

Project Justification

City of Shasta Lake Water Supply Reliability Project

Table 4 – 2014 IRWM Drought Solicitation Project Summary Table		
Drought Project Element		Project Name/ID
		Add 1 column per Project
D.1	Provide immediate regional drought preparedness	1
D.2	Increase local water supply reliability and the delivery of safe drinking water	1
D.3	Assist water suppliers and regions to implement conservation programs and measures that are not locally cost-effective	1
D.4	Reduce water quality conflicts or ecosystem conflicts created by the drought	1
IRWM Project Element		
IR.1	Water supply reliability, water conservation, and water use efficiency	1
IR.2	Stormwater capture, storage, clean-up, treatment, and management	0
IR.3	Removal of invasive non-native species, the creation and enhancement of wetlands, and the acquisition, protection, and restoration of open space and watershed lands	0
IR.4	Non-point source pollution reduction, management, and monitoring	0
IR.5	Groundwater recharge and management projects	0
IR.6	Contaminant and salt removal through reclamation, desalting, and other treatment technologies and conveyance of reclaimed water for distribution to users	0
IR.7	Water banking, exchange, reclamation, and improvement of water quality	0
IR.8	Planning and implementation of multipurpose flood management programs	0
IR.9	Watershed protection and management	0
IR.10	Drinking water treatment and distribution	1
IR.11	Ecosystem and fisheries restoration and protection	1

Project Description (25 words or less)

Construction of infrastructure to allow the City of Shasta Lake to utilize existing water contracts that is currently unavailable due to CVP intake restrictions.

Additional Project Description – Drought Impact Alleviation

The COSL Water Supply Enhancement Project meets all the following eligible drought project types:

- Projects and Programs that provide immediate drought preparedness.

The City will be able to utilize water that it is already paying for (in the case of the ACID take-or-pay contract) in cutback years, providing relief to system ratepayers.

The infrastructure improvements related to the project will essentially result in a new system of transmission and distribution mains and upgraded pumping facilities, undoubtedly reducing water loss in both systems.

- Increase local water supply reliability and the delivery of safe drinking water.

The City will obtain the long-term water supply stability that initiated the search for additional water supply contracts, thus enhancing the City's water supply.

The City will be able to utilize water that it is already paying for (in the case of the ACID take-or-pay contract) in cutback years, providing relief to system ratepayers.

The infrastructure improvements related to the project will essentially result in a new system of transmission and distribution mains and upgraded pumping facilities, undoubtedly reducing water loss in both systems.

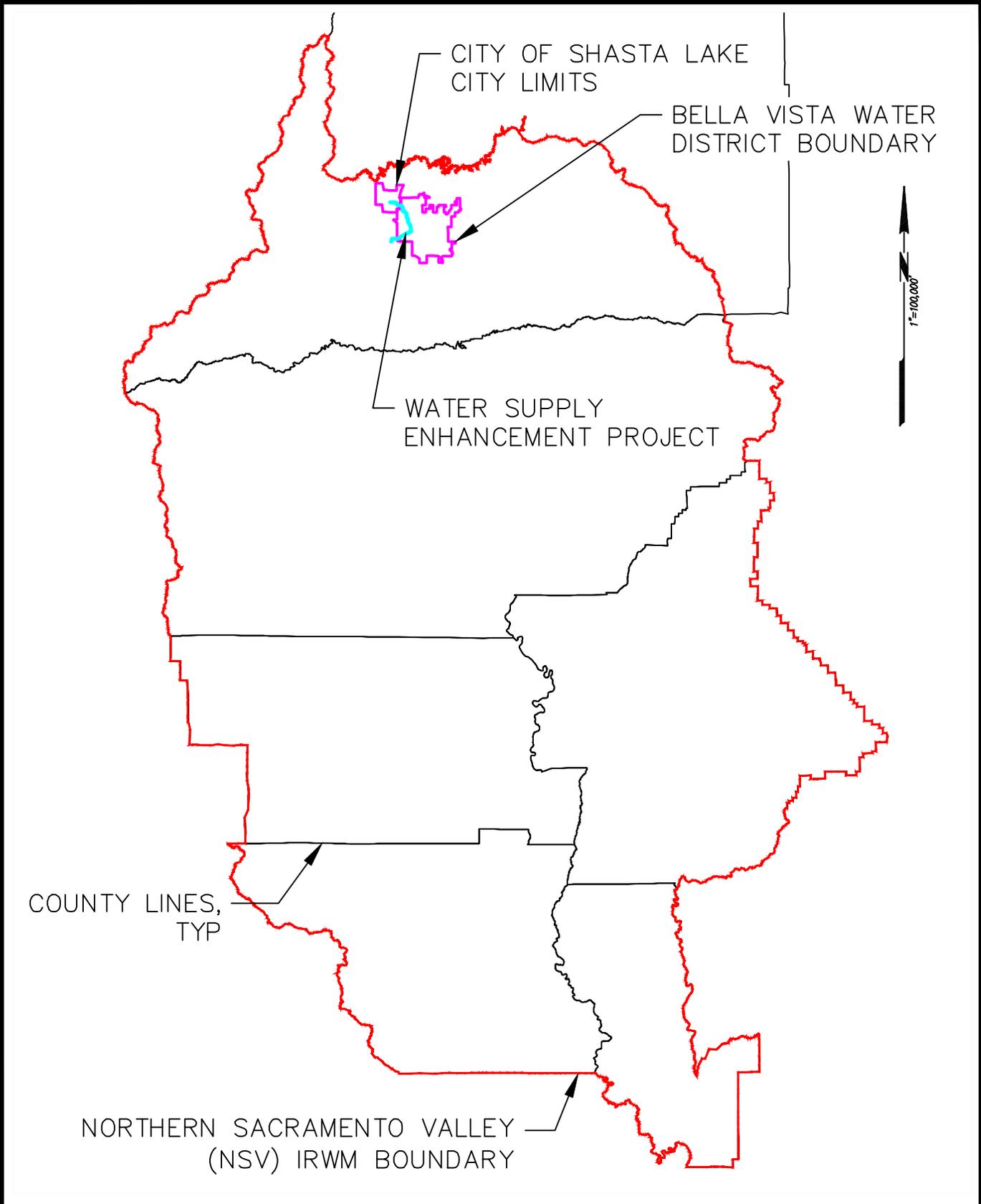
- Assist water supplier and regions to implement conservation programs and measures that are not locally cost effective.

The City will be able to help BVWD and potentially other neighboring water districts with water supply in cutback years, providing conjunctive water management.

- Reduce water quality conflicts or ecosystem conflicts created by the drought.

BVWD's water intakes are located in the Sacramento River approximately 1.25 miles below the ACID diversion structure. The Cold Water Pool issues that the City and USBR must deal with at the Dam intakes will not be relevant at this location, which will result in habitat improvement in the Sacramento River.

Overall, the City of Shasta Lake's project clearly meets all of the goals envisioned by Governor Brown and the California Legislature when they passed the expedited drought funding bill, and will result in a project that allows the City to minimize the impact of California's ongoing drought, both now and into the future. This will directly impact the daily lives of more than 10,000 people within the City, and through conjunctive water use will allow the NSV region to better plan and address drought conditions in the North State.



DATE
7/3/14



NSV IRWMP REGIONAL
MAP

FIGURE 1
JOB#110.87.200

Plot Date: July 08, 2014 - 3:32 pm Login Name: Imccollum
File Name: M:\Land Projects\0110.87.200 IRWM Grant App\DWG\BOUNDARIES.dwg, Layout: IRWM Map



DATE

7/7/14



CITY OF SHASTA LAKE
WATER SUPPLY
ENHANCEMENT PROJECT

FIGURE 2

JOB#110.87.200



CITY OF SHASTA LAKE
WATER SUPPLY
ENHANCEMENT PROJECT MAP

FIGURE 3
DATE: 7/3/14
JOB #110.87.200

Project Physical Benefits

Table 5 – Annual Project Physical Benefits			
Project Name: City of Shasta Lake Water Supply Enhancement Project			
Type of Benefit Claimed: Increases water supply			
Units of the Benefit Claimed: Acre-feet per year			
Additional Information About this Benefit: Completion of this project would allow the City to obtain an additional 2,325 acre-feet per year under existing long-term agreements.			
(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2014-2017	0	0	0
2018-2068	0	2,325	2,325
Comments: Project construction and implementation will be completed by end of 2017. As such, no benefits will be seen until that time. The expected lifetime of a ductile iron pipeline is more than 50 years. As such, benefits will be seen for at least this lifecycle.			

Table 5 – Annual Project Physical Benefits

Project Name: City of Shasta Lake Water Supply Enhancement Project

Type of Benefit Claimed: Reduces cost burden to rate payers

Units of the Benefit Claimed: \$ saved per year

Additional Information About this Benefit: Completion of this project would allow the City to use water at a much lower rate than if water must be purchased from the McConnell Foundation as has been required in the past.

(a)	(b)	(c)	(d)
Physical Benefits			
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2014-2017	\$0	\$0	\$0
2018-2019	\$0	\$0	\$0
2020	\$0	\$257,365	\$257,365
2021	\$0	\$573,576	\$573,576
2022-2025	\$0	\$0	\$0
2026	\$0	\$625,306	\$625,306
2027	\$0	\$1,078,770	\$1,078,770
2028-2031	\$0	\$0	\$0
2032	\$0	\$897,908	\$897,908
2033	\$0	\$1,985,909	\$1,985,909
2034-2037	\$0	\$0	\$0
2038	\$0	\$2,100,930	\$2,100,930
2039	\$0	\$3,607,476	\$3,607,476
2040-2043	\$0	\$0	\$0
2044	\$0	\$2,946,603	\$2,946,603
2045	\$0	\$6,497,513	\$6,497,513
2046-2049	\$0	\$0	\$0
2050	\$0	\$6,791,021	\$6,791,021
2051	\$0	\$11,638,085	\$11,638,085
2052-2055	\$0	\$0	\$0
2056	\$0	\$9,431,031	\$9,431,031
2057	\$0	\$20,769,634	\$20,769,634
2058-2061	\$0	\$0	\$0
2062	\$0	\$21,594,579	\$21,594,579
2063	\$0	\$36,976,236	\$36,976,236
2064-2067	\$0	\$0	\$0
2068	\$0	\$29,859,996	\$29,859,996

Comments: Project construction and implementation will be completed by end of 2017. As such, no benefits will be seen until that time. The expected lifetime of a ductile iron pipeline is more than 50 years. As such, benefits will be seen for at least this lifecycle.

Table 5 – Annual Project Physical Benefits

Project Name: City of Shasta Lake Water Supply Enhancement Project

Type of Benefit Claimed: Improves the ecosystem habitat and water quality of endangered and threatened fish species

Units of the Benefit Claimed: Number of winter-run Chinook salmon habitat and water quality protected each year

Additional Information About this Benefit: If this project is not completed, the City must take additional water from the McConnell Foundation which impacts the Cold Water Pool and negatively effects endangered winter-run chinook salmon spawning areas, in addition to threatened spring-run Chinook salmon and other anadromous fish species in the upper Sacramento River, including Central Valley steelhead and North American green sturgeon.

(a)	(b)	(c)	(d)
	Physical Benefits		
Year	Without Project	With Project	Change Resulting from Project (b) – (c)
2014-2017	0	0	0
2018-2068	0	5,000	5,000

Comments: Project construction and implementation will be completed by end of 2017. As such, no benefits will be seen until that time. The expected lifetime of a ductile iron pipeline is more than 50 years. As such, benefits will be seen for at least this lifecycle.

Technical Analysis of Physical Benefits Claimed

The primary expected physical benefit of the City of Shasta Lake Water Supply Enhancement Project is that of increased water supply. The City is the only community taking its M&I water directly from Shasta Dam. The United States Bureau of Reclamation (USBR) has supplied domestic water to the City from this location since about 1948. In approximately 1958, USBR modified the domestic water withdrawal system in Shasta Dam by installing three raw water connections to the spillway discharge tubes at the 750 elevation pipe gallery inside the dam and installed a new raw water pump station near the base of the dam. The raw water pump station was expanded in 1962. In 1965, the raw water piping in the dam was extended up the face of the Dam to the spillway discharge tubes at the 950 elevation transverse piping gallery, and four connections were made at that level. The addition of connections at the 950 elevation allowed some flexibility for withdrawing less turbid water during the winter and spring months. From these two sets of diversion points, the City’s current water supply system consists of a manifold piping system down the face of the Dam that collects the intake pipelines, a raw water pump station at the base of the dam (operated by the City and maintained by USBR), a treatment plant near Fisherman’s Point (constructed in 1988, and operated and maintained by the City), and a 16-inch treated water transmission main into the City.

Currently, the City has the following long-term water contracts (agency as noted): 4,430 Acre-Feet (AF) from the Central Valley Project (CVP); 2,000 AF from the Anderson-Cottonwood Irrigation District (ACID); 325 AF from MCM Inc.; 50 AF from the Shasta County Water Agency (SCWA). The City also has emergency interties with Bella Vista Water District (BVWD) and City of Redding.

The following conditions affect the City’s ability to withdraw the full allocation allowed by contract:

4,430 AF (CVP): The City currently only uses about 60% of this allocation during an average year. However, during low precipitation years, the City’s CVP allocation of 4,430 AF can be reduced drastically, depending on USBR water supply projections. Reductions are based on the historical average of the City’s actual water usage over the prior three water years. In 2014, the average water usage over the last three years was 2,582 AF. As such, the allocation reduction is 50%, resulting in approximately 1,291 AF being made available to the City, or 29% of the City’s full CVP allocation.

2,000 AF (ACID): The original diversion point of this transfer water was the ACID diversion structure in the Sacramento River, just west of the SR299 overcrossing. The City negotiated this 40-year take-or-pay water transfer with ACID in 2008, subject to USBR approval, in an attempt to secure a long-term supply solution and to provide drought protection. This transfer would have moved the diversion point from the ACID diversion structure to the City's intakes inside Shasta Dam. Shortly after the contract was signed, USBR informed the City that withdrawals from the intakes within the dam "...substantively affect the Cold Water Pool in Shasta Lake under some water supply scenarios and, in turn, affect the ability to control water temperatures downstream as required by State and Federal Law." Because of the relocation of the diversion point, to date, USBR has not approved the transfer of 2,000 AF from ACID.

325 AF (MCM Inc.): The original diversion point of this transfer water was from the Sacramento River south of Redding. The City negotiated this right-of-first-refusal water transfer with MCM Inc., a private agricultural user in 2005, subject to USBR approval, in an attempt to secure a long-term supply solution and to provide drought protection. This transfer would have moved the diversion point to the City's intakes inside Shasta Dam. The City refused the transfer from 2005 to 2008 because it was not needed. In 2008, USBR informed the City that withdrawals from the intakes within the Dam "...substantively affect the Cold Water Pool in Shasta Lake under some water supply scenarios and, in turn, affect the ability to control water temperatures downstream as required by State and Federal Law." Because of the relocation of the diversion point, to date, USBR has not approved the transfer of the 325 AF from MCM Inc.

50 AF (SCWA): Prior to the City's incorporation in 1993, the Shasta Dam Area Public Utilities District (PUD) had a CVP contract with USBR for an unknown amount of water that was administered by SCWA. Following incorporation, a portion of the PUD contract was allocated to the City, first as a shortage supply, then as a direct transfer. The City is currently looking into adding this contract into the larger City CVP contract on a permanent basis.

BVWD's water intakes are located in the Sacramento River approximately 1.25 miles below the ACID diversion structure at the dam. The Cold Water Pool (CWP) issues that the City and USBR must deal with at the dam intakes will not be relevant at this location. As such, completion of this project will allow the City to withdraw its full 2,325 AF allocation (ACID and MCM Inc.) through BVWD's water intake in the Sacramento River, treat it, and deliver it through their distribution system to the City at the existing intertie location on Akrich Street.

A secondary expected physical benefit of the City of Shasta Lake Water Supply Enhancement Project is that of a reduced cost burden to rate payers. As noted above, during drought years when the City's CVP allocation is reduced, the City is unable to withdraw water from existing water contracts that were entered into with the specific goal of securing the City's long-term supply and providing drought protection due to CWP compliance issues that arose after those contracts were executed. As a result, the City is forced to purchase additional water from other sources to supplement the cutback supply. In Shasta County, the only unrestricted water contractor (meaning that its water allocations are not affected by the CWP) is the McConnell Foundation. During cutback years, the City ends up paying nearly 5 times as much for raw water as it does for water supplied through the CVP allocation. In 2008 and 2009 the City purchased 700 AF and 1,400 AF, respectively from the McConnell Foundation. In 2014, the City purchased 900 AF of water from the McConnell Foundation at \$250 per AF, for a total of \$225,000. As such, water rates had to be increased accordingly.

The cost of purchasing water from the McConnell Foundation is not stable and has the potential to become even more of a significant burden to ratepayers as drought conditions continue to worsen. The availability of water from the McConnell Foundation to the City is not a certainty. It is very possible the McConnell Foundation could find another customer willing to pay much more money, thereby resulting in no water being available to the City. A recent internet search of Associated Press Articles conducted July 2, 2014, indicated water costs in California have increased to as much as \$1,000 to \$2,200 per AF. Should the

McConnell Foundation raise their rates to this amount, and the City needs a similar 900 AF of water as they did in 2014, the cost would be nearly \$2 million.

The projected costs savings per year to rate payers shown in Table 5 is based on the history of City water purchases from the McConnell Foundation, and the assumption that similar drought conditions and therefore required water purchases from the McConnell Foundation will occur approximately every 5 years as they have in the recent past. An initial cost of \$250 per AF, as was charged by the McConnell Foundation to the City in 2014, was assumed to increase each subsequent year by 10% in order to purchase water. Based on recent skyrocketing increases in California water costs, this number could be much larger in future years. This cost is in comparison to the existing cost of CVP water paid by residents of \$63 per AF, which was assumed to increase by 3% each subsequent year. The table shown on the following page gives a further cost savings breakdown which substantiates the totals shown in Table 5. This project would eliminate the need for the City to rely on the availability of costly McConnell Foundation water and eliminate the associated burden to rate payers of a DAC.

Another secondary expected physical benefit of the City of Shasta Lake Water Supply Enhancement Project is that of ecosystem and habitat improvement in the Sacramento River. As noted above, the City's ability to withdraw contract water from its intakes in Shasta Dam is significantly impacted by the CWP. The CWP consists of a large layer of cold subsurface water that exists in Shasta Lake. In the spring months, a thermocline is established in Shasta Lake, whereby the temperatures stabilize and stay fairly consistent through the summer months.

The City's contract with ACID and MCM Inc. requires approval by the USBR Contracting Officer before any water delivery can occur (that is, prior to the City actually receiving the water from the contracting agency). This approval would be a discretionary action by USBR, requiring National Environmental Policy Act (NEPA) compliance, which in turn requires USBR to maintain certain river temperatures at various compliance points in the Sacramento River and make a finding that withdrawal of the additional water at the City's intake location would result in 'No Significant Impact' to these river temperatures. Upon past review of the ACID and MCM Inc. contracts, USBR had concerns that allowing additional withdrawals from the City's intakes in Shasta Dam (generally at the 750 elevation) would negatively impact the CWP, and in turn, the temperature targets in the river.

To validate these concerns, USBR ran computer simulations that modeled additional water withdrawals contained in the City's contracts with ACID and MCM, Inc. from the City's intakes in Shasta Dam. USBR's paraphrased conclusion was: "The reduction in CWP volumes during drought periods can result in a release temperature increase of 0.1° – 0.5° F between July and September. This increase could measurably affect the ability of the project to meet temperature requirements at the downstream compliance locations." As a result, USBR was unable to make a finding of "No Significant Impact" to the river temperatures and was unable to sign off on the transfers.

City of Shasta Lake Water Supply Enhancement Project
Table 5 Cost Savings Calculations

Year	Purchased Water (AF)	McConnell Water Cost/AF)	Total McConnell Water Cost (\$)	CVP Water Cost/AF	Total CVP Water Cost (\$)	Cost Savings to Ratepayers
2014-2017	900	\$250	\$225,000	\$63	\$56,700	\$168,300
2018-2019	0	\$0	\$0	\$0	\$0	\$0
2020	700	\$443	\$310,023	\$75	\$52,658	\$257,365
2021	1400	\$487	\$682,051	\$77	\$108,475	\$573,576
2022-2025	0	\$0	\$0	\$0	\$0	\$0
2026	900	\$785	\$706,146	\$90	\$80,841	\$625,306
2027	1400	\$863	\$1,208,295	\$93	\$129,525	\$1,078,770
2028-2031	0	\$0	\$0	\$0	\$0	\$0
2032	700	\$1,390	\$972,986	\$107	\$75,077	\$897,908
2033	1400	\$1,529	\$2,140,568	\$110	\$154,659	\$1,985,909
2034-2037	0	\$0	\$0	\$0	\$0	\$0
2038	900	\$2,462	\$2,216,190	\$128	\$115,259	\$2,100,930
2039	1400	\$2,709	\$3,792,147	\$132	\$184,671	\$3,607,476
2040-2043	0	\$0	\$0	\$0	\$0	\$0
2044	700	\$4,362	\$3,053,645	\$153	\$107,042	\$2,946,603
2045	1400	\$4,799	\$6,718,020	\$158	\$220,507	\$6,497,513
2046-2049	0	\$0	\$0	\$0	\$0	\$0
2050	900	\$7,728	\$6,955,353	\$183	\$164,332	\$6,791,021
2051	1400	\$8,501	\$11,901,382	\$188	\$263,297	\$11,638,085
2052-2055	0	\$0	\$0	\$0	\$0	\$0
2056	700	\$13,691	\$9,583,647	\$218	\$152,617	\$9,431,031
2057	1400	\$15,060	\$21,084,024	\$225	\$314,390	\$20,769,634
2058-2061	0	\$0	\$0	\$0	\$0	\$0
2062	900	\$24,254	\$21,828,878	\$260	\$234,299	\$21,594,579
2063	1400	\$26,680	\$37,351,635	\$268	\$375,399	\$36,976,236
2064-2067	0	\$0	\$0	\$0	\$0	\$0
2068	700	\$42,968	\$30,077,591	\$311	\$217,595	\$29,859,996

A Draft Feasibility Report (Report) regarding a Shasta Lake Water Resources Investigation was completed by the USBR in November 2011. One purpose of the Report was to evaluate the potential enlargement of Shasta Dam and the Reservoir to improve anadromous fish survival in the upper Sacramento River. As described on page ES-6 therein, one of the most significant factors contributing to the considerable declines in the populations of Chinook salmon and steelhead is unsuitable water temperature in the upper Sacramento River, especially in dry and critically dry years. Releases of cold water stored behind Shasta Dam improve water temperatures in the Sacramento River for anadromous fish during critical periods as detailed on page 2-3 of the Report. Under current conditions, even two consecutive years of drought (such as that currently

underway) could reduce Shasta Reservoir cold-water storage to levels insufficient to support the Sacramento River winter-run Chinook spawning and incubation season.

Data from the California Department of Fish and Game (CDFG) Draft 3-09-2010 Grand Tab Table regarding Upper Sacramento River Basin Salmonid Monitoring Datasets showed the winter-run Chinook salmon spawning population has declined from over 50,000 in 1970 to less than 5,000 in 2010. The spring-run Chinook salmon spawning population has been reduced to 0 from 20,000 in 1969. Similar patterns are occurring for the fall-run and late fall-run as well. As such, Sacramento River winter-run Chinook salmon have been listed as endangered under the Federal Endangered Species Act, and spring-run Chinook salmon are listed as threatened, along with other anadromous fish species in this area including Central Valley steelhead and North American green sturgeon. While predictions of fish survival require assumptions with various levels of uncertainty, including the future number of spawners returning each year and potential effects of climate change, it can be assumed that any project improving the CWP will only benefit and improve the number and habitat of threatened and endangered Chinook salmon, Central Valley steelhead, and North American green sturgeon. While the total number of threatened or endangered fish that will benefit from this project is much larger than 5,000, this number was identified as a specific benefit to the endangered population since it was last reported by USBR in the Report.

Completion of this project would allow the City to obtain additional water supply through the BVWD's treatment and distribution system at a diversion point approximately 1.25 miles south of the dam. The diversion water at this point would have no impact on the CWP, thus relieving current negative impacts to Sacramento River threatened and endangered fish species.

Without this project, none of the above described benefits will be seen in the near future. No projects are currently planned if drought funding cannot be obtained, as the City is a DAC and cannot afford to pay with existing funds. In order to achieve these physical benefits infrastructure upgrades to the BVWD's and City of Shasta Lake's treatment, pumping, and distribution systems must be constructed and put online. No potentially adverse physical effects are expected to result from this project.

Table 6 – Cost Effective Analysis

Project name: City of Shasta Lake Water Supply Enhancement Project

Question 1	Types of benefits provided as shown in Table 5 include increasing water supply by 2,325 acre-feet per year, reducing the cost burden to rate payers by \$__ per year, and protecting the ecosystem habitat and water quality of at least 5,000 winter-run Chinook salmon each year. Additional benefits for the proposed project are as follows: 1) Provides some water supply redundancy to neighboring water agencies, such as Bella Vista Water District (BVWD), should City of Shasta Lake have surplus water during peak demands, and 2) Corrects some existing water system deficiencies within BVWD.
Question 2	<p>Have alternative methods been considered to achieve the same types and amounts of physical benefits as the proposed project been identified? Yes.</p> <p>If no, why? N/A</p> <p>If yes, list the methods (including the proposed project) and estimated costs. The City has been exploring options to convey 2,325 acre-feet of water into its system without affecting the Cold Water Pool in Shasta Lake since 2008. An option to modify intake piping inside Shasta Dam has not been viewed favorably by the US Bureau of Reclamation and only provides benefits to the City when depths in the lake are within a narrow range. Further details of this alternative can be found in pages 5 through 12 of the Supplemental Water Supply Feasibility Study completed March 2007, by PACE Engineering, for the City of Shasta Lake, BVWD, and Mt. Gate Community Services District. The cost to perform intake piping modifications in Shasta Dam is estimated to be about \$700,000 (July 2014) but is not viable for the reasons described above. Options to provide a floating pump station in the lake have logistical challenges, including extension of power and discharge pipe supports across highly variable lake levels. Cost estimates to provide a floating pump station have not been determined. The proposed project takes advantage of the closest water diversion point in the Sacramento River to the ACID diversion structure (original point of diversion for the 2,325 acre-feet purchased by the City.) And, the proposed point of diversion does not affect the Cold Water Pool in Shasta Lake.</p>
Question 3	If the proposed project is not the least cost alternative, why is it the preferred alternative? Provide an explanation of any accomplishments of the proposed project that are different from the alternative project or methods. The proposed project may not be the least expensive alternative, but it is the easiest to construct given water treatment and conveyance infrastructure exists between the point of diversion and connection to City of Shasta Lake, although some infrastructure improvements are necessary to accommodate increased flows. In addition, utilizing BVWD's point of diversion has no impact on the Cold Water Pool in Shasta Lake. Any diversion alternatives at the dam could have negative impacts on the Cold Water Pool, or be limited to the point of providing very little benefit to the City of Shasta Lake. The "Do Nothing" alternative would not allow the City to take advantage of water it already owns and would subject it to open market water purchases to augment cutbacks during low water years. This year, the City paid \$250 per acre-foot for 900 acre-feet of water and had to implement an emergency water rate increase to offset the additional cost of water. This is a financial hardship for the disadvantaged City. Recent Associated Press stories indicate water has been selling for \$1,100 to \$2,200 per acre-foot in California. The City cannot afford to pay such prices for water.
Comments:	

MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF SHASTA LAKE
("CITY") AND THE BELLA VISTA WATER DISTRICT ("DISTRICT") REGARDING
THE EXPLORATION OF A WATER INTERTIE AND CORRESPONDING FACILITIES

RECITALS

1. The District is a California water district that provides water service to customers in an area adjacent to the City of Shasta Lake.
2. The City of Shasta Lake is a general law city that provides full municipal services, including water service.
3. The District's intake for water service is the Wintu intake on the Sacramento River downstream from the Sundial Bridge.
4. The City and the District wish to jointly explore the feasibility of developing a water intertie between the City and the District whereby the District could deliver water to the City through its Wintu pump station.
5. Implementation of the intertie would require installation of pumps, pipes and other facilities necessary to deliver water to the City's facilities.
6. It is recognized that the use of an intertie would require not only facility improvements, but also protocols and agreements regarding operation and shared costs.
7. The City and the District wish to explore the feasibility of the intertie and operational ramifications with each party absorbing the costs of investigation unless expressly agreed otherwise in writing.

WITNESS

IN CONSIDERATION of the foregoing recitals which are incorporated herein, the parties agree as follows:

1. Joint Investigation. The parties will jointly study and investigate the feasibility of proceeding with the intertie project (more fully described on Exhibit "A" attached.)
2. Costs. The costs of exploration of the project will primarily be staff time expended on analyzing the various aspects of the project. The District and City will each absorb their own staff costs. If expenditures are necessary to employ consultants or hire third parties for studies, the party employing the consultant or third party will be solely responsible for paying the consultant or third party, unless the parties agree otherwise in writing in advance.
3. Limited Commitment. It is agreed between the parties that this Memorandum of Understanding is to facilitate a joint study of a prospective project. Nothing in the agreement obligates either party to expend funds or commit to implementation of the project. It is recognized that a commitment to expenditure of funds or proceeding with implementation would require approval of both the Board of Directors of the Bella Vista Water District and the City Council of the City of Shasta Lake.

4. Operation Considerations. The parties recognize that in addition to construction of facilities to permit the intertie water services, the implementation of such services would involve operational and other considerations of both the District and the City. Such operational considerations have not yet been determined and could impact both the decisions of the City and the District with respect to implementing any joint intertie.

5. Joint Drafting. The parties acknowledge that this memorandum of understanding was drafted on behalf of each by John S. Kenny, who represents both the District and the City. The parties, for the purposes of this memorandum of understanding only, waive any conflict that may result from Mr. Kenny jointly representing both the District and the City.

6. Termination. This agreement may be terminated by written notice by one party to the other mailed to the addresses as follows:

To the City:

John N. Duckett, Jr.
City Manager
1650 Stanton Drive
Shasta Lake, CA 96019

To the District:

David J. Coxey
General Manager
Bella Vista Water District
11368 E. Stillwater Way
Redding, CA 96003-9510

7. Amendments. This memorandum of understanding will only be amended in writing executed by both parties.

The parties agree to the foregoing.

Dated: 7/8/2014

BELLA VISTA WATER DISTRICT

David J. Coxey

Dated: 7/8/2014

CITY OF SHASTA LAKE

JL. Duckett

4833-6592-1819, v. 1



United States Department of the Interior

BUREAU OF RECLAMATION

Northern California Area Office
16349 Shasta Dam Boulevard
Shasta Lake, California 96019-8400

JUN 11 2014

IN REPLY REFER TO:

NC-100
PRJ-8.00

Mr. John Duckett, Jr.
City Manager
City of Shasta Lake
1650 Stanton Drive
Shasta Lake, CA 96019

Subject: Letter of Support for the City of Shasta Lake's City of Shasta Lake's Water Supply Enhancement Project

Dear Mr. Duckett:

We at the Bureau of Reclamation recognize that an adequate water supply for domestic, environmental, recreational, and agricultural uses is paramount to the economic, social, and environmental health of our nation. We therefore make every effort to partner with stakeholders at the local, regional and state levels, along with other Federal agencies, to meet the challenge of balancing public needs with the preservation of natural resources.

It is my understanding that the City's sole source of municipal and industrial water is that withdrawn from Lake Shasta under the terms of its contract with Reclamation, and that the City has been adversely impacted by the reduced allocation during the extreme drought conditions we continue to experience throughout much of California. Attempts by the City to acquire transferred water through its existing infrastructure have been stymied by the requirement to protect the cold water pool within Lake Shasta. The City's effort to secure a more dependable water supply is time sensitive, as the severe drought conditions may extend into the 2015 allocation period as well.

We are aware that the City has been actively pursuing economically feasible water supply options, including new and creative uses of its infrastructure and existing water markets. Most recently, the City is requesting Department of Water Resources Integrated Regional Water Management (IRWM) Grant funding to construct a project that will allow the City to withdraw its full 2,325 acre-feet transferred from the Anderson-Cottonwood Irrigation District (ACID) and MCM, Inc., that has thus far been precluded by the aforementioned adverse cold water pool impacts. The proposed project would divert the transferred water through Bella Vista Water District's (BVWD) water intake in the Sacramento River, treat the water, then deliver it through their distribution system to the City at the existing intertie location on Akrich Street.

The project will consist of infrastructure improvements to BVWD's and the City's treatment, pumping, and distribution systems, as well as upgrading and improving the existing intertie pump station between the two entities.

We understand that this project will provide a variety of benefits to the City, to BVWD, and to Reclamation, including:

- BVWD's water intakes are located in the Sacramento River approximately 1.25 miles below the ACID diversion structure. The cold water pool impacts of diverting at the BVWD intake are essentially eliminated as compared to diverting that same volume from Lake Shasta, which will comparatively improve fish habitat in the Sacramento River.
- The City will obtain the long-term water supply stability that initiated the search for additional water supply contracts, thus enhancing the City's water supply.
- The City will be able to help BVWD and potentially other neighboring water districts with their respective water supplies in years of reduced allocation, thus expanding opportunities for conjunctive water management.
- The City will be able to utilize water that it is already paying for (in the case of the ACID take-or-pay contract) in years of reduced allocation, providing relief to the City's ratepayers.
- The infrastructure improvements related to the project will essentially result in a new system of transmission and distribution mains and upgraded pumping facilities, undoubtedly reducing water losses in both systems.

We wish the City every success in the pursuit of this project. If we can be of further assistance, please contact me at 530-275-1554.

Sincerely,



Brian Person
Area Manager

Anderson-Cottonwood Irrigation District

Brenda Haynes, President
Audie Butcher, Vice President
Robert Blankenship, Director

2810 Silver Street, Anderson, Ca. 96007
(530) 365-7329 – Fax: (530) 365-7623
www.andersoncottonwoodirrigationdistrict.org

Jason Munson, Director
Kayle Spoon, Director
Stan Wangberg, GM/Sec

May 29, 2014

John Duckett, Jr.
City Manager
City of Shasta Lake
1650 Stanton Drive
P.O. Box 777
Shasta Lake, CA 96019

Re: Letter of Support for the City of Shasta Lake's City of Shasta Lake's (City) Water Supply Enhancement Project

Dear Mr. Duckett:

We recognize that the availability of adequate water supplies for domestic, environmental, recreational, and agricultural uses is paramount to the economic, social, and environmental health of our nation. It is crucial that stakeholders at the local, regional and federal levels work collaboratively to meet the challenge of balancing consumer need with the preservation of natural resources.

It is my understanding that the City's sole source of municipal and industrial water is surface water withdrawn from Lake Shasta under an allocation from the U.S. Bureau of Reclamation (USBR), and that the city is attempting to preserve this water supply during low rainfall years when USBR could reduce the City's allocation for the purpose of maintaining optimum water temperature for fisheries below Lake Shasta. This issue is time sensitive, as there are major drought projections for 2014 which will affect water supply in the North State as well as all over California.

The City has been actively pursuing economically feasible options for preservation of the municipal water supply, including new and creative uses of infrastructure and existing water markets. Most recently, the City is requesting DWR Integrated Regional Water Management (IRWM) Grant funding to construct a project that will allow the City to withdraw its full 2325 AF allocation (ACID + MCM Inc.) that is restricted due to Cold Water Pool issues through Bella Vista Water District's (BVWD) water intake in the Sacramento River, treat it, and deliver it through their distribution system to the City at the existing intertie location on Akrich Street.

The project will consist of infrastructure improvements to BVWD's and the City's treatment, pump, and distribution systems, as well as upgrading and improving the existing intertie pump station between the two agencies.

We understand this project will provide a variety of benefits to the City, to BVWD, and to USBR:

- BVWD's water intakes are located in the Sacramento River approximately 1.25 miles below the ACID diversion structure. The Cold Water Pool issues that the City and USBR must deal with at the Dam intakes will not be relevant at this location, which will result in habitat improvement in the Sacramento River.
- The City will obtain the long-term water supply stability that initiated the search for additional water supply contracts, thus enhancing the City's water supply.
- The City will be able to help BVWD and potentially other neighboring water districts with water supply in cutback years, providing conjunctive water management.
- The City will be able to utilize water that it is already paying for (in the case of the ACID take-or-pay contract) in cutback years, providing relief to system ratepayers.
- The infrastructure improvements related to the project will essentially result in a new system of transmission and distribution mains and upgraded pumping facilities, undoubtedly reducing water loss in both systems.

If I can be of further assistance you may contact me at (530) 209-1350.

Sincerely,



Stan Wangberg
General Manager

California State Senate

SENATOR TED GAINES
FIRST SENATE DISTRICT

REPUBLICAN CAUCUS CHAIR



COMMITTEES
ENVIRONMENTAL QUALITY
VICE CHAIR
INSURANCE
VICE CHAIR
TRANSPORTATION &
HOUSING
VICE CHAIR
APPROPRIATIONS
PUBLIC EMPLOYMENT &
RETIREMENT

June 23, 2014

John Duckett, Jr., City Manager
City of Shasta Lake
1650 Stanton Drive
P.O. Box 777
Shasta Lake, CA 96019

Re: Letter of Support for the City of Shasta Lake's (City) Water Supply Enhancement Project

Dear Mr. Duckett:

I am pleased to support the City of Shasta Lake (City) in its request for grant funding from the Department of Water Resources (DWR) for a Water Supply Enhancement Project.

As California faces historic drought conditions, local jurisdictions in the North State are doing their part by urging residents to conserve, by finding alternative sources of water, and by upgrading equipment and streamlining processes to operate facilities in the most efficient manner possible. The City's Water Supply Enhancement Project will allow the City to obtain the long-term water supply stability that initiated the search for additional water supply contracts in 2005, thus enhancing the City's water supply and protecting the health and safety of its residents and businesses within the community. Additionally, the City will be able to help Bella Vista Water District and potentially other neighboring water districts with water supply in cutback years, providing conjunctive water management. The infrastructure improvements related to the project will essentially result in a new system of transmission and distribution mains and upgraded pumping facilities, undoubtedly reducing water loss in both systems.

It is my understanding that the City's sole source of municipal and industrial water is transfer water withdrawn from Lake Shasta at Shasta Dam under an allocation from the U.S. Bureau of Reclamation (USBR), and the City is attempting to preserve this water supply during low rainfall years when USBR could reduce the City's allocation for the purpose of maintaining optimum water temperature for fisheries below Lake Shasta. This issue is time sensitive, as we are in the midst of a historic drought which will affect water supply in the North State as well as all over California.

John Duckett
Page Two

I understand the City has long-term water transfer agreements with the Anderson-Cottonwood Irrigation District and MCM, Inc., for a total of 2,325 acre feet of potable water per year; however, the City is unable to secure this allocation because USBR believes that additional withdrawals from the dam intakes would adversely affect the Cold Water Pool and impact the ability to control water temperatures downstream as required by state and federal law.

The City is requesting Department of Water Resources (DWR) Prop 84 Integrated Regional Water Management (IRWM) Drought Grant funding, which would enable the City to partner with the Bella Vista Water District to allow the City to obtain additional potable water through Bella Vista's water intake in the Sacramento River, thereby avoiding impacts to the Cold Water Pool. The project will consist of infrastructure improvements to BVWD's and the City's treatment, pump, and distribution systems, as well as upgrading and improving the existing intertie pump station between the two agencies. This project will provide many benefits to the City, to BVWD, USBR, and other water users:

- BVWD's water intakes are located in the Sacramento River approximately 1.25 miles below the ACID diversion structure. The Cold Water Pool issues that the City and USBR must deal with at the Dam intakes will not be relevant at this location, which will result in habitat improvement in the Sacramento River.
- The City will obtain the long-term water supply stability that initiated the search for additional water supply contracts, thus enhancing the City's water supply.
- The City will be able to help BVWD and potentially other neighboring water districts with water supply in cutback years, providing conjunctive water management.
- The City will be able to utilize water that it is already paying for (in the case of the ACID take-or-pay contract) in cutback years, providing relief to system ratepayers.
- The infrastructure improvements related to the project will essentially result in a new system of transmission and distribution mains and upgraded pumping facilities, undoubtedly reducing water loss in both systems.

I strongly support the City's request for \$7,500,000 in DWR grant funding to implement this project.

Sincerely,



TED GAINES
Senator, First District

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0001
(916) 319-2001
FAX (916) 319-2101

DISTRICT OFFICE
280 HEMSTED DR., SUITE 110
REDDING CA. 96002
(530) 223-6300
FAX (530) 223-6737

E-MAIL: Assemblymember.dahle@assembly.ca.gov

Assembly California Legislature



BRIAN DAHLE
ASSEMBLYMAN, FIRST DISTRICT

COMMITTEES
VICE CHAIR, ENVIRONMENTAL
SAFETY AND TOXIC MATERIALS
VICE CHAIR, REVENUE AND TAXATION
WATER, PARKS, AND WILDLIFE
AGRICULTURE

July 2, 2014

Tracie Billington, Branch Chief
Financial Assistance Branch
Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236

Re: City of Shasta Lake's Water Supply Enhancement Project

Dear Ms. Billington,

Maintaining reliable water supplies through California's intense drought demands an unprecedented level of cooperation among government agencies. In that spirit, the City of Shasta Lake is teaming with the Bella Vista Water District on an infrastructure project that will improve the regional ability to move water where it is needed most, all the while protecting threatened and endangered salmon runs on the Sacramento River.

To make up for cutbacks in its allocation from the U.S. Bureau of Reclamation, the City has purchased water from the Anderson-Cottonwood Irrigation District and MCM Inc. Unfortunately, the Bureau has taken the position that additional withdrawals from the City's intakes within Shasta Dam would substantively affect the Cold Water Pool in Shasta Lake and harm the ability to control water temperatures downstream as required by state and federal law.

By working with the Bella Vista Water District to use its intake below the dam, the City will avoid impacts to the Cold Water Pool, obtain long-term water stability, and be able help Bella Vista with supplies in shortage years. In addition, the new intertie and pipelines will substantially improve both agencies' infrastructure and undoubtedly reduce leakage.

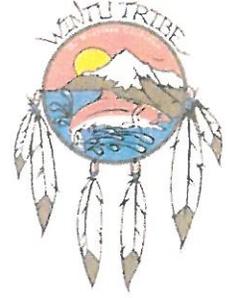
This project will help make the best use of existing water supplies. It will create new flexibility for the region's infrastructure. It will mean long-term relief for tens of thousands of Shasta County residents currently facing shortages not so much for lack of water as for lack of pipes to move it to the right place. I strongly support the project and hope the Department of Water Resources also sees the wisdom of this investment.

If I can be of further assistance, please contact District Director Bruce Ross at (530) 223-6300.


Brian Dahle
ASSEMBLYMEMBER, 1ST DISTRICT



Wintu Tribe of Northern California & Toyon Wintu Center
P.O. Box 995.
Shasta Lake City, CA 96019
Phone: (530) 244-4405 FAX: (530) 244-4491
www.wintutribe.org



July 8, 2014

TO: John Duckett, Jr., City Manager
City of Shasta Lake
1650 Stanton Drive
P.O. Box 777
Shasta Lake, CA 96019

SUBJECT: Letter of Support for the City of Shasta Lake's (City) Water Supply Enhancement Project

Hestum!

The Wintu Tribe of Northern California recognizes that the availability of adequate water supplies for domestic, environmental, recreational, and agricultural uses is paramount to the economic, social, and environmental health of our nation. It is crucial that stakeholders at the local, regional and federal levels work collaboratively to meet the challenge of balancing consumer need with the preservation of natural resources.

It is my understanding that the City's sole source of municipal and industrial water is transfer water withdrawn from Lake Shasta at Shasta Dam under an allocation from the U.S. Bureau of Reclamation (USBR), and the City is attempting to preserve this water supply during low rainfall years when USBR could reduce the City's allocation for the purpose of maintaining optimum water temperature for fisheries below Lake Shasta. This issue is time sensitive, as we are in the midst of a historic drought which will affect water supply in the North State as well as all over California.

I understand the City has long-term water transfer agreements with the Anderson-Cottonwood Irrigation District and MCM, Inc., for a total of 2,325 acre feet of potable water per year; however, the City is unable to secure this allocation because of USBR's position that additional withdrawals from the intakes within the Dam would substantively affect the Cold Water Pool in Shasta Lake and affect the ability to control water temperatures downstream as required by state and federal law.

I know the City has been actively pursuing economically feasible options for preservation of the municipal water supply, including new and creative uses of infrastructure and existing water markets. Most recently, the City is requesting Department of Water Resources (DWR) Prop 84 Integrated Regional Water Management (IRWM) Drought

Wintu Tribe of Northern California & Toyon Wintu Center

P.O. Box 995,

Shasta Lake City, CA 96019

Phone: (530) 244-4405 FAX: (530) 244-4491

www.wintutribe.org

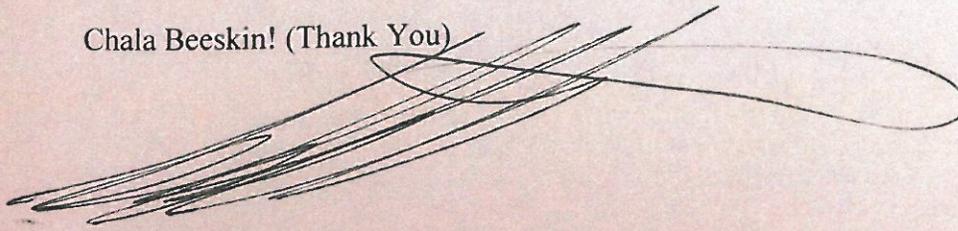
Grant funding, which would enable the City to partner with the Bella Vista Water District to allow the City to obtain additional potable water through Bella Vista's water intake in the Sacramento River, thereby avoiding impacts to the Cold Water Pool. The project will consist of infrastructure improvements to BVWD's and the City's treatment, pump, and distribution systems, as well as upgrading and improving the existing intertie pump station between the two agencies.

The Tribe understands that this project will provide a variety of benefits to the City, to BVWD, USBR, and other potential water users:

- BVWD's water intakes are located in the Sacramento River approximately 1.25 miles below the ACID diversion structure. The Cold Water Pool issues that the City and USBR must deal with at the Dam intakes will not be relevant at this location, which will result in habitat improvement in the Sacramento River.
- The City will obtain the long-term water supply stability that initiated the search for additional water supply contracts, thus enhancing the City's water supply.
- The City will be able to help BVWD and potentially other neighboring water districts with water supply in cutback years, providing conjunctive water management.
- The City will be able to utilize water that it is already paying for (in the case of the ACID take-or-pay contract) in cutback years, providing relief to system ratepayers.
- The infrastructure improvements related to the project will essentially result in a new system of transmission and distribution mains and upgraded pumping facilities, undoubtedly reducing water loss in both systems.

If I can be of further assistance to you, you may contact me at (530) 283-7410.

Chala Beeskin! (Thank You)



Wade A. McMaster

Chairman

Wintu Tribe of Northern California / Toyon Wintu Center

DOUG LAMALFA
1ST DISTRICT, CALIFORNIA

COMMITTEE ON
NATURAL RESOURCES
COMMITTEE ON AGRICULTURE

Congress of the United States
House of Representatives
Washington, DC 20515-0501

WASHINGTON OFFICE:
506 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
TEL: (202) 226-3076
FAX: (202) 226-0852

OROVILLE DISTRICT OFFICE:
1453 DOWNER STREET
SUITE A
OROVILLE, CA 95965
TEL: (530) 534-7100
FAX: (530) 534-7800

REDDING DISTRICT OFFICE:
2885 CHURN CREEK ROAD
SUITE C
REDDING, CA 96002
TEL: (530) 223-5898
FAX: (530) 223-5897

<http://lamalfa.house.gov>

July 9, 2014

John Duckett, Jr.
City Manager
City of Shasta Lake
1650 Stanton Drive
PO Box 777
Shasta Lake, CA 96019

RE: City of Shasta Lake's Water Supply Enhancement Project

Dear Mr. Duckett:

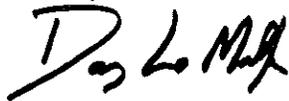
It has come to my attention that the City of Shasta Lake is applying for grant funding through the Department of Water Resources Prop 84 Drought Grant Solicitation Integrated Regional Water Management Implementation Grant Program to support your Water Supply Enhancement Project.

According to the information I received, the Water Supply Enhancement Project will allow the City of Shasta Lake to obtain long-term water supply stability, protecting the community and potentially neighboring water districts from the devastating impacts of drought. This type of project is beneficial in assisting with the water loss issues in California.

I fully support the City of Shasta Lake's application for grant funding.

Please contact my office if my staff or I may provide you with additional information or assistance.

Sincerely,



DOUG LAMALFA
Member of Congress

DL:sw