

WaterSMART: Cooperative Watershed
Management Program Grants for FY 2016

**Clean Colorado River Sustainability Coalition Watershed
Expansion and Management Project**

Clean Colorado River Sustainability Coalition

2330 McCulloch Blvd. N.

LAKE HAVASU CITY, AZ 86403

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TECHNICAL PROPOSAL

General Project Information

May 2, 2016
Clean Colorado River Sustainability Coalition
2330 McCulloch Blvd. N.
Lake Havasu City, Mohave County, AZ 86403

a. Executive Summary:

The Clean Colorado River Sustainability Coalition (CCRSCo), a watershed-based group focused on sustaining healthy water quality in the Colorado River, is proposing expansion through growth and increased diversity among its membership, further developing ties with federal and state agencies, non-governmental organizations (NGOs), and private entities, and the creation of project concepts as part of establishing a watershed management plan that could lead to better management of water quality and quantity on the lower Colorado River. Many entities that use the river for their livelihood are not currently represented in CCRSCo and they may be unaware of the river's relative health, which they may depend on for their economy. Diversifying membership will not only enhance the Coalition's perception of the main water quality concerns that exist on the river today and in the future, but will help other users better manage their businesses with respect to water quality. Collaborations with governmental agencies, NGOs, higher education, and private concerns will help further the knowledge of the river/reservoir system. Creation of a watershed plan through a prioritized set of steps (objectives and associated proposed project concepts) will provide a mechanism to better manage water quality issues in concert with water use (e.g. water supply, recreation, environment). Implementation of a watershed management plan yields optimal results when a diverse set of viewpoints are unified when crafting the plan.

Federal Funds Requested:	\$80,700.00
Non-Federal Share:	\$ 0.00
Total Project Funds:	\$80,700.00

Project Length and Estimate Completion Date

The proposed project would take no more than two years and if initiated in August 2016, the proposed start date, it should be completed by July 2018.

b: Background Data and Technical Project Description

The Clean Colorado River Sustainability Coalition (CCRSCo) was originally created in 1997 as the Colorado River Regional Sewer Coalition to help local cities and towns convert from septic wastewater treatment to centralized sewer collection systems and help improve the quality of wastewater generated at local wastewater treatment facilities. The membership of this non-profit formed by articles of incorporation under the provisions Title X, chapter 1, Article 16 of the Arizona Revised Statutes began with cities in Arizona (Lake Havasu City, Bullhead City, Parker, and Quartzite), Arizona counties Mohave and La Paz), California cities (Needles and Blythe), the

Chemehuevi Indian Tribe, the Metropolitan Water District of Southern California, two wastewater treatment agencies (the Buckskin Sanitary District and Colorado River Sewage Systems in Parker, AZ), and the Los Angeles County Department of Public Works (LACDPW). The Southern Nevada Water Authority (SNWA), the Central Arizona Project (CAP), the Clark County Reclamation District, and the city of Tucson became members in the mid-2000's. Arizona State University Colleges at Lake Havasu is latest member to join CCRSCo (2016). Each voting member pays dues; however, non-voting members, such as the CAP, do not. LACDPW and Tucson dropped out during the recession. The sewer coalition was largely unsuccessful in obtaining federal funding for major sewer expansion projects in Bullhead City and Lake Havasu City and the financial climate was not favorable in obtaining substantial funding for other members. Nevertheless, the coalition's resolve to focus on Colorado River water quality prompted a project in cooperation with the Bureau of Reclamation by creating a Technical Committee consisting of CCRSCo Board members and staff from several member agencies to develop a water quality database for surface and groundwater field data. This database is hosted by SNWA and available for public viewing on their database website. The group also decided in 2013 to revise its name (to CCRSCo), mission and bylaws to facilitate the protection and enhancement of the lower Colorado River through monitoring and analysis of water quality focus in effort to achieve the ultimate goal to assure and sustain high quality water for all users of the Colorado River. This is the only group on the river solely focused on water quality.

The current members of CCRSCo are either entirely based or operate within portions of three EPA 8-digit hydrologic units on the lower Colorado River, Havasu-Mohave Lakes, Imperial and Tyson Wash (Figure 1). The first two units are part of the river's main course and Tyson Wash is an ephemeral tributary to the Imperial Unit. These areas are largely rural with some member's physical locations tens of miles apart. Two of the hydrologic units (Havasu-Mohave Lakes and Imperial); however, receive water from upstream that includes flow from various urban, mining, recreational and agricultural activities tens to hundreds of miles to the north.

Past water quality monitoring work on the lower Colorado River has included annual and quarterly surveys by MWD, CAP, Bureau of Reclamation, USEPA, SNWA, the Chemehuevi Indian Tribe, the Arizona Department of Environmental Quality, and the U.S. Geological Survey. Most of the generated water quality data has been included on the SNWA database.

CCRSCo would like to accomplish more of its mission by expanding its membership and developing a watershed management plan for the two Colorado River main stem HUCs. Though the coalition consists of diverse interest groups, certain perspectives are missing and others may be under represented. The eventual goal is to build a strong membership along all of the lower Colorado River to the international border. For the purpose of this grant proposal; however, the coalition can expand diversification by focusing on increasing membership within the Havasu-Mohave Lakes and Imperial hydrologic units. There are several agricultural entities, businesses, and other Indian tribes and communities that lie inside these units (Figure 2). Environmental groups such as The Nature Conservancy would also broaden the depth of the water quality conversation. The expansion will help facilitate water quality monitoring and will be integral to

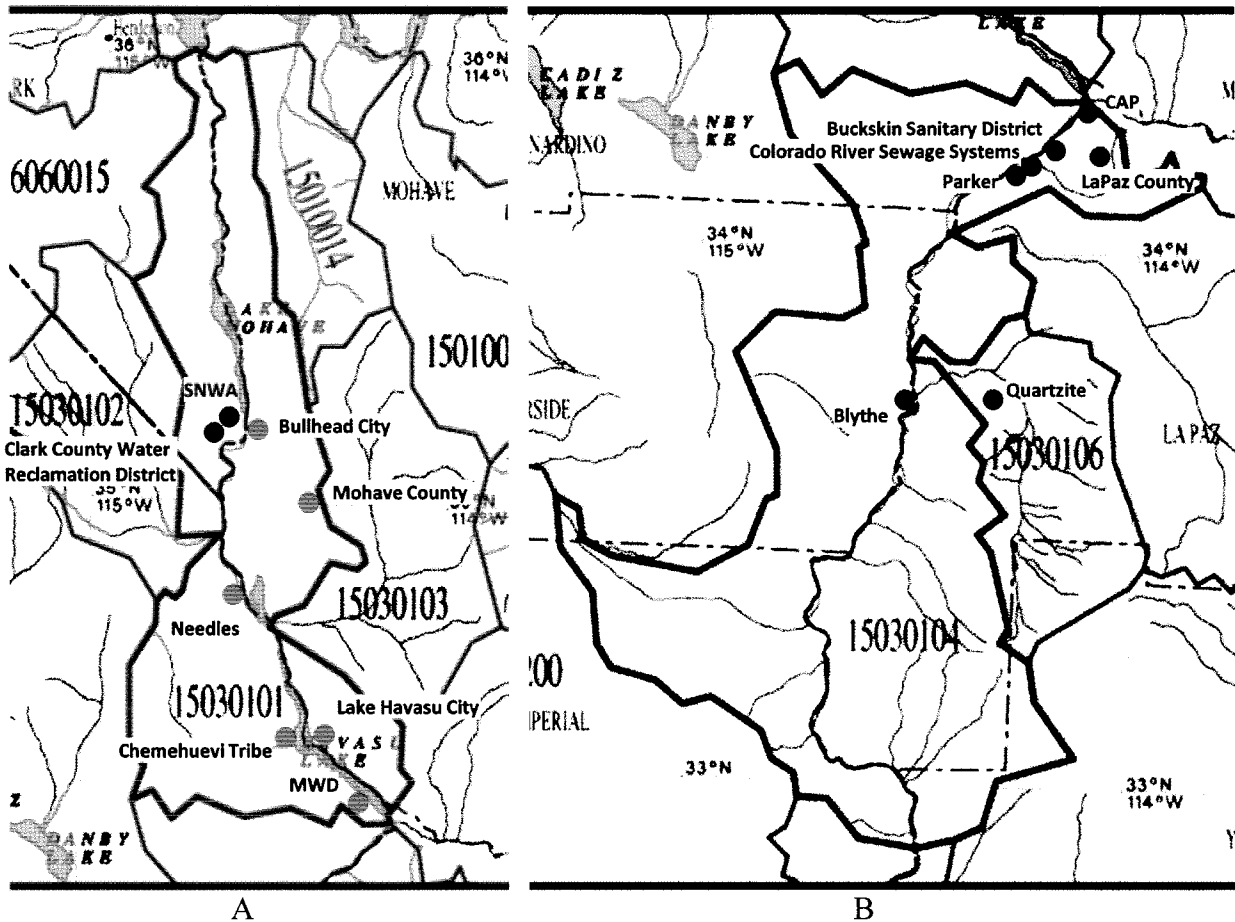
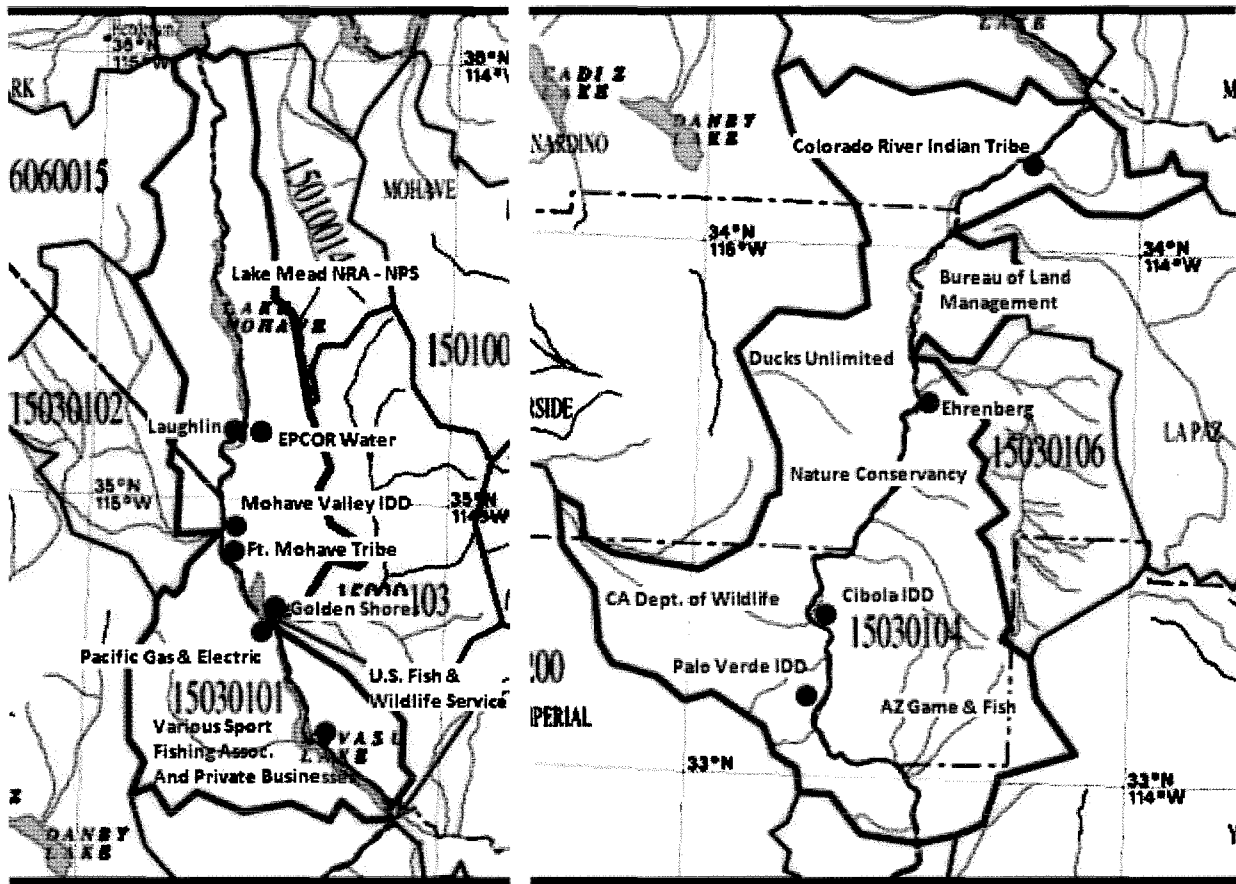


Figure 1: A) Havasu-Mohave Lakes HUC (15030101) on the main stem of the lower Colorado River in which the following members of CCRSCo either operate or are stationed: Southern Nevada Water Authority, Metropolitan Water District of Southern California, Clark County Water Reclamation District, City of Needles, Mohave County Board of Supervisors, Bullhead City, the Chemehuevi Indian Reservation and Lake Havasu City.

B) Imperial HUC (15030101) on the main stem of the lower Colorado River in which the following members of CCRSCo either operate or are stationed: Central Arizona Project, LaPaz County, Buckskin Sanitary District, Town of Parker, Colorado River Sewage Systems, City of Blythe, and Town of Quartzite.



A

B

Figure 2: Identified prospective CCRSCo members and cooperative entities within the Havasu-Mohave Lakes (A) and Imperial (B) HUCs. Other entities not within these HUCs include University of Arizona, University of Nevada at Las Vegas and Northern Arizona University. The proposed watershed expansion process will include searching for other potential members.

hydrologic unit planning for sustainable high water quality use. The Chemehuevi Indian Tribe has a draft of an USEPA watershed plan for the Lake Havasu portion (HUC-1503010107) of the Havasu-Mohave Lakes hydrologic unit. This plan may be used as a template to generate a watershed management plan covering the larger hydrologic units.

CCRSCo is developing a website, which would be a first step to inform the public, provide resources on how to get involved and include a recruitment component to attract potential members. However, CCRSCo has no staff to implement the on-the-ground the recruiting process and would like to hire a part-time watershed coordinator that can focus on the day to day activities, coordinate recruitment efforts, and help organize/develop the watershed management planning process. This coordinator can also help develop a process to approach federal, state and higher education entities that would lead to developing cooperative agreements or collaborations with potential research and project work on the river. There are several such entities located near the river or have on-going research or management interests on the river; The Bureau of Land Management, U.S. Fish and Wildlife Service, National Park Service, Desert Landscape Conservation Cooperative (LCC), Arizona Department of Game and Fish, Nevada Department of Wildlife, California Department of Fish and Wildlife, University of Nevada at Las Vegas, the Desert Research Institute in Las Vegas, the University of Arizona (Yuma campus), and Northern Arizona University (Lake Havasu City and Bullhead City). The watershed coordinator would work closely with the CCRSCo Technical Committee and progress reports would be a regular agenda item at CCRSCo quarterly meetings.

Much of the lower Colorado River south of Hoover Dam has had limited scientific study, with the exception of work focused by the LCR Multispecies Conservation Program at their habitat restoration/creation sites, and a few projects conducted by the U.S. Fish and Wildlife Service at refuges, by the U.S. Geological Survey and National Park Service in Lake Mohave and by CAP on aquatic vegetation growth in Lake Havasu. Water quality studies attentive to water flow dynamics of the river/reservoir system, nutrient loading/accumulation, recreational impacts and ecological changes caused by quagga mussels and other invasive species are largely lacking. There are also tributaries to the lower Colorado River that, although they are usually dry, need to be investigated as they could be a source of water quality impairment via flood waters or groundwater. Lake Havasu is a pivotal reservoir in that two major diversion points for municipal and agriculture water use are in place, one via the California Aqueduct (MWD) to the Los Angeles and San Diego metropolitan areas and the other via the Central Arizona Project (CAP) to Phoenix and Tucson metropolitan areas. CCRSCo can play a helping hand to maintain good water quality to these facilities. Together with well developed watershed management plan and expanded cooperation from other potential members/collaborators, CCRSCo will move ahead to achieving its sustainability goal.

Evaluation Criteria

Evaluation Criteria A: Watershed Group Diversity and Geographic Scope (30 points)

Up to 30 points may be awarded for this criterion. Priority will be given to the establishment/ expansion of a watershed group that represents maximum diversity of interests, including representatives of the different sectors and interests identified in the definition (e.g., hydropower production, livestock grazing, state and tribal governments) (see: Section I.B., Objective of Funding Opportunity Announcement). Priority will also be given to those applicants that target stakeholders and project concepts for small to medium sub-basin sized watersheds with an approximate 8-digit hydrological unit code, as defined by the U.S. Geological Survey (USGS)

Subcriterion No. A1. Watershed Group Diversity

Points shall be awarded to proposals that encourage collaboration with a diverse array of stakeholders across the watershed.

Task B—Expansion of an Existing Watershed Group: *Please describe the current membership of the watershed group and explain whether the group is already diverse. If the group is not as diverse as it could be, please explain any planned efforts to expand the diversity of the group. In responding to this sub-criterion, please include:*

- 1) An explanation of the current membership of the watershed group and whether the current membership is representative of the affected stakeholders within the watershed. In other words, if the watershed group is already diverse, please provide support demonstrating the diversity of the group.*
- 2) If the watershed itself does not include a diverse set of interests and sectors, please provide an explanation of this also (e.g., some watersheds may not include affected stakeholders in all of the sectors identified in the definition of a “watershed group” provided in Section I.B. Objective of Funding Opportunity Announcement).*
- 3) If there are plans to expand the watershed group, please provide a description of the affected stakeholders that will be targeted for incorporation into the group.*
- 4) Description of any efforts that you will undertake to increase the diversity of the watershed group and to inform stakeholders about the efforts of the watershed group, such as engaging in outreach to include new members or collaborating with different groups or partners (e.g., outreach or partnership activities, public meetings, newsletters, marketing materials, or recruitment of new members).*
- 5) Any other support demonstrating that the watershed group does or will include a diverse membership, representative of the interests and sectors existing within the watershed.*

Section V. Application Review Information

The Clean Colorado River Sustainability Coalition (CCRSCo) membership consists of the cities of Lake Havasu City, Bullhead City, Blythe and Needles, the towns of Parker and Quartzite, the Arizona counties of Mohave and La Paz, the Chemehuevi Indian Tribe, the Metropolitan Water District of Southern California (MWD), the Southern Nevada Water Authority, the Central Arizona Project (CAP), the Buckskin Sanitary District and Colorado River Sewage Systems in Parker, AZ, the Clark County Reclamation District in Laughlin, NV, and Arizona State University Colleges at Lake Havasu City. Each voting member pays dues; however, non-voting members, such as the CAP and the Bureau of Reclamation Lower Basin Regional Office, do not.

The group is moderately diverse in that some of the members such as the cities, towns, and counties are more focused on local and regional potential economic impacts resulting from degraded water quality, while the more regional groups like the water providers want to make sure that the water they transport well away from the river is dependably useful for their purposes. The Southern Nevada Water Authority is also concerned about potential water quality impacts down river that stem from return flow activities in Lake Mead. Similarly, the sanitary facilities in Clark County, Nevada and La Paz County, Arizona are most interested in keeping harmful waste from entering the river/reservoir system. The most recent member, Arizona State University Colleges at Lake Havasu City, is interested in applied research work to address environmental and water quality issues on the lower Colorado River.

The lower Colorado River supplies water to approximately 30 million people and to rich agricultural regions in southern Arizona, southern California, and Mexico where about 90% of all winter crops sold in the United States are grown. When considering water quantity, especially in a prior appropriation doctrine of an over-allocated river system, many members of this coalition have the mission to manage their water supply to the benefit of their interests. Whereas considering water quality, all share in the common effort of keeping the water usable for all consumptive purposes and to ensure a sustainable healthy lower Colorado River system into the future. Working with diverse groups will bring together a more complete picture of the concerns within the watershed. This is a main reason CCRSCo would like to expand its diversity to include other interests. Perspectives missing include agriculture, business, non-profits and a greater presence of Native American input. Examples of potential new members include the Colorado River Indian Tribes, the Fort Mohave Tribe, Pacific Gas & Electric, Palo Verde, Cibola, and Mohave Valley Irrigation and Drainage Districts, EPCOR (a private water provider), watercraft businesses and associations (e.g. Lake Havasu Marine Association), private campgrounds on the river, and non-profit organizations such as the Nature Conservancy and Trout Unlimited. There are also numerous local aquatic-related businesses and associations, like the Havasu Marine Association, who have strong interests in how the watershed is managed. Pacific Gas & Electric and the Colorado River Indian Tribes have expressed recent interest (2016) in joining the coalition.

There are state and federal agencies that have specified managerial jurisdictions over most of the lower Colorado River system that may not be allowed to become coalition members, such as the U.S. Fish and Wildlife Service, the National Park Service, the Arizona Departments of Environmental Quality and Game and Fish, California Department of Fish and Wildlife, and Nevada Department of Wildlife. Instead, CCRSCo is interested in forming collaborative partnerships with these agencies to work on common water quality issues within the watershed (e.g. *Microcystis* outbreaks) and to seek their input during project concept development that addresses those issues while staying aligned with their management guidelines.

Outreach efforts to recruit new members will include a combination of: identifying the interests of potential members and how those interests relate to water quality issues on the lower Colorado River, initiate on-site presentations and discussions to perspective members that includes seeking help in identifying project concepts for management planning, invite prospective members to coalition meetings, promote the advantages of being associated with CCRSCo's newly designed website, develop printed materials promoting mission and other activities focused on

spotlighting the objectives and goals of the coalition.. This effort will require a watershed coordinator position to facilitate this work. CCRSCo will impress that water quality is a concern for all and their perspective on the river system is critical to a balanced approach of water quality management and monitoring. Entities that are not interested in memberships would still be encouraged to get involved with any current or future projects concerning the understanding and health of the watershed. A unified, regional group would best provide considerations from various view points when developing project concepts to help with watershed management planning and would provide a stronger force to attract various funding sources not currently available.

Agricultural and other business interests on the lower Colorado River are not presently represented within CCRSCo. Watershed scale water quality planning would be incomplete without these aspects. Agriculture is prominent in Mohave Valley, Arizona and in a vast strip on either side of the river south of Parker, Arizona. The later includes efforts by the Colorado River Indian Tribes (CRIT) who have sent representatives to recent CCRSCo quarterly meetings and are contemplating joining CCRSCo. Pacific Gas & Electric is operating a hexavalent chromium remediation site at Topock, California and has a very heightened concern for potential contamination in the lower Colorado River. Company representatives have given presentations and tours of their efforts at CCRSCo meetings and may become a member in 2016. CCRSCo will target more of these interests to help further diversify participation and improve geographical coverage of the watershed.

Subcriterion No. A2. Geographic Scope

Under this sub-criterion, higher priority will be given to proposed or existing watershed groups representing the full geographic extent of the watershed. Applicants will receive points based on the extent to which they intend to do work across the entire extent of the watershed.

In addition, proposals that target small to medium sub-basin sized watersheds with an approximate 8-digit hydrological unit code, as defined by the U.S. Geological Survey (USGS)

<<http://water.usgs.gov/GIS/huc.html>>, will be given priority over large or very small watersheds.

Task B—Expansion of an Existing Watershed Group: *Please describe the extent to which the existing watershed group represents the full geographic scope of the watershed.*

- 1) Describe the extent to which the existing watershed group already represents the full geographic scope of the watershed.*
- 2) Provide a map illustrating the geographic boundaries of the watershed and the boundaries of the existing watershed group. If a map cannot be provided, please describe the geographic scope to the best of your knowledge.*
- 3) Describe any efforts that you will undertake to expand the geographic scope of the watershed group, such as engaging in outreach to include new members with the full geographic scope of the watershed.*

The majority of the current membership lives or operates within the Havasu-Mohave Lakes HUC (15030101) and the Imperial Reservoir HUC (15030104), though the town of Quartzite resides within the Bouse Wash HUC (15030106), an ephemeral tributary to the Colorado River (Figures 1 and 3). The current membership represents the bulk of the population living within the HUCs and also agencies that withdraw water from the river for use elsewhere. The membership area though is relatively small compared to the size of the watershed. The shaded area in Figure 3,

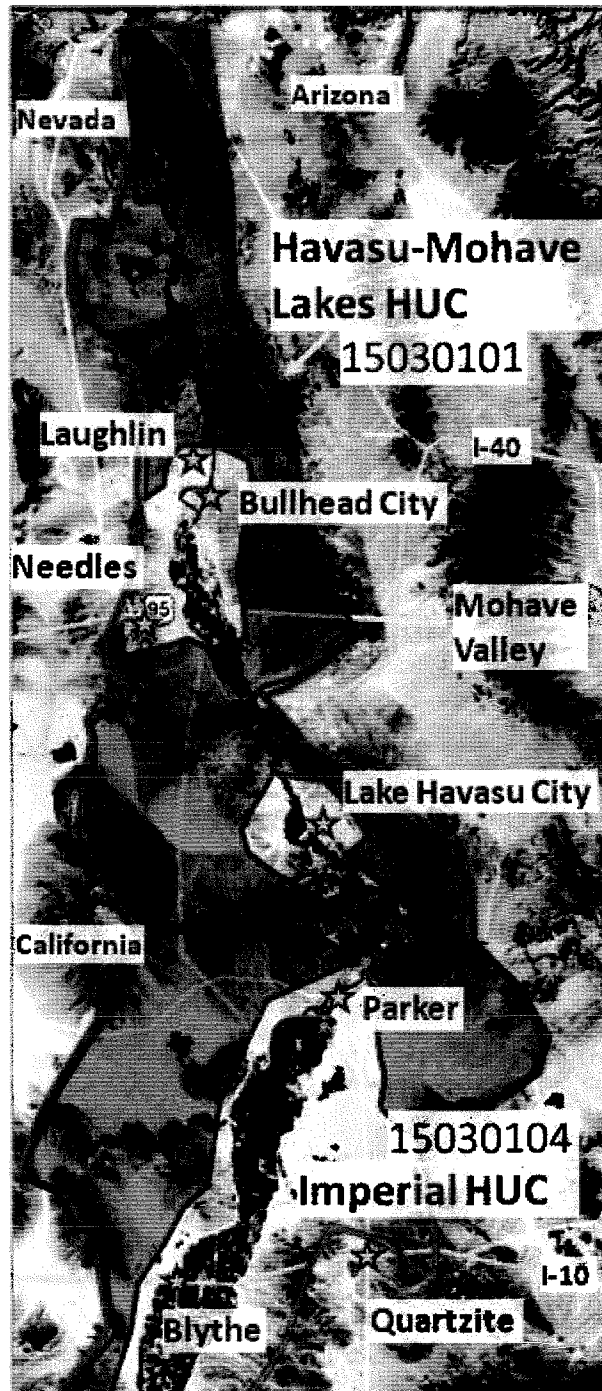


Figure 3: Location of Havasu-Mohave Lakes and Imperial HUCs on the lower Colorado River. CCRSCo membership and potential members are within the two HUCs. Shaded area federal/state lands not currently represented in CCRSCo membership.

which occupies the majority of the watershed geographic area, represents federal, state, county, and private lands managed by various agencies including the U.S. Fish and Wildlife Service, the National Park Service, Bureau of Land Management, the State Land Departments of Arizona, Nevada, and California and some county-managed parcels. They also manage much of the land of the two tributary HUCs that drain directly into the Havasu-Mohave Lakes HUC; Sacramento Wash (15030103) and the Bill Williams River (15030204). The disproportionate amount of unpopulated managed lands within the watershed is a primary reason for developing collaborations/partnerships with these agencies. Any watershed planning without working with these agencies might neglect their resource planning missions, which could be in conflict with resulting project concepts.

One avenue to explore for federal government inclusion is to work with the Desert LCC, administered by the Bureau of Reclamation, to tie water quality issues between the main stem of the Colorado River with the surrounding desert lands. CCRSCo is already indirectly working with the Bureau of Land Management Lake Havasu Field Office, the Bureau of Reclamation, Arizona Department of Environmental Quality and the Lake Havasu Marine Association, which provide access on the river for water quality monitoring and research.

Further membership development in the un-shaded areas within the HUCs (Figure 1) include agricultural interests in Mohave Valley and south of Parker, businesses along the river, particularly small private campgrounds, boat manufactures and rental companies, restaurants and hotels on the shoreline. The agriculture businesses should have interest in water quality, especially if they are growing crops for human consumption. A showcase example is the detection of perchlorate in lettuce and other crops in the Yuma area, which was leaked from a facility in Las Vegas into Lake Mead. The smaller businesses depend on aquatic tourism for their economy and water quality impairments would affect their bottom line. Outreach strategies towards these entities would be customized for each group type to best show the importance of their inclusion to the watershed planning process. A watershed coordinator assigned for recruiting and project concept development is needed.

Evaluation Criteria B: Addressing Critical Watershed Needs (30 points)

Up to 30 points may be awarded to proposals demonstrating that there are critical issues or needs within the watershed that can be addressed by the new or existing watershed group. Sub-criteria are not in descending order of importance; each sub-criterion will be worth up to 15 points.

Subcriterion No. B1. Critical Watershed Needs or Issues

Please describe in detail the critical issues or needs occurring within the watershed including, for example: declining ecological resiliency, water shortages, flooding, structural impairments, water quality issues (e.g., addressing Total Maximum Daily Loads, or targeting high priority activities in your state's "Measure W" watersheds), endangered species issues, conflicts over water supply, and other related issues faced by affected stakeholders. Endangered species issues may focus on, but are not limited to, activities prioritized by resource agencies such as National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA-NMFS) or U.S. Fish and Wildlife Service (USFWS), and appropriate state natural resource agencies.

Task B—Expansion of an Existing Watershed Group: *For existing watershed groups, please describe in detail the critical issues or needs existing within the watershed, and if applicable, how the issues and needs being addressed have change or evolved since the formation of the group.*

In recent years, the Colorado River has been named one the most endangered rivers in the United States by American Rivers and on their 2014 list, two parts of this watershed were named at or near the top. The lower Colorado River relies on these upper reaches not only for winter snow packs that supply water, but also for good water quality. Far and away the most pressing issue is decreasing water volume due to sub-par snow accumulations experienced in the Colorado River Basin the last 16 years as drought lingers onward. This along with longer term increasing average annual temperatures is changing the dynamics of annual thaw and water flow from mountain sources. Decreasing water volumes necessarily leads to degraded water quality such as increased saline conditions in the river system, which has already had legislation through the 1974 Colorado River Basin Salinity Control Act, to curb total dissolved solid content into Mexico. However, the issue with salinity is twofold. Cumulative up river use and return flow almost always results in increased dissolved solid concentrations. Total dissolved solid levels in the river increase from just over 300 mg/L the Rocky Mountains to 601-700 mg/L in the Havasu-Mohave Lakes HUC to over 700 mg/L at the lower most stretch of the river in the United States (Figure 4). The combination of population growth along the entire Colorado River and protracted drought in the southwestern United States translates to increased constituent-laden return flow and overall decreasing water volumes in the watershed. Total dissolved solid concentrations are expected to continue to rise under this scenario.

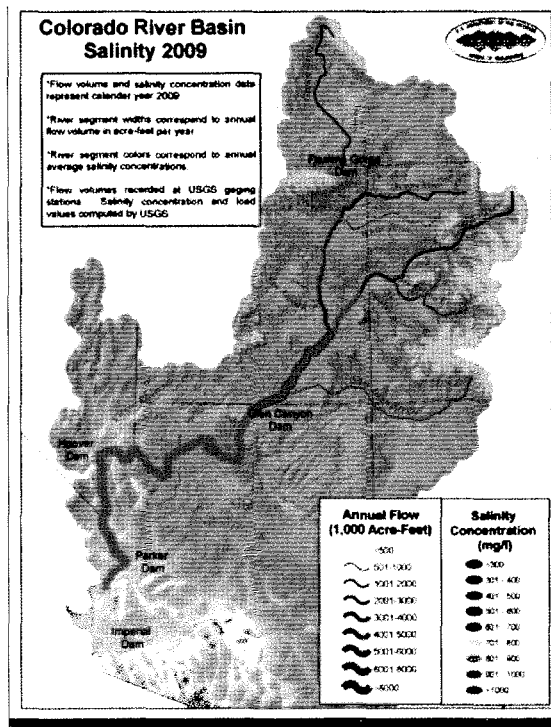


Figure 4: Colorado River Basin salinity concentrations in 2009 (BOR 2009 Colorado River Salinity Control Program report).

A major recent concern is the pronounced development of the cyanobacteria, *Microcystis sp.* in the lower Colorado River since at least 2010. Outbreaks of this organism were initially noticed in the fall and spring in the three major reservoirs (Lakes Mead, Mohave and Havasu) punctuated by declines in the winter and summer. Random water samples collected in Lake Havasu during the outbreak periods did not reveal cyanotoxins over 1 ug/L and most samples had concentrations below detection limits. The outbreak pattern changed dramatically during the 2014-2015 fall to summer period. Thick *Microcystis* mats developed in October of 2014 and continued to grow throughout the winter and into the spring/early summer of 2015 before declining in population. Water samples taken in Lake Havasu and Lake Mead during this bloom event contained microcystin at concentrations up to 40 µg/L and over 400 µg/L, respectively, far exceeding the World Health Organization's recommended advisory level of 1 µg/L for safe drinking water. The suspected causes of this event were the record-breaking warm temperatures for this part of the country and the feeding dynamics of invasive *Dreissena rostriformis bugensis* (quagga mussels), another watershed concern. Research in the Great Lakes has shown that quagga mussels selectively feed by rejecting *Microcystis* while consuming other phytoplankton, thus giving *Microcystis* a competitive edge for nutrient consumption. A particularly strong El Nino event during the 2015-2016 fall to spring period has brought cooler temperatures and generally windier conditions, neither of which are conducive for explosive *Microcystis* growth, though dispersed colonies have been present. Even so, microcystin levels up to 70 µg/L have been recorded in Lake Havasu. Since this toxin can stay intact in the water column for weeks after the organism has died off, this is a major concern particularly for those diverting water for human consumption. Though this may seem farfetched, considering the hundreds of miles of Colorado River water is transported to southern California and Phoenix-Tucson, a 2001 green algae bloom originating in Lake Mead quickly reached reservoirs in southern California.

Quagga mussels, which were discovered in all three lower Colorado River reservoirs in 2007, have quickly established themselves as an ecosystem modifier and have created other environmental issues. Their feeding habits have improved water clarity as expected, but this has led to explosive aquatic plant growth in certain areas, some of which is invasive (primarily European milfoil). This growth has affected boat navigation in Lake Havasu and has become a major maintenance issue for both the Bureau of Reclamation at Parker Dam and the water diversion intake at the Central Arizona Project. The game fishing industry has also seen changes in the fisheries, including the decrease of threadfin shad, a primary food stock for striped bass, an increase in size of red-eared sunfish, and the appearance and growth of leeches in Lake Havasu. Quagga mussels have become well established in the lower Colorado River and will continue to influence change in the river/reservoir ecosystem.

The river has had other contaminant concerns, particularly, tributary fed contamination, the direct threat of chromium leakage into the river, uranium contamination, nutrient loading and possible accumulation at multiple locations, and localized sediment transport issues.

The Animas River spill in 2015 opened the eyes of many resource managers around the country and has only provided another example of concerns of widespread contamination threats. Perchlorate sourced from Las Vegas Wash is another good example of the potential of a particular contaminant to have wide-spread impacts. Though this specific concern is under mitigation and is no longer considered a threat, the spread of this compound down river impacted

many agricultural interests at the southern end of the river and required several state and regional agencies to focus on perchlorate monitoring. MWD, SNWA, the Nevada Division of Environmental Protection, the Arizona Department of Environmental Quality and several Irrigation and Drainage Districts spent a considerable amount of time and money carefully monitoring perchlorate to make sure its effects was minimized.

Hexavalent chromium contamination threats occur in two known localities, Topock, California at the Pacific Natural Gas and Electric compressor station and in Lake Havasu City. An extensive and expensive effort has been on-going at the Topock site to delineate and mitigate the site's chromium plume. The mitigation efforts will continue for several decades. An investigation of the Lake Havasu City chromium plume is currently underway to delineate the magnitude of contamination and extent of the plume, which is approximately ½ mile from Lake Havasu's shoreline.

Uranium tailing piles near Moab, Utah pose a moderate threat of leaching into the Colorado River. Removal of the tailings piles began in the mid-2000's, but the Great Recession stalled these efforts. As of February 2014, the U.S. Department of Energy transported about 6.5 of the 16 million tons of uranium tailings from the banks of the Colorado River to another site. Groundwater monitoring and remediation is taking place at the site to recover uranium and other constituents before it enters the river. CCRSCo will be monitoring the activities until all uranium has been removed from the site, including that in the groundwater.

Nutrient loading from septic tanks close to the river is a continuing concern. Groundwater carrying septic sewage slowly seeps into the river from below, adding nitrates and phosphates that may be available for aquatic plant growth. Although this situation has been somewhat mitigated with significant sewer system expansion in Bullhead and Lake Havasu Cities, there are thousands more septic systems spread out through the lower reaches of the river. Nutrient loading from agricultural non-point sources via the same pathway has not been quantified and a recent systematic survey of nitrates in groundwater wells adjacent to the river has not been done. Preliminary work in Lake Havasu though indicates that lake sediments may act as a phosphorus sink. High concentrations of total phosphorus have been detected in surface sediments on the lake bottom and there is evidence that phosphorus cycles from the bottom sediments into the water column during lake stratification.

Localized sediment problems are known in Lake Havasu. There is an ever shifting sand situation on the delta at the north end of the lake. This presents boat navigation issues, to the point that a navigation channel was dredged three years ago, but since then the channel has been slowly filling in. The second large delta into the lake occurs at the southern end from the Bill Williams River. Shallow water conditions have spread outward into the lake with accompanying vegetation growth. Similarly, a small delta of a wash in Lake Havasu City was dredged in 2011 and was mostly rebuilt during a 50-75 year flood event in July 2012. The wash delta created shallow water conditions that again deterred boat navigation and provided a shallow water environment for e. coli outbreaks and resultant beach closures. Bullhead City has also experienced the creation of multiple deltas at locations where tributaries flow into the Colorado River during storm runoff events.

The expansion of CCRSCo to include new members and collaborators will help to address these issues and provide a greater perspective on how to approach these concerns within the watershed.

Subcriterion No. B2. Watershed Group Contributions that Address Watershed Needs or Issues

Task B—Expansion of an Existing Watershed Group: *Please describe in detail how the watershed group plans to continue or expand upon existing efforts to contribute towards improved management of the watershed. In responding to this sub-criterion, please:*

- 1) Describe how the watershed group will address critical issues or needs within the watershed*
- 2) Include a description of accomplishments by the watershed group to date in addressing critical issues or needs, and how the watershed group will build on these accomplishments through the activities proposed here*
- 3) In addition, please describe how the watershed group plans to enhance collaboration between existing stakeholders in addressing critical issues.*

1. With the exception of Lake Mead, the lower Colorado River within the coalition's HUCs have not received a lot of scientific attention to better understand the hydrologic dynamics under a changing climate that includes long-term drought and associated ecosystem adaptation since the introduction of quagga mussels. How CCRSCo plans to address the critical issues mentioned above is predicated on how these issues will impact water diversion and use, recreation and the regional economy, and the aquatic environment. Since some basic information of the aquatic system is currently unknown (climate changes on lake stratification timing and intensity, quagga mussel influences on *Microcystis* and aquatic vegetation, nutrient cycling, etc.), a two-pronged approach is envisioned; one path will include the collection and compilation of basic scientific research of the aquatic system and surrounding landscape, and second, the prioritization of specific issues from which project concepts are developed. Both components will lead towards a watershed management plan describing needs and outlining action items (projects) for restoration/mitigation or recommendations for adaptive watershed management practices. Further, the coalition physical body consists of member representatives, whom all have full time responsibilities beyond CCRSCo. The only way to accomplish the above is to hire a watershed coordinator to focus on organizing a strategy or work plan with the CCRSCo Board and Technical Committee to prioritize the issues and identify appropriate actions, help with project concept development, write a watershed management plan, and coordinate membership recruitment to expand member and geographic diversity.

2. CCRSCo has primarily worked until recently to identify water quality issues, compile water quality data and keep abreast of these issues. CCRSCo began compiling existing lower Colorado River surface water and groundwater quality data in 2008 for input into a newly created database section developed by SNWA. This collaborative process was formalized through a cooperative agreement with the Bureau of Reclamation, Lower Colorado River Regional Office. This database provides a single-site resource for water quality and is publicly accessible via an assigned code, which is used by SNWA to monitor database activity. The database is continuously augmented as more information becomes available. Data stored in one place facilitates better water quality management on the river/reservoir system as it gives baseline

information to different river reaches that can help entities make decisions on how to approach a concern.

The agreement also set up a bi-monthly monitoring program in Lake Havasu by the Bureau of Reclamation that started in 2010 and continues to the present. This program was augmented in 2015 with the Arizona Department of Environmental Quality (ADEQ) agreeing to monitor Reclamation's sample sites on the off months of Reclamation's schedule to complete monthly data collection. This program has helped to set a baseline of physical and chemical conditions in this lake and the results of this work has helped to identify or clarify some of the critical issues mentioned earlier (e.g. Microcystis / microcystin discovery; quagga mussel ecological role in the lake, the effects of climate change on the river/reservoir system; nutrient loading, etc.).

Some members of CCRSCo (MWD, CAP, SNWA and the Chemehuevi Indian Tribe) also have on-going water quality monitoring surveys in Lake Havasu, Lake Mohave and a portion of the river stretch between these two reservoirs. SNWA is working cooperatively with the National Park Service on monitoring programs in Lakes Mead and Mohave. One of the products expected from this work is water model representing the physical properties and flow characteristics of water transferred from the reservoirs and the river. SNWA is also interested in including Lake Havasu in the model and is cooperative working through CCRSCo with the Bureau of Reclamation, Lake Havasu City, MWD, the Chemehuevi Tribe and ADEQ. Lake Havasu City has also been working on a study with the Bureau of Land Management to determine water quality in storm water runoff from the city and the fate of constituents and sediment into Lake Havasu. This work has implications to the two major diverters of water from Lake Havasu, MWD and CAP, that collectively withdraw approximately 2.5 million ac-ft/year.

Members of CCRSCo have been very concerned and are involved with on-going quagga mussel and other invasive species issues, research and education. This includes attending quarterly quagga mussel and ecosystem workshops and informational exchanges in Las Vegas (hosted by SNWA) and in Lake Havasu (hosted by the Bureau of Land Management). Several members, including SNWA, MWD and CAP, have actively studied and tested various methods for reducing or eradicating the quagga mussel population from the entire river/reservoir system, and this work will continue. CAP commissioned a study in 2011 to better understand the extent and nature of the explosive aquatic plant growth in Lake Havasu. Many of the CCRSCo members are also helping to fund and are on the steering committee of the Lower Colorado River Multispecies Conservation Program managed by the Bureau of Reclamation.

CCRSCo members (Chemehuevi Indian Tribe, Lake Havasu City, CAP and MWD) have been working on developing an EPA watershed-based plan for the Colorado River-Lake Havasu" watershed (HUC-1503010107), a sub-basin of the Havasu-Mohave Lakes HUC. A draft of the plan has been through several revisions to this point and is still being evaluated and reviewed by partners. The plan follows EPA criteria for this process and contains many of the water quality concerns expressed in this grant proposal. As part of the coalition's expansion, the current watershed-based plan, when done, will serve as a model to generate similar plans for the rest of the membership's geographic coverage. Specifically, plans for the Imperial HUC and Lake Mohave to Topock portion of the Havasu-Mohave Lakes HUC.

Ecosystem adaptation in Lake Havasu and probably Lake Mohave is presently occurring with the presence of quagga mussels. Several first-time events have taken place over the last several years and changes have been noted in the aquatic community, particularly explosive growth of aquatic plants, population shifts in plankton groups and size increases in scavenging invertebrates and some fish. The CAP, Lake Havasu City and even Reclamation are utilizing aquatic plant harvesting technologies to keep the plants from interfering with operations and boat navigation. There have also been major foaming events possibly tied to seasonal lake overturning and the growing detritus of the aquatic plant materials. With few exceptions, much of what has been observed has not been studied scientifically.

3. Cooperative work on water quantity issues has provided the opportunity for the water providers in CCRSCo to focus on the second most important issue of water quality, which they have since 1997. Expanding CCRSCo membership will also allow a better interaction between water providers and consumers that will help improve watershed management. CCRSCo would like to develop cooperative arrangements with local higher education institutes to help begin such research to better understand how the lower Colorado River is responding to quagga mussels and climate change. To that end, The ASU Colleges at Lake Havasu recently joined the coalition. They are interested in starting a lower Colorado River research program and the CCRSCo Board recently approved funding for ASU to conduct a topographic and imaging survey of Lake Havasu. Over the past year, members of the coalition (Reclamation, Lake Havasu City, Chemehuevi Tribe and ASU students) as well as prospective members (CRIT) have worked together to informally train personnel on water quality monitoring field sampling techniques and protocol. The point of this work is to help sync sampling techniques among monitoring programs so that future work on critical issues may be done with the greater resources of the CCRSCo membership rather than the burden held by one agency.

CCRSCo has not yet directly worked with the Desert Landscape Conservation Cooperative; however, a member of CCRSCo's Technical Committee and an employee of Lake Havasu City is a member of that cooperative's Local Governments Committee. CCRSCo is seeking to help develop a dialog with the Desert LCC as goals within their draft five-year work plan, such as increased collaboration and communication, science development, monitoring programs, and outreach/education, are in concert with the development of project concepts for a lower Colorado River watershed management plan.

Evaluation Criteria C: Implementation and Results (30 Points)

Up to 30 points may be awarded to proposals based on the extent to which the proposal demonstrates that the applicant understands program requirements, is able to implement planned activities within the required two year time frame, and the extent to which the proposed activities will complement existing Federal, State or Regional planning efforts. Sub-criteria are in descending order of importance.

Subcriterion No. C1— Understanding of and Ability to Meet Program Requirements

Task B—Expansion of an Existing Watershed Group: *Applicants should describe their plan for implementing the proposed scope of work. Please include:*

1) An estimated schedule that shows the stages and duration of the proposed work, including major tasks, milestones, costs, and dates (e.g., major milestones should include meeting program requirements, including the development of a mission statement, watershed restoration plan, bylaws

and articles of incorporation, and the development of project concepts). Applicants may refer back to their Technical Proposal if this information is provided there and do not need to provide duplicate information in addressing this criterion if it exists elsewhere in the applicant's proposal.

2) If cost share is provided, please demonstrate the level of readiness for in-kind and/or cash contributions.

3) Please provide a specific discussion of any problems or major difficulties anticipated in performing or accomplishing the work.

4) Describe any previous work or activities (e.g., collaborative efforts, studies, or projects) that relate to implementing the proposed scope of work.

1. Please see the two presented work schedules below and on the next page:

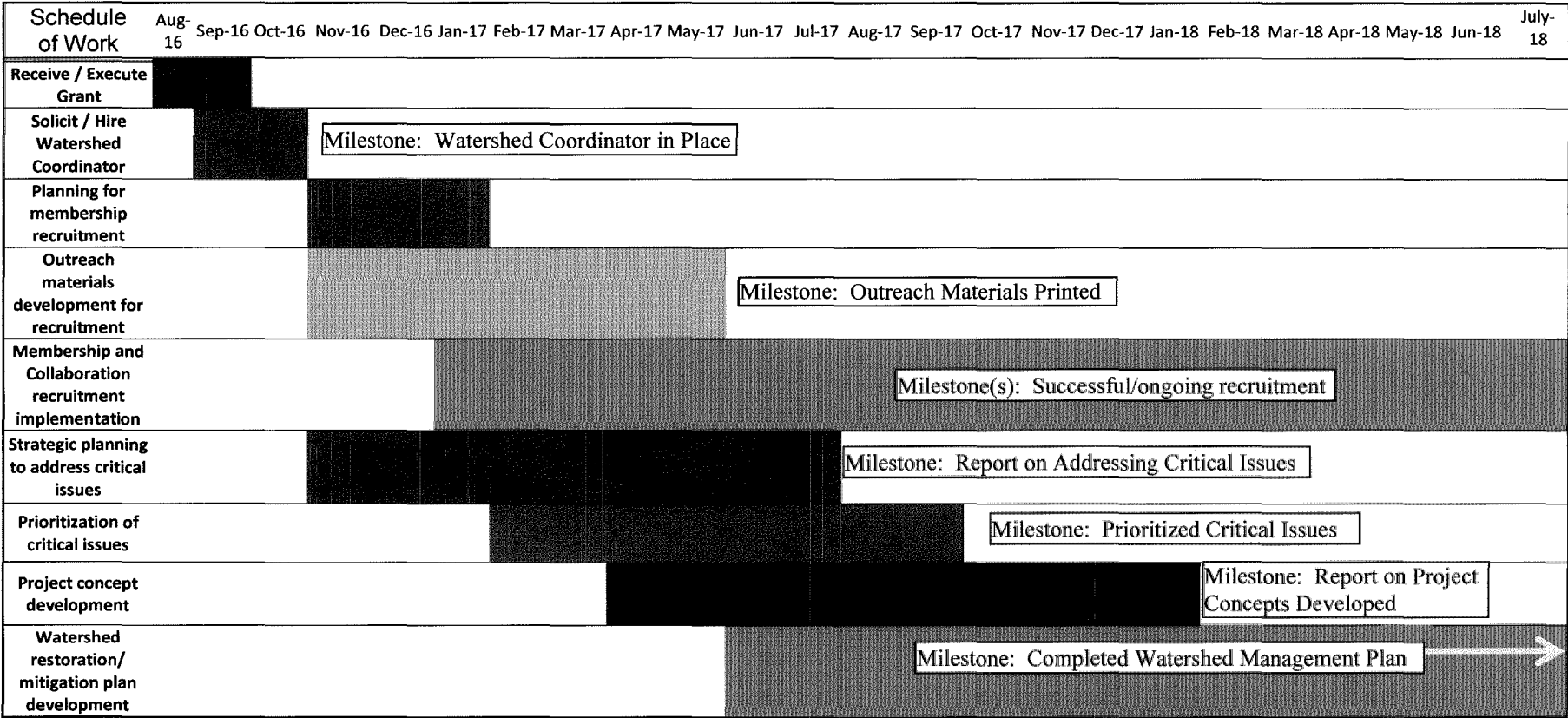
Proposed Work Schedule for CCRSCo Watershed Expansion	
<u>Timeline</u>	<u>Scheduled Activity</u>
August/September 2016	Grant Award
September/October 2016	Submit solicitation for and hire a part time watershed coordinator.
November 2016	Begin preparations for outreach materials – planning for membership expansion and critical issues strategy .
January 2017	Initiate membership recruitment and seek potential collaborations with federal, state regional and academic entities.
February 2017	Initiate prioritization of critical issues.
April 2017	Initiate development of project concepts.
June 2017	Outreach materials printed and initiate development of watershed management plan.
August 2017	Report on addressing critical issues.
January 2018	Report on project concepts developed.
July 2018	Final Watershed Plan development Report and Close-out Project.

2. CCRSCo intends to provide office space, office supplies and associated equipment (computer etc.) for a part time watershed coordinator, mostly likely at a Lake Havasu City municipal building.

3. CCRSCo realizes that not all prospective members will be immediately receptive to joining the coalition. Although CCRSCo does not expect any major problems or difficulties in implementing a membership recruitment program, it does recognize that more effort will be involved in successfully recruiting certain entities than others. Collaborations with government agencies and NGOs will take careful planning, but the coalition and its members have experience in this area. Developing project concepts agreed by all CCRSCo members and partners will be a challenge, but should not be a major issue and compromises will be expected.

4. Please see Background Data and Technical Project Description and Subcriterion No. B2. Task B narratives. Much of the work to date includes baseline data gathering and storage in preparation of understanding conditions in the watershed for better management practices.

Request for Proposal No. R16-FOA-DO-008



Subcriterion No. C2— Building on Relevant Federal, State, or Regional Planning Efforts

Please describe how the proposed activities of the watershed group will complement or meet the goals of applicable Federal, State or regional water plans. Such plans may include but are not limited to:

- 1) Water conservation plans*
- 2) Drought contingency plans*
- 3) Plans that meet the criteria identified in the U.S Environmental Protection Agency's (EPA) Nonpoint Source Management Program*
- 4) Plans that meet the EPA's criteria for Watershed-Based Plans*
- 5) Or other relevant plans or planning efforts*

Task B—Further Development of an Existing Watershed Group: *Existing watershed groups should demonstrate how existing plans developed at the Federal, State or regional levels are currently being used within the watershed group, and how existing plans will be used to conduct new activities as part of this proposal. Please reference any relevant plans that you will make contributions toward, but do not include plans as part of this application.*

The Bureau of Reclamation's Colorado River Basin Water Supply and Demand Study is the closest to a regional watershed plan available in this area, though it only addresses water supply issues within the whole basin. Section 319 of the Clean Water Act addresses water quality at the watershed level and the USEPA has developed web resources to help groups develop watershed plans. Though there are no regional plans in place for the lower Colorado River, both the Supply and Demand study and Section 319 non-point source watershed plan development information will form a foundation of CCRSCo's watershed management plan. One member of CCRSCo, Lake Havasu City, has been able to indirectly take advantage of the U.S Environmental Protection Agency's (EPA) Nonpoint Source Management Program by receiving grants from the Arizona Department of Environmental Quality's non-point source water quality improvement program (WQIP) to address elevated nitrate in groundwater source from septic tanks. Those tanks were decommissioned and residences were hooked up to a centralized sewer collection system within the city. The WQIP is funded through the EPA's Nonpoint Source Management Program. Most members of CCRSCo who also have Colorado River water contracts have their own water conservation plans that are required by the Bureau of Reclamation. Drought preparedness or contingency plans are usually buried within the water conservation plans and they all are expressed to fit the circumstances of the water user. Additionally, all Colorado River water providers in CCRSCo have been working cooperatively with their state water resources departments and Reclamation concerning water quantity on the river by being involved with resource planning and promoting water conservation efforts at all levels.

CCRSCo's work to develop a HUC scale watershed management plan will not only make sure it does not conflict with member water conservation/drought contingency plans, but will be compatible with agency objectives in the watershed. That is the importance of the proposed collaborations so that the watershed is managed in a consistent and positive manner.

Evaluation Criterion D: Building Resilience to Drought (10 points)

Up to 10 points may be awarded based on the extent to which the watershed group's activities will build resilience to drought.

Task A—Establishing a Watershed Group and Task B—Further Development of an Existing Watershed Group.

1) Please describe the extent to which the watershed is suffering or has recently suffered from drought, including: (1) the time period and longevity of the conditions, and (2) any specific impacts (economic losses, public health concerns, impacts to ecological resiliency, etc.). Please provide support for this response (e.g., Drought Monitor, <http://droughtmonitor.unl.edu>, or references to reports regarding drought impacts).

2) Please describe how the watershed group's activities will help build resilience to drought. This could include analysis of potential drought impacts in developing the watershed management plan, or consideration of projects to build drought resilience in the development of project concepts.

1) The Colorado River Basin has undergone a 16 year drought period (1999-present - termed a mega-drought by some academic standards) where for most years, the amount of Rocky Mountain snow pack and resulting water supply runoff has been below normal, resulting in drastic reservoir elevation reductions in Lakes Powell and Mead. The drought has spurred a flurry of activity at the federal, state and local levels. The major action at the federal level is the 2007 Record of Decision to manage Colorado River from the perspective of balancing the storage of those two reservoirs and developing criteria that form the basis for the Secretary of the Interior to declare water shortages to the Lower Colorado River Basin states (particularly Arizona and Nevada) and possibly Mexico. Shortage declarations would predominantly impact Arizona 4th priority contracts (CCRSCo members CAP, Lake Havasu City and Bullhead City) and also SNWA in Nevada. Water shortages would have direct economic impacts to the above CCRSCo members, particularly agricultural interests in the CAP delivery system. Shortages also have the potential to severely disrupt normal municipal water use that could result in lost business and property devaluations. In addition, the Bureau of Reclamation and agencies representing the seven Colorado River Basin States conducted a Colorado River Basin Water Supply and Demand Study. This study determined that through a combination of climate change-induced, increasing drought frequency and population gains, by 2060 annual median demand for water will outstrip median supply by 3.2 MAF (<http://www.usbr.gov/lc/region/programs/crbstudy/finalreport/index.html>).

Similarly, most of California has been in drought the last 2-3 years, which continues despite a decent 2015-2016 El Niño winter for northern California (Figure 5) and continued measures taken at the state level to reduce water consumption at all levels. This has also produced more pressure for California to use all of its Colorado River entitlement, including some of its surplus water initially left in Lake Mead to help bolster that reservoir's surface elevations.

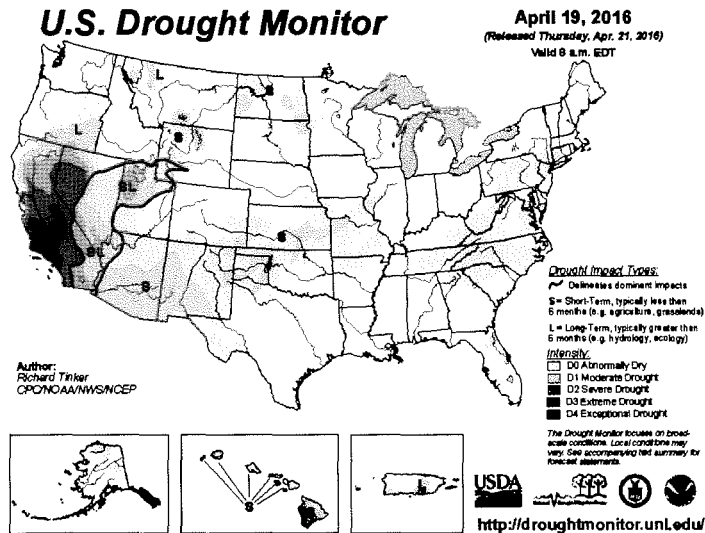


Figure 5: April 19, 2016 drought monitor map showing the drought on California and the long term drought within the Colorado River Basin.

2) CCRSCo's "middle name" is Sustainability and although its mission concerns water quality, sustainability of water supply is just as paramount. Many members of CCRSCo are water providers with contractual water allocations of Colorado River water (MWD, SNWA, CAP, Chemehuevi Tribe, Lake Havasu City, Needles, Bullhead City, Parker, Quartzite, and Blythe). In addition the first three members just mentioned have collaborated with the Bureau of Reclamation Lower Colorado River Regional Basin office to offer funding for extraordinary conservation projects that will result in retaining water in Lake Mead.

Any watershed management plan developed through CCRSCo will include components addressing drought impacts. For example, the expansive growth of the cyanobacteria, *Microcystis*, is thought to be influenced by a number of factors such as, the favorable selective feeding habit of quagga mussels, elevated winter air temperatures, and phosphate cycling in the reservoir system, though none of these have been confirmed in the Lower Colorado River Basin. Projects/studies working to better understand *Microcystis* outbreaks are needed to mitigate conditions leading to them. This includes the influence of higher air temperatures and short, intense runoff events into the river/reservoir system which are climate change related.

Required Permits and Approvals

No permits are needed to plan and carry out membership expansion and watershed plan development.

Funding Plan and Letter of Commitment

Partner Funding Information:

(1) The CCRSCo will not have any partners on this project.

(2) No other federal grant requests will be submitted for this project nor are there any existing or pending federal grants associated with this project.

(3) There are no other funding requests associated with this proposed project.

Funding Sources	Funding Amount
Non-Federal Entities	\$0.00
<i>Non-Federal Subtotal:</i>	\$0.00
Other Federal Entities	
1. There are no other federal agencies.	\$0.00
<i>Requested Reclamation Funding:</i>	\$80,700.00
<i>Total Projected Funding:</i>	\$80,700.00

Official Resolution

The CCRSCo Board has approved an Official Resolution (Resolution Number 16-001) in support of the watershed planning effort and membership expansion (attached).

Budget Proposal**a) Budget Format**

BUDGET ITEM DESCRIPTION	COMPUTATION		RECIPIENT FUNDING	RECLAMATION FUNDING	TOTAL COST
	\$/Unit and Unit	Quantity			
SALARIES AND WAGES	n/a				
FRINGE BENEFITS	n/a				
TRAVEL	\$200/day	48 days	\$0.00	\$ 9,600.00	\$ 9,600.00
EQUIPMENT	n/a				
SUPPLIES/MATERIALS	n/a		\$0.00	\$ 5,000.00	\$ 5,000.00
CONTRACTUAL	n/a				
1) Hire a part-time Watershed Coordinator	\$30/hr	2175 hrs	\$0.00	\$ 65,250.00	\$ 65,250.00
ENVIRONMENTAL AND REGULATORY COMPLIANCE ¹	n/a				
OTHER	n/a				
Shipping / Taxes			\$0.00	\$ 850.00	\$ 850.00
TOTAL DIRECT COSTS			\$0.00	\$ 80,700.00	\$ 80,700.00
INDIRECT COSTS - __%	n/a				
TOTAL PROJECT COSTS			\$0.00	\$ 80,700.00	\$ 80,700.00

Note: CCRSCO will supply in-kind office space, supplies and equipment needed for the watershed coordinator.

b) Budget Narrative

CCRSCO is asking for funding to hire and support a part time watershed coordinator over the interval of the grant period (2 years), for the coordinator's travel expenses (lodging, meals, and mileage), for materials and supplies (printed reports, documents, maps, and pamphlets; necessary software, etc.), and shipping/taxes, totaling \$80,700.00. The salary is commensurate with current and recent job postings for watershed coordinators elsewhere in the United States (examples attached). The amount of hours listed in the budget format above assumes that the position will start in the middle of October 2016 and end in July 2018 with two weeks per year (holiday season) off unpaid. The work schedule is assumed to be 5 hours per day, 5 days per week, yet with travel, any combination of 25 hours per week will be acceptable.

Travel cost unit rate of \$200/day was determined (rounded) using the October 2015 State of Arizona Accounting Manual in which mileage is \$0.445/mile (assuming an average round trip distance in a private vehicle of 150 miles), lodging averages \$89/night in the region, and \$41/day for meals (excerpts of manual attached).

Supplies and materials include costs for developing reports, outreach/recruitment pamphlets, watershed plan, including maps. Software to develop the reports should be provided by

CCRSCo, yet ArcGIS would be needed for generating maps. A single user license for ArcGIS for Desktop Basic from ESRI is \$1,500.

CCRSCo will provide office space, office supplies and equipment (computer, printer, etc.) for the watershed coordinator as in-kind help to the project.

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 01/31/2019

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. WaterSMART: Cooperative Watershed Management Program	15:554	\$ <input type="text"/>	\$ <input type="text"/>	\$ 80,700.00	\$ 0.00	\$ 80,700.00
2. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
5. Totals		\$ <input type="text"/>	\$ <input type="text"/>	\$ 80,700.00	\$ <input type="text"/>	\$ 80,700.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	WaterSMART: Cooperative Watershed Management Program				
a. Personnel	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
b. Fringe Benefits	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Travel	<input type="text" value="9,600.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="9,600.00"/>
d. Equipment	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
e. Supplies	<input type="text" value="5,000.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="5,000.00"/>
f. Contractual	<input type="text" value="65,250.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="65,250.00"/>
g. Construction	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
h. Other	<input type="text" value="850.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="850.00"/>
i. Total Direct Charges (sum of 6a-6h)	<input type="text" value="80,700.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text" value="80,700.00"/>
j. Indirect Charges	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
k. TOTALS (sum of 6i and 6j)	\$ <input type="text" value="80,700.00"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text" value="80,700.00"/>
7. Program Income	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>

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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS	
8. WaterSMART:Cooperative Watershed Management Program	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	
9.					
10.					
11.					
12. TOTAL (sum of lines 8-11)	\$	\$	\$	\$	
SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 42,000.00	\$ 10,900.00	\$ 10,000.00	\$ 9,400.00	\$ 11,700.00
14. Non-Federal	\$				
15. TOTAL (sum of lines 13 and 14)	\$ 42,000.00	\$ 10,900.00	\$ 10,000.00	\$ 9,400.00	\$ 11,700.00
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)				
	(b)First	(c) Second	(d) Third	(e) Fourth	
16. WaterSMART:Cooperative Watershed Management Program	\$ 38,700.00	\$ 0.00	\$ 0.00	\$ 0.00	
17.					
18.					
19.					
20. TOTAL (sum of lines 16 - 19)	\$ 38,700.00	\$	\$	\$	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges:		22. Indirect Charges:			
23. Remarks:					

RESOLUTION NO. 16-001

A Resolution of the Board of Directors of the Clean Colorado River Sustainability Coalition (CCRSCo) Authorizing Submission of an Application for a WaterSMART Grant for the Purpose of Expanding the Membership of the Coalition and Development of Project Concepts

Whereas, the Bureau of Reclamation is offering a grant opportunity (No. R16-FOA-DO-008) under the WaterSMART: Cooperative Watershed Management Program; and

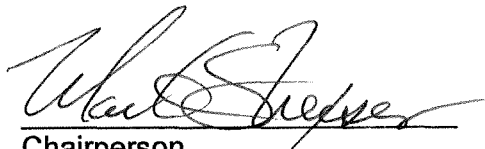
Whereas, the Board is interested in expanding its membership diversity within the USEPA Havasu-Mohave Lakes and Imperial hydrologic watershed units that are occupied by the current membership; and

Whereas, more diverse member interests coupled with the desire to develop focused water quality project concepts will lead to a watershed restoration plan to improve watershed conditions;


Now, therefore, be it resolved that the Board of Directors of CCRSCo does hereby authorize application submittal be made to the Bureau of Reclamation for a WaterSMART Cooperative Watershed Management Program Grant.

Be it further resolved by the Board of Directors of CCRSCo, that the Board Chairman, or designee, is authorized to execute the application and any subsequent contract/grant documents for the receipt and use of funds for the coalition expansion/project concept development project, and authorize the Board Chairman and the Coalition's Technical Committee to take all actions necessary to implement and complete the activities submitted in the application, subject to any necessary review and approval by CCRSCo.

Passed and adopted this 30th day of March, 2016.


Chairperson

Attest:


Secretary



THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Office of the General Manager

April 27, 2016

Mr. Darren Olson
Bureau of Reclamation
Mail Code: 84-27852
Denver Federal Center
Building 56, Room 1000
6th Avenue and Kipling Street
Denver, Colorado 80225

Reply to: 700 Moreno Avenue
La Verne, CA 91750

Dear Mr. Olson:

Letter of Support for WaterSMART Cooperative Watershed Management Program Grants for Fiscal Year 2016 – Proposal No. R16-FOA-DO-008 Clean Colorado River Sustainability Coalition Expansion

Metropolitan Water District of Southern California (Metropolitan) is the primary drinking water wholesaler to nearly 20 million people in the coastal southern California region. Metropolitan supplies water from the Colorado River through our Colorado River Aqueduct, and from northern California, through the California State Water Project. We are committed to providing high quality drinking water to our customers.

Metropolitan is also a Board member of Clean Colorado River Sustainability Coalition (CCRSCo) and we share a vested interest with CCRSCo in protecting the water quality of the Colorado River. CCRSCo's proposal for the WaterSMART Cooperative Watershed Management Program seeks to expand CCRSCo's membership and develop partnerships to facilitate watershed planning along the lower Colorado River. CCRSCo's outreach efforts would focus on identifying water quality project concepts ultimately leading to the development of a watershed management plan. Protecting the river's water quality is of utmost importance to Metropolitan and CCRSCo's efforts to engage key stakeholders on these efforts will aid in the long-term protection of this critical resource.

We appreciate your consideration of CCRSCo's grant proposal to expand its membership and to enhance watershed planning efforts for the lower Colorado River. If you have any questions,

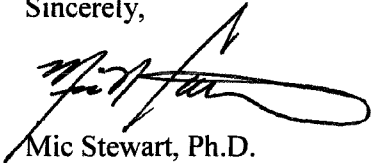
Mr. Darren Olson

Page 2

April 27, 2016

please contact Mickey Chaudhuri via e-mail at mchaudhuri@mwdh2o.com or at (909) 392-5547,
or Maria Lopez via e-mail at mtlopez@mwdh2o.com or at (909) 392-5447.

Sincerely,



Mic Stewart, Ph.D.

Water Quality Section Manager

MTL:ag

H:\letters\mtl cersco WaterSMART Letter of Support.docx

cc: Mayor Mark Nexsen (Lake Havasu City, AZ)
D. Wilson (Lake Havasu City, AZ)

Colorado River Sewage System Joint Venture

12501 West End Agency Road
Parker, Arizona 85344

Office (928) 669-9821
Fax (928) 669-6534

April 29, 2016


Bureau of Reclamation
Attn: Mr. Darren Olson
Mail Code: 84-27852
Denver Federal Center
Bldg 56, Room 1000
6th Avenue and Kipling Street
Denver, Colorado 80225

RE: Letter of Support for grant opportunity No. R16-FOA-DO-008

Dear Mr. Olson:

This purpose of this letter is to give the Colorado River Sewage System Joint Venture support as a Clean Colorado River Sustainability Coalition (CCRSCo) Board member for the implementation of the coalition's member expansion and water quality project concept development if the above grant opportunity is awarded. Sustainable good water quality of the lower Colorado River is the coalition's prime focus and expanding the diverse interests that lie along the river and identifying water quality project concepts leading to a watershed wide restoration plan will strengthen CCRSCo's ability to accomplish that goal.

Sincerely,



Andrew M. Jones
General Manager
Colorado River Sewage System Joint Venture

**OFFICE OF THE MAYOR
CITY OF BULLHEAD CITY**
2355 Trane Road
Bullhead City, Arizona 86442-5966
(928) 763-0122 tbrady@bullheadcity.com

April 20, 2016

Bureau of Reclamation
Attn: Mr. Darren Olson
Mail Code: 84-27852
Denver Federal Center
Bldg 56, Room 1000
6th Avenue and Kipling Street
Denver, Colorado 80225

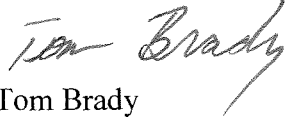
RE: Letter of Support for grant opportunity No. R16-FOA-DO-008

Dear Mr. Olson:

This purpose of this letter is to give the City of Bullhead City's support as a Clean Colorado River Sustainability Coalition (CCRSCo) Board member for the implementation of the coalition's member expansion and water quality project concept development if the above grant opportunity is awarded. Sustainable good water quality of the lower Colorado River is the coalition's prime focus and expanding the diverse interests that lie along the river and identifying water quality project concepts leading to a watershed wide restoration plan will strengthen CCRSCo's ability to accomplish that goal.

Sincerely,

CITY OF BULLHEAD CITY


Tom Brady
Mayor



BUCKSKIN SANITARY DISTRICT

P O Box 5398
Parker, AZ 85344

April 29, 2016

Bureau of Reclamation
Attn: Mr. Darren Olson
Mail Code: 84-27852
Denver Federal Center
Bldg 56, Room 1000
6th Avenue and Kipling Street
Denver, Colorado 80225

RE: Letter of Support for grant opportunity No. R16-FOA-D0-008

Dear Mr. Olson:

This purpose of this letter is to give Buckskin Sanitary District's support as a Clean Colorado River Sustainability Coalition (CCRSCo) Board member for the implementation of the coalition's member expansion and water quality project concept development if the above grant opportunity is awarded. Sustainable good water quality of the lower Colorado River is the coalition's prime focus and expanding the diverse interests that lie along the river and identifying water quality project concepts leading to a watershed wide restoration plan will strengthen CCRSCo's ability to accomplish that goal.

Sincerely,

Wayne Posey
District Manager

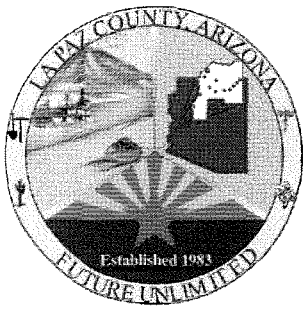
Cc File

Phone:(928) 667-7197 * Fax: (928) 667-1697 *

Web: www.bsdsewer.org

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La Paz County Board of Supervisors

1108 Joshua Avenue

Parker, Arizona 85344

(928) 669-6115 TDD (928) 669-8400 Fax (928) 669-9709

www.co.la-paz.az.us

D. L. Wilson	- District 1	Daniel G. Field	- County Administrator/ Clerk of the Board
King E. Clapperton	- District 2		
Holly Irwin	- District 3		

April 18, 2016

Bureau of Reclamation
Attn: Mr. Darren Olson
Mail Code: 84-27852
Denver Federal Center
Bldg 56, Room 1000
6th Avenue and Kipling Street
Denver, Colorado 80225

RE: Letter of Support for grant opportunity No. R16-FOA-DO-008

Dear Mr. Olson:

This purpose of this letter is to express La Paz County's support, as a board member to the Clean Colorado River Sustainability Coalition (CCRSCo) Board, for the implementation of the coalition's member expansion and water quality project concept development if the above grant opportunity is awarded.

Sustainable good water quality of the lower Colorado River is the coalition's prime focus, and identifying water quality project concepts leading to a watershed wide restoration plan is a key goal. Expanding our membership to include the diverse interests that lie along the river will strengthen CCRSCo's ability to accomplish that goal.

Sincerely,

Holly Irwin
Chairman
District #3 Supervisor

D. L. Wilson
Vice Chairman
District #1 Supervisor

King Clapperton
Member
District #2 Supervisor



Office of Mayor Mark S. Nexsen
Phone: (928) 453-4152
Email: nexsenm@lhcaz.gov

April 20, 2016

Bureau of Reclamation
Attn: Mr. Darren Olson
Mail Code: 84-27852
Denver Federal Center
6th Avenue and Kipling Street
Denver, Colorado 80225

Re: Letter of Support for Grant Opportunity No. R16-FOA-DO008

Dear Mr. Olson:

This purpose of this letter is to express Lake Havasu City's support as a Clean Colorado River Sustainability Coalition (CCRSCo) Board member for the implementation of the coalition's member expansion and water quality project concept development if the above grant opportunity is awarded. Sustainable good water quality of the lower Colorado River is the coalition's prime focus and identifying water quality project concepts leading to a watershed wide restoration plan is a key goal. Expanding our membership to include the diverse interests that lie along the river will strengthen CCRSCo's ability to accomplish that goal.

If you have any questions, please do not hesitate to contact me at 928-453-4152 or nexsenm@lhcaz.gov

Sincerely,

Mark S. Nexsen
Mayor, Lake Havasu City
Chairman, Clean Colorado River Sustainability Coalition

JOB ANNOUNCEMENT

WATERSHED COORDINATOR

KAMAS VALLEY CONSERVATION DISTRICT

Full time technical/Watershed Coordinator position. This is an "Exempt" position for the Upper Weber River watershed to provide technical and administrative support in locally led watershed planning efforts. Includes: coordination with local water quality committees, identifying and developing proposals for potential funding sources, , developing plans to address non-point sources of water pollution, , soliciting project support from landowners, partner agencies and local officials, implementing watershed improvement projects, fulfilling the goals and objectives identified in Total Maximum Daily Loads (TMDLs), providing technical assistance to local watershed committees and conservation districts, and assisting with water quality monitoring activities.

Works with and under the direction of the Kamas Valley Conservation District, Summit Conservation District and the Utah Division of Water Quality. Office will be located in Coalville, Utah.

POSITION REQUIREMENTS

Technical working knowledge of the following:

- Proficient in the use of computers for report preparation with Microsoft applications such as, Word, Excel and PowerPoint.
- Effective oral and written communication to engage project cooperators, promote conservation programs and services, disseminate information, and educate stakeholders through personal contacts and public meetings.
- Organizational, time, and financial management skills.
- Restoration and protection of water quality and related natural resources.
- Evaluation of impacts from nonpoint sources of pollution.
- Leadership and negotiation ability.
- Knowledge of public due process related to local governmental plans and decisions.
- Knowledge of water quality regulations, monitoring and natural resource management.
- Knowledge of conservation practices and planning procedures including Coordinated Resource Management and Watershed Plans.

In addition, the successful applicant must:

Possess a bachelor's degree or equivalent related experience in hydrology, watershed management, watershed planning, soil science, natural resources, or a related field.

Have a high degree of self-motivation and work with minimal supervision. Must work well with technical and professional staff, elected officials, and local stakeholders.

Possess a valid Utah vehicle driver's license. This position requires the use of a personal vehicle on both public and private roads during daylight hours and after dark. Mileage will be compensated for business use of personal vehicle.

Offer services to individuals and groups without regard to race, color, religion, sex, national origin, or other such designations protected by law.

MAJOR DUTIES

1. Plan and implement projects that support applicable TMDLs and watershed plans.
 - a. Prepare grant applications and work plans to support TMDL implementation projects.
 - b. Assemble technical expertise and coordinate resources to prepare work plans and projects.
 - c. Develop sampling and analysis plans and perform monitoring to assess effectiveness of watershed projects and water quality improvements.
 - d. Work with local landowners, stakeholders and conservation district boards to promote and solicit implementation of watershed improvement projects.
2. Coordinate and assist locally led watershed committees in developing TMDLs, watershed management plans and Coordinated Resource Management Plans.
3. Assist local watershed groups, Conservation Districts and individuals in developing funding proposals to implement BMPs and goals identified in TMDLs.
 - a. Develop funding proposals in conjunction with local watershed committees and conservation districts.
 - b. Coordinate and record in-kind matching funds from project cooperators and partner agencies.
4. Complete timely tracking and reporting of implementation activities to meet state and federal requirements.
5. Develop and organize public outreach and educational water quality programs throughout the watershed.
 - a. Present at local meetings, conferences and workshops.
 - b. Develop educational materials for local watershed committees, conservation districts and the public.

WORK PERIOD/TRAVEL

Work and/or office hours are generally from 8 a.m. to 5 p.m. Monday through Friday. Regular travel throughout the district and watershed is required. Evening and weekend meetings and occasional overnight trips are required to meet with watershed committees, conservation districts and attend various state and federal agency meetings.

COMPENSATION

Starting salary range \$34,000 to \$38,000 (depending on experience) plus benefits.

APPLICATION

Please respond by submitting a cover letter, resume, and three references (including prior employers) to UACD, Attention: Daniel Gunnell, 302 E. 1860 S. Provo, UT 84606, (801) 377-5580 x 120 or daniel.gunnell@ut.nacdnet.net.

The district will accept applications until the position is filled.

Assistant Watershed Coordinator April 2016

Big Thompson Watershed Coalition - Loveland, CO

\$35,000 - \$40,000 a year - Full-time, Contract

Position Title: Assistant Watershed Coordinator

Employment Status: Full-time, Salaried

Reports To: Big Thompson Watershed Coalition (BTWC) Watershed Coordinator

Office Location: 2525 West 1st. St, Loveland CO 80537

Salary Range: \$35,000-\$40,000 annually

General Description

The successful applicant will be a motivated, independent, enthusiastic problem-solver who is capable and willing to serve the larger purpose of restoring an environment and community that survived a recent disaster. The Assistant Watershed Coordinator will assist the Watershed Coordinator in executing day-to-day management and administrative tasks. The Assistant Coordinator will provide support for Big Thompson Watershed Coalition meetings, grant submittals and tracking, and restoration project implementation. This will require strong communication, interpersonal, and project management skills. Technical expertise or knowledge in river restoration and watershed science, and GIS is highly desired. In this position, in addition to landowners, other stakeholders and the BTWC Board of Directors, the successful applicant will collaborate with other Colorado Watershed Coordinators and Assistant Watershed Coordinators, as well as local, county, state, and federal agencies involved with watershed management. The Assistant Coordinator will also be working with contractors, engineers, and a wide variety of natural resource professionals. Training, networking, and career development opportunities will be offered in the performance of these duties.

Supervision Received and Exercised

The Assistant Coordinator shall work under the direction of the Watershed Coordinator in carrying out the activities and functions of BTWC.

Examples of Duties

Primary duties include, but are not limited to, the following:

- Provide assistance to the Coordinator in restoration planning and implementation tasks including:
- Using the Watershed Master Plan to evaluate priority projects in an efficient and compliant manner ensuring collaboration with all stakeholders.
- Research potential funding sources and contribute to grant applications to help develop a strategy to fund project implementation and long term maintenance and monitoring.
- Track restoration project status during planning, implementation and monitoring phases.

- Complete education and outreach tasks including developing quarterly newsletters, developing outreach materials communicating BTWC programs and projects, maintaining a landowner database, organizing outreach and volunteer events, developing a BTWC outreach strategy, and updating the website and Facebook pages.
- Assist Coordinator in providing landowner assistance to educate and inform landowners on appropriate stream stewardship techniques.
- Assist Coordinator in preparing for and conducting BTWC Board meetings and ensuring compliance with the CDBG-DR Capacity Grant requirements.
- Oversee consultants conducting restoration planning and implementation projects, as appropriate.



State of Arizona Accounting Manual

Topic 50 Travel Issued 10/01/15
Section 95 Maximum Mileage, Lodging, Meal, Parking and Page 1 of 26
Incidental Expense Reimbursement Rates

INTRODUCTION

This section SAAM establishes policies and procedures for travel-related matters that are infrequently encountered. All rates cited are for reimbursement of actual costs or mileage incurred while traveling on State business.

Mileage rates and lodging rates, under A.R.S. §§ 38-623 and 38-624, respectively, are established by the ADOA, reviewed by the JLBC, and published in SAAM by the GAO.

Effective dates of rates are shown in parentheses following section titles.

1. PERSONAL VEHICLE MILEAGE REIMBURSEMENT RATE. (11/15/06)

Forty-four and one-half cents (**44.5¢**) per mile.

2. PRIVATELY-OWNED AIRCRAFT MILEAGE REIMBURSEMENT RATE. (11/15/06)

Ninety-nine and one-half cents (**99.5¢**) per mile.

Rate is based upon the shortest air routes from origin to destination. Landing and parking fees are reimbursable except those incurred at the location the aircraft is normally based.

Use of a privately-owned aircraft for State business requires the prior approval of the GAO.

3. AIRPORT PARKING. (10/01/13)

General Airport Parking Guidelines

While it is impractical to list parking rates for every airport in the country or even in the State, there are some general guidelines that all State travelers are to follow when parking at airports.

- Economy, long-term, off-premises parking serviced by shuttle is to be chosen when available.
- The State will not reimburse upcharges for covered or inside parking.

State of Arizona Accounting Manual

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 Section 95 Maximum Mileage, Lodging, Meal, Parking and
 Incidental Expense Reimbursement Rates

Issued 10/01/15
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7. LODGING AND FULL-DAY MEAL AND INCIDENTAL EXPENSE REIMBURSEMENT RATES FOR DESTINATIONS LOCATED IN THE CONTINENTAL UNITED STATES. (10/01/15)

For out-of-state locations treated as in-state, use the default rates of \$89 as the lodging reimbursement limit and \$41 as a daily meal reimbursement limitation.

State	Location	County	Begin	End	Lodging	M&IE
If a city is listed, then the city's rate applies. If a city is not listed is located in a county whose rate is listed, then the county's rate applies. Otherwise, within the Continental United States, the rates to the right apply.					\$89	\$41
Arizona						
AZ	Grand Canyon / Flagstaff	Coconino / Yavapai less the city of Sedona	Oct 1	Oct 31	\$124	\$54
AZ	Grand Canyon / Flagstaff	Coconino / Yavapai less the city of Sedona)	Nov 1	Feb 29	\$89	\$54
AZ	Grand Canyon / Flagstaff	Coconino / Yavapai less the city of Sedona)	Mar 1	Sep 30	\$124	\$54
AZ	Kayenta	Navajo			\$112	\$49
AZ	Phoenix / Scottsdale	Maricopa	Oct 1	Dec 31	\$113	\$49
AZ	Phoenix / Scottsdale	Maricopa	Jan 1	Mar 31	\$161	\$49
AZ	Phoenix / Scottsdale	Maricopa	Apr 1	May 31	\$120	\$49
AZ	Phoenix / Scottsdale	Maricopa	Jun 1	Aug 31	\$89	\$49
AZ	Phoenix / Scottsdale	Maricopa	Sep 1	Sep 30	\$113	\$49
AZ	Sedona	City Limits of Sedona	Oct 1	Feb 29	\$134	\$64
AZ	Sedona	City Limits of Sedona	Mar 1	Aug 31	\$141	\$64
AZ	Sedona	City Limits of Sedona	Sep 1	Sep 30	\$134	\$64
AZ	Tucson	Pima	Oct 1	Dec 31	\$89	\$49
AZ	Tucson	Pima	Jan 1	Feb 29	\$106	\$49
AZ	Tucson	Pima	Mar 1	Sep 30	\$ 89	\$49
Alabama						
AL	Birmingham	Jefferson / Shelby			\$94	\$49
AL	Gulf Shores	Baldwin	Oct 1	Feb 29	\$101	\$54
AL	Gulf Shores	Baldwin	Mar 1	Jul 31	\$130	\$54
AL	Gulf Shores	Baldwin	Aug 1	Sep 30	\$101	\$54
AL	Mobile	Mobile	Oct 1	Dec 31	\$89	\$49
AL	Mobile	Mobile	Jan 1	Feb 29	\$99	\$49
AL	Mobile	Mobile	Mar 1	Sep 30	\$89	\$49
Arkansas						
AR	Hot Springs	Garland			\$101	\$49
AR	Little Rock	Pulaski			\$91	\$49
California						