efficiency, within the Hoopa Valley community, in the development of water sources and land for gardening , orchards, hay; etc., as deemed necessary by the Tribal Council, and

WHEREAS: The Hoopa Valley Business Council authorizes and supports the application being submitted by the Hoopa Valley Public Utilities General Manager to enter into an agreement with the Bureau of Reclamation , to provide the amount of in-kind contributions specified in the funding plan, to meeting established deadlines for entering into a cooperative agreement, along with accepting the financial and legal obligations associated with receipt of the WaterSMART Grant, and

WHEREAS: This grant will allow the District to continue implementation of a sound irrigation system that will support the community as a whole and will accommodate the limited funding received from AWEP that is in progress for entrapment of the open irrigation ditches, thereby allowing conservation in water use and pumping costs throughout the Reservation . It will provide laterals and meters to serve each of the areas served by open ditches. The WaterSMART Grant will allow us to extend the irrigation work in progress. allowing repair and/or replacement of the aged existing irrigation system that has been in operation since the early 1930's . The continued entrapment of open ditches will provide an extensive savings to the district in providing a separate system from our domestic water system; thereby, providing conservation in the wasting of

chemicals provided for treatment of the domestic system and excessive pumping costs to the District, and

WHEREAS: The Grant, will provide the District with an excellent opportunity at this time, to fulfill the goals of the AWEP Grant. The existing irrigation system is in a deplorable state of affairs requiring extensive repairs to eliminate loss of water due to its aged conditions and lack of funding to make the necessary improvements for use.

NOW THEREFORE BE IT RESOLVED: That the Hoopa Valley Tribal Council hereby grants approval for the Hoopa Valley Public Utilities District to submit the proposal for the Water SMART Grant to obtain the foregoing irrigation funding to provide upgrading , conservation and energy savings to the District.

CERTIFICATION

I, the undersigned, as Chairman of the Hoopa Valley Tribal Council do hereby certify that the Hoopa Valley Tribal Council is composed of eight members of which 8 were present constituting a quorum at a Regular meeting, thereof; duly and regularly called, noticed and convened, and held this 7th day of January, 2013; and that this resolution was duly adopted by a vote of 7 for with 0 against; and that said resolution has not been rescinded or amended in any way.

DATED THIS SEVENTH DAY OF JANUARY 2013.

Leonard E. Masten, Chairman,
Hoopa Valley Tribal Council

ATTEST:
Darcy A. Miller, Executive Secretary,
Hoopa Valley Tribal Council

EXHIBIT A: Cooperative Working Agreement between the Tribe and NRCS

COOPERATIVE WORKING AGREEMENT

Between the

NATURAL RESOURCES CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

and

THE HOOPA VALLEY TRIBE

Together with

THE HOOPA VALLEY TRIBE PUBLIC UTILITIES DISTRICT

For their Cooperation in the

Conservation of Natural Resources

THIS AGREEMENT is between the Natural Resources Conservation Service (NRCS), an agency of the United States Department of Agriculture (USDA), and Hoopa Valley Tribe Public Utilities District, collectively referred to as the parties, to define clearly the roles and responsibilities of the parties.

AUTHORITIES, STATUTES, LAWS

NRCS is authorized to cooperate and furnish assistance to the parties in the conservation of natural resources as referenced in the Soil Conservation and Domestic Allotment Act, 16 U.S.C. 590; The Department of Agriculture Reorganization Act of 1994, Public Law 103-354; and Secretary's Memorandum No. 1010-1, Reorganization of the Department of Agriculture dated October 20, 1994.

The Hoopa Valley Tribe Public Utilities District authority for participation is defined in the Charter and Bylaws of the Hoopa Valley Tribe Public Utilities District.

The purpose of this agreement is to supplement the Mutual Agreement between the United States Department of Agriculture and Hoopa Valley Tribe Public Utilities District. This cooperative working agreement documents those areas of common interest of the state, federal and local partnership in natural resources conservation.

The customers of the parties to this agreement are individual landowners/land users, Federal and state land management agencies, other individuals, groups, and units of government. The parties mutually agree to

provide leadership in resource conservation. To accomplish this we share a commitment to listen, anticipate and respond to our customers' needs; anticipate, identify and address issues; maintain decision-making at the lowest level; advocate comprehensive resource management planning; maintain and improve our grass-roots delivery system; build new alliances to expand our partnership; foster economically viable environmental policies; improve the quality of life for future generations; and conserve and enhance our natural resources.

The parties pledge to work together by advancing and practicing teamwork, including input in the decision making process; communicating, coordinating, and cooperating; sharing training opportunities; promoting mutual respect, support, trust, and honesty; and sharing the leadership and ownership, the credit and the responsibility. A mutual goal is to improve our efficiency and effectiveness by putting quality first; empowering people to make decisions; demonstrating professionalism and dedication and striving for continuous improvement.

ROLES AND RESPONSIBILITIES:

PERSONNEL

Each party is responsible for the hiring, management, supervision, development, and evaluation of its own personnel, including creating an environment that supports a diverse workforce.

- **Training**

  The parties will provide appropriate leadership in administrative and technical training as determined by program needs. Training also includes the orientation of all employees and officials in organizational philosophies, programs, authorities, roles and responsibilities of the parties.

  Parties are encouraged to offer training opportunities to each oth[illegible]

- **Employment**

  The parties will work together to coordinate individual staffing plans to include necessary disciplines for program delivery.

  Employee evaluations will be done independently by the employing organization, but others may provide input.

TECHNICAL AND ADMINISTRATIVE ASSISTANCE

The parties will work together to determine the amount of technical and administrative assistance needed and available for program delivery at each level. Such assistance may include contracts, agreements, procurement, personnel, engineering, and/or other assistance provided by the parties.

PROGRAM DELIVERY

- natural resource plans

  The parties will coordinate with public and private resource groups, other resource agencies, and interested parties to share information and resources in developing comprehensive natural resource plans

- resource inventories

  The parties agree to identify, define, and coordinate the collection and use of resource inventory data

  The parties will cooperate in monitoring and validating the resource inventory data to assure that the data meets the needs of resource planning and evaluation processes

- information/data sharing

  The parties will designate who has responsibility for collection and maintenance of particular resource information

  The parties will agree to work toward establishing and maintaining accessible data bases

- boundaries

  The parties will agree on common boundaries for program delivery

- marketing

  The parties will coordinate their efforts in the communication of program information to their customers

TECHNICAL STANDARDS

The parties will adopt the NRCS Field Office Technical Guide (FOTG) and other science-based technical standards, as appropriate

- job approval

  Each party will assign conservation practice (job approval) authority to its personnel based on employee knowledge, skill and ability levels and within applicable laws and guidelines

- maintenance of standards

The parties will develop a process to establish and maintain consistent standards.

RECORDS, FACILITIES AND EQUIPMENT

- working space

The parties will work together to provide office space within funding limits, operating guidelines, and authorities. The parties will develop a policy and strategy to share common space, whenever possible.

- equipment

The parties will agree to share equipment for common use within established guidelines and procedures.

- vehicles

The parties will agree to share vehicles subject to the applicable requirements of Tribal, state and federal laws.

- records management

The parties will define legal requirements and limitations for access and use of relevant records.

The parties will agree on the maintenance, update, and disposition of relevant records.

FUNDING

The parties will work together to maximize available resources and actively seek funding to accomplish natural resource priorities and programs.

FEE FOR SERVICES

The parties recognize that nonfederal signatories may establish procedures to collect fees, where permissible, for delivery of such services which are not provided through federal financial or technical assistance.

TORT LIABILITY

The parties will each assume responsibility for the actions of their officials or employees acting within the scope of their employment to the extent provided by federal, tribal, and state laws.

JUL-5-2006 10:33 FROM:EUREKA SERVICE CENTER 707 442 7034 TO:15306254594 P:6

ACCOUNTABILITY

The parties will design and implement an outcome based-evaluation system to determine if resource and customer needs are being met.

SCOPE OF AGREEMENT

Authority to carry out specific projects or activities, such as transfer of funds, acquisition of services and property, will be established under separate agreement.

CIVIL RIGHTS

The parties will be in compliance with the applicable nondiscrimination provisions contained in Tribal Law or Titles VI and VII of the Civil Rights Act of 1964 ,as amended , The Civil Rights Restoration Act of 1987 (Public Law 100-259) and other nondiscrimination statutes, namely, Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, Americans with Disabilities Act of 1990, and in accordance with regulations of the Secretary of Agriculture (7CFR-15, Subparts A & B) which provide that no person in the United States shall, on the grounds of race, color, national origin, age, sex, religion, marital status, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal financial assistance from the Department of Agriculture or any agency thereof.

TERMINATION

This agreement can be modified or terminated at any time by mutual consent of all parties or can be terminated by any party's giving 60 days written notice to the other parties.

This agreement supersedes the Supplemental Memorandum of Understanding.

HOOPA VALLEY PUBLIC UTILITIES DISTRICT

Barbara A. Ferris, General Manager

Date 5-13-02

UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICES

Date: 7/12/02

CONCURRENCE

HOOPA VALLEY TRIBAL COUNCIL

Clifford Lyle Marshall, Chairman

Date 5/13/02

AGREEMENT

SHO ______

ASD ______

FNM ______

EXHIBIT B: Memorandum of Understanding between the Tribe, HVPUD, and NRCS

Memorandum of Understanding

between the

United States Department of Agriculture
Natural Resources Conservation Service

and the

Hoopa Valley Tribe

Relative to Conservation Planning and Implementation

Whereas the United States Department of Agriculture, Natural Resources Conservation Service (NRCS) recognizes and commits to a government-to-government relationship with the Hoopa Valley Tribe -Tribal Government, and

Whereas NRCS, as a federal agency, acknowledges the unique relationship between the federal government and American Indian Tribes as established by specific statutes, treaties, court decisions, executive orders, regulations, and policies, and

Whereas NRCS will consult and work with the Hoopa Valley Tribe before making decisions or implementing policy, rules or programs that may affect the Hoopa Valley Tribe to ensure that tribal rights and concerns are addressed, and

IT IS MUTUALLY AGREED:

NRCS will identify and take appropriate steps to remove any impediments to working directly and effectively with the Hoopa Valley Tribe.

NRCS will work cooperatively with other federal agencies and other governmental and non-governmental entities, to further the goals of the Hoopa Valley Tribe.

NRCS will work with the Hoopa Valley Tribe to achieve their goal of self-sufficiency.

The Hoopa Valley Tribe will provide leadership and support to strengthen natural resource conservation programs on their tribal lands.

The Hoopa Valley Tribe will work cooperatively with NRCS in developing policies and procedures to effectively ensure that traditional cultural properties, historic properties, and other cultural resources are thoroughly considered throughout all stages of conservation planning on their Tribal lands.

We pledge to work together by advancing and practicing teamwork; including input in the decision making process; communicating, coordinating, and cooperating; sharing training opportunities; promoting mutual respect, support, trust, and honesty; and sharing the leadership and ownership, the credit and the responsibility. A mutual goal is to improve our efficiency and

effectiveness by putting quality first; empowering people to make decisions; demonstrating professionalism and dedication and striving for continuous improvement.

This agreement will continue in effect for an indefinite period of time.

Any party may terminate this agreement by giving written notice of termination to the other parties not less than sixty days in advance of the effective date of termination.

This agreement may be modified upon mutual written consent of the parties.

The signatories to this agreement will be in compliance with the nondiscrimination provisions contained in Titles VI and VII of the Civil Rights Act of 1964, as amended; the Civil Rights Restoration Act of 1987 (Public Law 100-259); and other nondiscrimination statutes: namely, Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, the American's With Disabilities Act of 1990, and in accordance with regulations of the Secretary of Agriculture (7 CFR-15, Subparts A & B), which provide that no person in the United States shall on the grounds of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance from the U.S. Department of Agriculture or any agency thereof. The Tribe may provide for Tribal hiring preference in accordance with the Indian Reorganization Act of 1934 (25 U.S.C. 479).

Nothing contained in this Memorandum of Understanding is intended to be a waiver of the sovereign immunity of Tribe or to be a waiver of any provision of Federal Law for the Benefit of Tribes

HOOPA VALLEY TRIBE

By: _____

Title: Chairman

Date: 8/13/02

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

By: _____

Title: State Conservationist

Date: 7/24/02

Authority: 16 U.S.C. 590d and 2004

EXHIBIT C: Matilton Field Plan Map

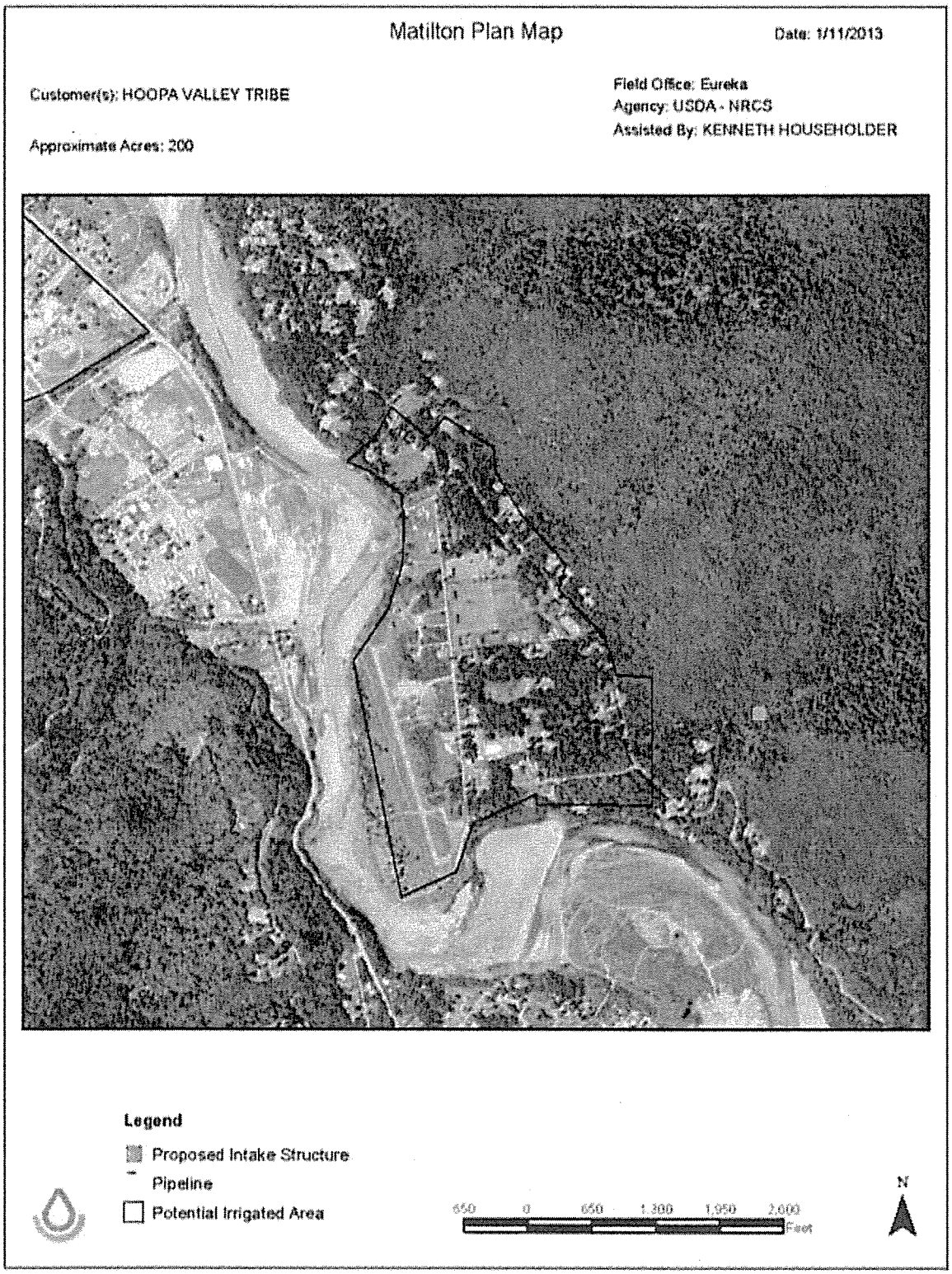


EXHIBIT D: Soctish Field Plan Map

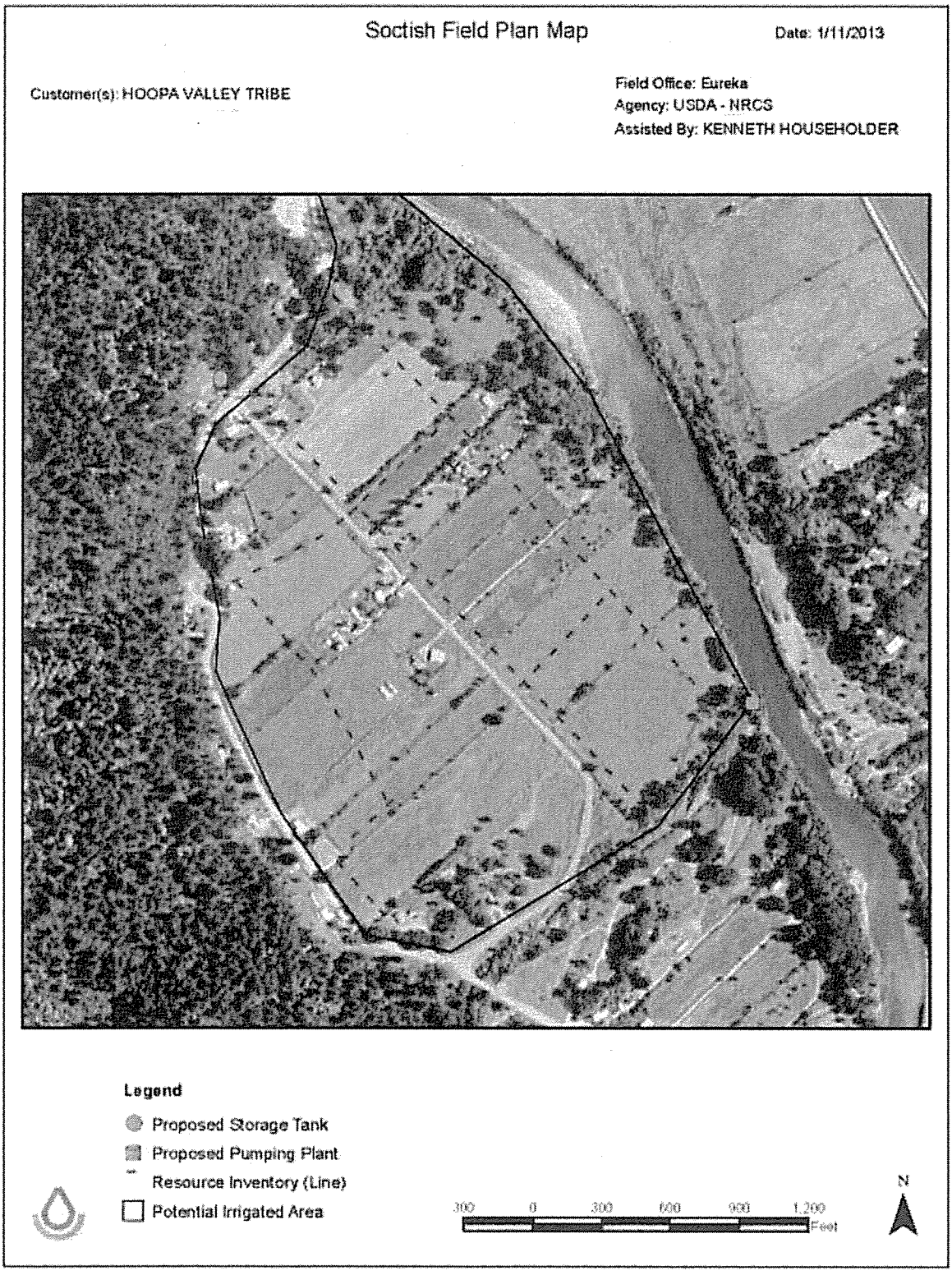
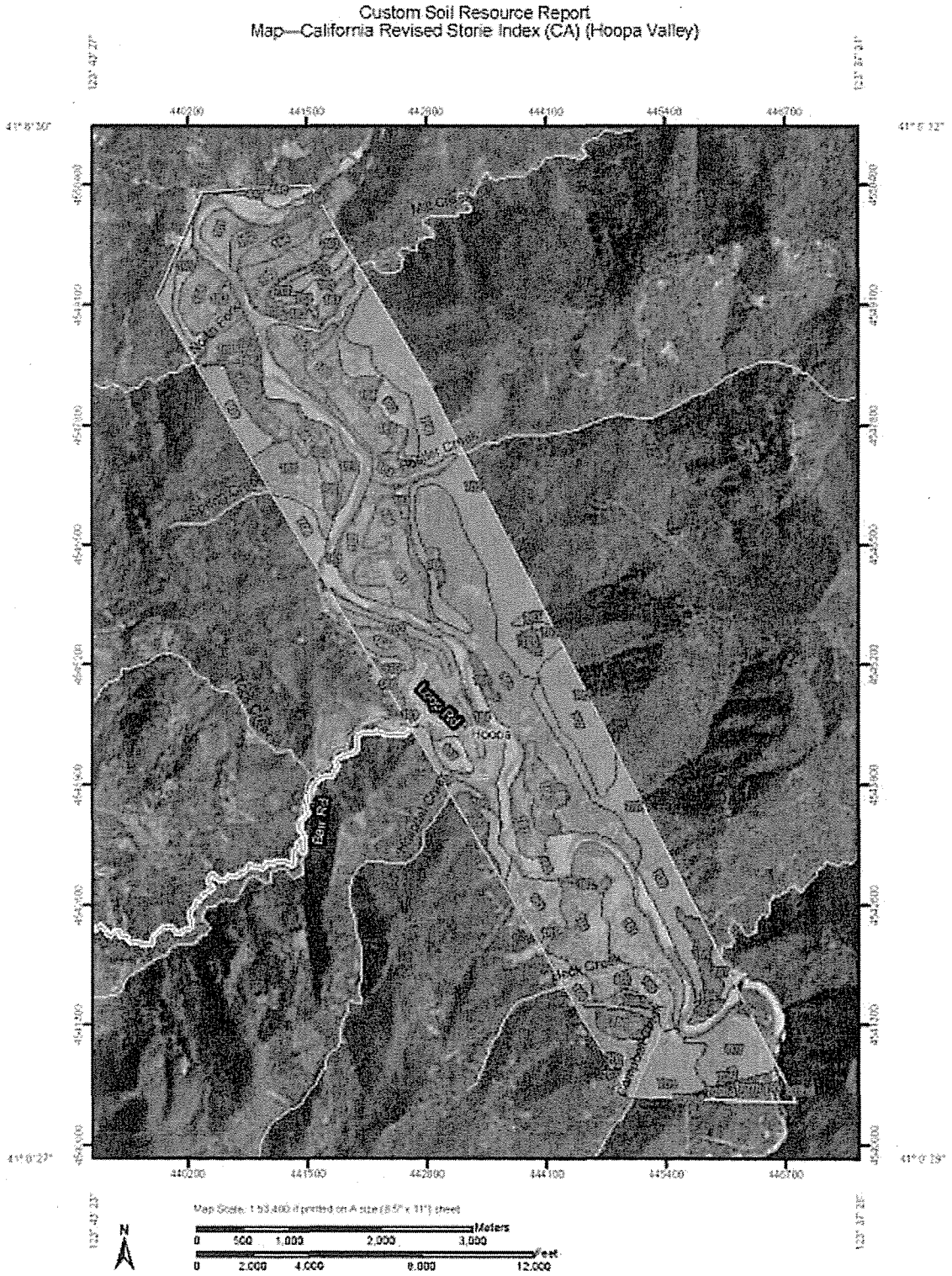


EXHIBIT E: USDA Custom Soils Report Map for the Hoopa Valley



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- Grade One - Excellent
- Grade Two - Good
- Grade Three - Fair
- Grade Four - Poor
- Grade Five - Very Poor
- Grade Six - Nonagricultural
- Not rated
- not rated or not available

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:53,400 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt and Del Norte Area, California
Survey Area Data: Version 5, Jul 2, 2009

Soil Survey Area: Six Rivers National Forest Area, California
Survey Area Data: Version 8, Jan 12, 2012

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Date(s) aerial images were photographed: 6/30/2005; 8/20/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

EXHIBIT F: HDPE Industry Standards Information

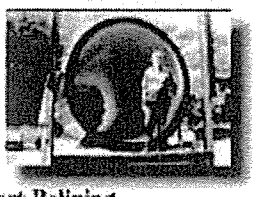
ISCO HDPE Product Catalog

Large Diameter HDPE Piping Systems Offer:

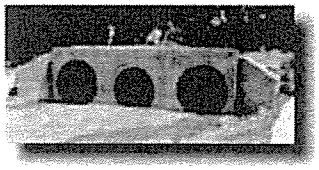
- Corrosion Resistance
- Light Weight
- Multiple Jointing Options
- Hydraulic Efficiency
- 100-Year Plus Service Life
- Impact Resistance
- 100% Leak-Free Restrained Joints
- Flexibility of Design
- Environmental Protection
- Chemical Resistance
- Cost Effectiveness
- Abrasion Resistance
- High strength
- Long-term durability

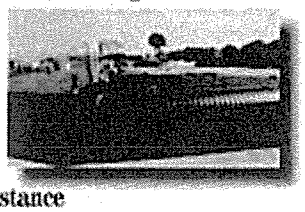
Irrigation and Hydroelectric Penstocks

Pressurized Municipal & Industrial Applications

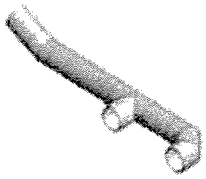


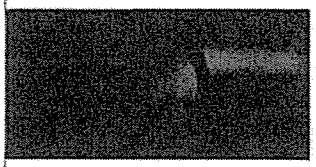
New Culvert and Culvert Relining





Design Assistance





HDPE Pipe

1-800-345-ISCO

www.isco-pipe.com

23

ISCO

EXHIBIT G: HVPUD Indirect Cost Rate Agreement

United States Department of the Interior
NATIONAL BUSINESS CENTER
Indirect Cost Services
2180 Harvard Street, Suite 430
Sacramento, CA 95815

Mailed 4/11/12

April 3, 2012

Ms. Barbara A. Ferris, General Manager
Hoopa Valley Public Utilities District
P.O. Box 656
Hoopa, California 95546-0656

Dear Ms. Ferris:

On the basis of our review of the revised indirect cost rate proposals submitted by the Hoopa Valley Public Utilities District for fiscal years (FYs) ending September 30, 2011 and 2012, and subject to the conditions contained in the enclosed negotiation agreement, we are prepared to approve fixed carryforward rates of 27.47 percent for FY 2011 and 35.90 percent for FY 2012. These rates are based on total direct costs, less capital expenditures and passthrough funds. The results of our reviews are summarized in the enclosed Supplements. If you agree with the contents, **please sign and return the two copies** of the Indirect Cost Negotiation Agreement to us to complete the negotiation process. I will then sign and return one copy to you.

You must submit a new indirect cost rate proposal to obtain an approved rate for FY 2013. This proposal, which was due in our office before April 1, 2012, may be based on actual costs, budgetary data, or a combination of these data. Your proposal requesting a rate for FY 2013 must include a carryforward computation for FY 2011, based on and reconcilable to financial statements that meet the requirements of the Single Audit Act of 1984, Public Law 98-502, as amended. In addition, the data used in the "Indirect Cost Collections" column must also be reconcilable to the financial statements. For additional information on how to prepare indirect cost proposals, please visit our Web site at http://www.aqd.nbc.gov/ics.

If you have any questions concerning the agreement or this letter, please write or call Ms. Elena Chan, Negotiator, at (916) 566-7102.

Sincerely,

for Deborah A. Moberly
Indirect Cost Coordinator

Enclosures: Supplements and Negotiation Agreement

J:\Native Americans\Pacific (Sacramento SA)\HVPUW165\FY 11 & 12\Hvpu-Na.11&12.doc

Phone: (916) 566-7111
Fax: (916) 566-7110

E-mail: ICS@nbc.gov
Internet: http://www.aqd.nbc.gov/ics

Indian Organizations
Indirect Cost Negotiation Agreement

EIN: 94-1477040

Organization:

Hoopa Valley Public Utilities District
P.O. Box 656
Hoopa, California 95546-0656

Date:

Report No(s).:

Filing Ref.:
Last Negotiation Agreement
dated September 12, 2011

The indirect cost rates contained herein are for use on grants, contracts, and other agreements with the Federal Government to which Public Law 93-638 and 2 CFR 225 (OMB Circular A-87) apply, subject to the limitations contained in 25 CFR 900 and in Section II.A. of this agreement. The rates were negotiated by the U.S. Department of the Interior, National Business Center, and the subject organization in accordance with the authority contained in 2 CFR 225.

Section I: Rates

Type	Effective Period From	To	Rate*	Locations	Applicable To
Fixed Carryforward	10/01/10	09/30/11	27.47%	All	All Programs
Fixed Carryforward	10/01/11	09/30/12	35.90%	All	All Programs

***Base:** Total direct costs, less capital expenditures and passthrough funds. Passthrough funds are normally defined as major subcontracts, payments to participants, stipends to eligible recipients, and subgrants, all of which normally require minimal administrative effort.

Treatment of fringe benefits: Fringe benefits applicable to direct salaries and wages are treated as direct costs; fringe benefits applicable to indirect salaries and wages are treated as indirect costs.

Section II: General Page 1 of 2

A. **Limitations:** Use of the rates contained in this agreement is subject to any applicable statutory limitations. Acceptance of the rates agreed to herein is predicated upon these conditions: (1) no costs other than those incurred by the subject organization were included in its indirect cost rate proposals, (2) all such costs are the legal obligations of the grantee/contractor, (3) similar types of costs have been accorded consistent treatment, and (4) the same costs that have been treated as indirect costs have not been claimed as direct costs (for example, supplies can be charged directly to a program or activity as long as these costs are not part of the supply costs included in the indirect cost pool for central administration).

B. **Audit:** All costs (direct and indirect, federal and non-federal) are subject to audit. Adjustments to amounts resulting from audit of the cost allocation plan or indirect cost rate proposals upon which the negotiation of this agreement was based will be compensated for in a subsequent negotiation.

Section II: General (continued) Page 2 of 2

C. **Changes:** The rates contained in this agreement are based on the organizational structure and the accounting system in effect at the time the proposals were submitted. Changes in organizational structure, or changes in the method of accounting for costs that affect the amount of reimbursement resulting from use of the rates in this agreement, require the prior approval of the responsible negotiation agency. Failure to obtain such approval may result in subsequent audit disallowance.

D. **Fixed Carryforward Rate:** The fixed carryforward rate is based on an estimate of costs that will be incurred during the period for which the rate applies. When the actual costs for such period have been determined, an adjustment will be made to the rate for a future period, if necessary, to compensate for the difference between the costs used to establish the fixed rate and the actual costs.

E. **Agency Notification:** Copies of this document may be provided to other federal offices as a means of notifying them of the agreement contained herein.

F. **Record Keeping:** Organizations must maintain accounting records that demonstrate that each type of cost has been treated consistently either as a direct cost or an indirect cost. Records pertaining to the costs of program administration, such as salaries, travel, and related costs, should be kept on an annual basis.

G. **Reimbursement Ceilings:** Grantee/contractor program agreements providing for ceilings on indirect cost rates or reimbursement amounts are subject to the ceilings stipulated in the contract or grant agreements. If the ceiling rate is higher than the negotiated rate in Section I of this agreement, the negotiated rate will be used to determine the maximum allowable indirect cost.

H. **Use of Other Rates:** If any federal programs are reimbursing indirect costs to this grantee/contractor by a measure other than the approved rates in this agreement, the grantee/contractor should credit such costs to the affected programs, and the approved rates should be used to identify the maximum amount of indirect cost allocable to these programs.

I. **Central Service Costs:** Where central service costs are estimated for the calculation of indirect cost rates, adjustments will be made to reflect the difference between provisional and final amounts.

J. **Other:**

1. The purpose of an indirect cost rate is to facilitate the allocation and billing of indirect costs. Approval of the indirect cost rate does not mean that an organization can recover more than the actual costs of a particular program or activity.

2. Programs received or initiated by the organization subsequent to the negotiation of this agreement are subject to the approved indirect cost rate if the programs receive administrative support from the indirect cost pool. It should be noted that this could result in an adjustment to a future rate.

3. New indirect cost proposals are necessary to obtain approved indirect cost rates for future fiscal or calendar years. The proposals are due in our office 6 months prior to the beginning of the year to which the proposed rates will apply.

Section III: Acceptance

Listed below are the signatures of acceptance for this agreement:

By the Indian Organization:

/s/
Signature

Barbara A. Ferris
Name (Type or Print)

Gen Mgr
Title

4-10-12
Date

By the Cognizant Federal Government Agency:

/s/
Signature

Deborah A. Moberly
Name

Indirect Cost Coordinator
Title

Indirect Cost Services
U.S. Department of the Interior
National Business Center
Agency

Date

Negotiated by Elena Chan
Telephone (916) 566-7102