

# Anza Borrego Desert Integrated Regional Water Management Planning Grant Proposal

*Submitted by the Borrego Water District  
On behalf of the Regional Water Management Group*

## Grant Application Checklist

| APPLICANT INFORMATION  |  |  |
|------------------------|--|--|
| APPLICANT INFORMATION  |  |  |
| ✓                      | <u>Organization Name</u>                           | Borrego Water District   |
| ✓                      | <u>Tax ID</u>                                      | 330713922  |
| ✓                      | <u>Proposal Name</u>                               | Anza Borrego Desert Planning Grant Proposal  |
| ✓                      | <u>Proposal Objective</u><br>(250 character limit) | The main objectives of the Proposal are to prepare a useful and meaningful IRWM Plan for the Region, and complete planning studies that will address the Region’s key issues and support development of a standards-compliant IRWM Plan. |
| BUDGET                 |  |  |
| ✓                      | <u>Other Contribution</u>                          | Zero   |
| ✓                      | <u>Funding Match</u>                               | \$414,283  |
| ✓                      | <u>Federal Contribution</u>                        | Zero   |
| ✓                      | <u>In-kind Contribution</u>                        | \$51,200   |
| ✓                      | <u>Amount Requested</u>                            | \$634,421  |
| ✓                      | <u>Total Project Cost</u>                          | \$1,099,904  |
| GEOGRAPHIC INFORMATION |  |  |
| ✓                      | <u>Latitude</u>                                    | DD 33 MM 4 SS 27   |
| ✓                      | <u>Longitude</u>                                   | DD -116 MM 23 SS 49  |
| ✓                      | <u>Longitude/Latitude Clarification</u>            | N/A  |
| ✓                      | <u>Location</u>                                    | Anza Borrego Desert IRWM Region  |
| ✓                      | <u>County</u>                                      | Riverside County<br>San Diego County   |
| ✓                      | <u>Groundwater Basin</u>                           | Borrego Valley<br>Canebrake Valley<br>Coachella Valley<br>Collins Valley<br>Coyote Wells Valley<br>Jacumba Valley<br>Mason Valley<br>Ocotillo-Clark Valley   |

**Anza Borrego Desert Planning Grant Proposal  
Grant Application Checklist**

|                                |                                    |  |
|--------------------------------|------------------------------------|--|
|                                |                                    | Ranchita Town Area<br>San Felipe Valley<br>Vallecito-Carrizo<br>West Salton Sea<br>Yaqui Well  |
| ✓                              | <u>Hydrologic Region</u>           | Colorado River   |
| ✓                              | Watershed                          | Borrego Sink<br>Carrizo<br>Collins<br>Indio<br>Jacumba Valley<br>McCain<br>Terwilliger<br>Vallecito  |
| <b>LEGISLATIVE INFORMATION</b> |                                    |  |
| ✓                              | <u>State Assembly District</u>     | 64, 77   |
| ✓                              | <u>State Senate District</u>       | 36, 37, 40   |
| ✓                              | <u>U.S. Congressional District</u> | 45, 51, 52   |
| <b>PROJECT INFORMATION</b>     |                                    |  |
| ✓                              | <u>Project Benefit Type</u>        | <p>1.<br/>Benefit Level: Primary<br/>Benefit Type: Research/Planning<br/>Benefit: Management Plans- IRWMP<br/>Measurement: 0<br/>Description: Develop an IRWM Plan for the ABD IRWM Region.</p> <p>2.<br/>Benefit Level: Secondary<br/>Benefit Type: Research/Planning<br/>Benefit: Other- Groundwater plans developed or updated<br/>Measurement: 0<br/>Description: Develop Water Resources Plans that address regional groundwater management and sustainable use.</p> <p>3.<br/>Benefit Level: Secondary<br/>Benefit Type: Research/Planning<br/>Benefit: Other- Water Quality in general<br/>Measurement: 0<br/>Description: Develop a Water Resources Plan that addresses water quality impacts as local groundwater basins are dewatered.</p> <p>4.<br/>Benefit Level: Secondary<br/>Benefit Type: Research/Planning<br/>Benefit: Climate Change Impacts<br/>Measurement: 0</p> |

**Anza Borrego Desert Planning Grant Proposal  
Grant Application Checklist**

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|  |  | Description: Develop a Water Resources Plan that addresses potential climate change impacts as they relate to water resources. |
|--|--|--|

**APPLICANT INFORMATION AND QUESTIONS TAB**

|   |                                 |  |
|---|---------------------------------|--|
| ✓ | <u>Q1. Proposal Description</u> | <p>The Anza Borrego Desert Planning Grant Proposal (Proposal) is a regional proposal that addresses one (1) IRWM Region, the Anza-Borrego Desert IRWM Region (Region). The Region is a very unique IRWM Region in that it faces pressing issues related to the economic viability of the Region’s sole water supply source (groundwater), and also contains a vast amount of important statewide resources (the Anza-Borrego Desert State Park). Further, because almost the entire Region is classified as a disadvantaged community (DAC), securing an economically viable water supply source for the Region is imperative. Due to the Region’s unique issues, the primary purpose of the Proposal is to develop an IRWM Plan that is compliant with DWR’s 2010 IRWM Program Guidelines (Guidelines), and is also useful as a regional planning document for stakeholders throughout the Region.</p> <p>For the IRWM Plan to be useful and accepted by Regional stakeholders, development of the IRWM Plan must include robust stakeholder involvement. Due to the importance of stakeholder outreach and involvement within the Region, Task 1 of the Proposal includes comprehensive stakeholder outreach that aims at establishing a common understanding and support for the IRWM Plan among key stakeholders. Task 1 also contains specific subtasks that relate to increasing and sustaining involvement among DACs and tribes within the Region to ensure that each of these groups is involved in development of the IRWM Plan.</p> <p>For the IRWM Plan to be useful, it also must address key Regional issues and provide integrated solutions that could be implemented to address such issues. As such, the Proposal also contains planning work that will be incorporated into the IRWM Plan, and will address the Region’s four main issues. These issues, as identified by stakeholders, include: water supply, water quality, flood control, and environmental integrity. Task 2 of the Proposal contains specific tasks that will address each of the four key issues from a planning perspective, and also includes work to incorporate the findings of each of these planning efforts into the IRWM Plan. Water supply (groundwater) is addressed in Task 2-1 and Task 2-2, and water quality (groundwater quality) as it relates to changes in groundwater levels is addressed in Task 2-3. Task 2-4 addresses climate change, which is a substantial component of the Guidelines. In addition, because climate change is anticipated to substantially impact flood control and environmental integrity, Task 2-4 also includes specific components that analyze how climate change will impact these key issues. Tasks 2-2 and 2-3 also include components that address environmental integrity as it relates to groundwater supply and groundwater quality.</p> <p>Task 3 of the Proposal synthesizes the work completed under Task 1 and Task 2, and includes additional work that will ensure production of an IRWM Plan that is useful for regional planning efforts, and is also compliant with the Guidelines.</p> |
|---|---------------------------------|--|

**Anza Borrego Desert Planning Grant Proposal  
Grant Application Checklist**

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|--------------------------------|---|---|
|                                |   | As the first complete IRWM Plan for the Region, the IRWM Plan that will be developed through implementation of this Proposal is important on many levels. Specifically, the IRWM Plan will provide a conduit through which to gather stakeholders and increase integration of water planning efforts throughout the Region, and will also provide a tool that stakeholders can use to move forward and address critical issues that are imperative to address at this time. |
| ✓                              | <u>Q2. Project Director</u>                           | Mr. Jerry Rolwing<br>General Manager<br>Borrego Water District<br>PO Box 1870<br>Borrego Springs, CA 92004<br>(760) 767-5806<br>jerry@borregowd.org   |
| ✓                              | <u>Q3. Project Management</u>                         | Mr. Jerry Rolwing<br>General Manager<br>Borrego Water District<br>PO Box 1870<br>Borrego Springs, CA 92004<br>(760) 767-5806<br>jerry@borregowd.org   |
| ✓                              | <u>Q4. Applicant Information</u>                      | Borrego Water District<br>PO Box 1870<br>Borrego Springs, CA 92004<br>(760) 767-5806  |
| ✓                              | <u>Q5. Additional Information</u>                     | DWR's Southern Region.  |
| ✓                              | <u>Q6. Additional Information</u>                     | The Anza Borrego Desert IRWM Region lies within the Colorado River Regional Water Quality Control Board (Region 7).   |
| ✓                              | <u>Q7. Eligibility</u>                                | No Other Contributions.   |
| ✓                              | <u>Q8. Eligibility</u>                                | There are no urban water suppliers that will receive funding from the proposed grant.   |
| ✓                              | <u>Q9. Eligibility</u>                                | This is not applicable as there are no urban water suppliers listed in Q8 above.  |
| ✓                              | <u>Q10. Eligibility</u>                               | Yes.  |
| <b>APPLICATION ATTACHMENTS</b> |   |   |
| ✓                              | <u>Attachment 1: Authorizing Documentation</u>        | Att1_PG2_BWD_AuthDoc_1of1.pdf   |
| ✓                              | <u>Attachment 2: Eligible Applicant Documentation</u> | Att2_PG2_BWD_EligDoc_1of1.pdf   |
| ✓                              | <u>Attachment 3: Work Plan</u>                        | Att3_PG2_BWD_WrkPlan_1of1.pdf   |
| ✓                              | <u>Attachment 4: Budget</u>                           | Att4_PG2_BWD_BUDGET_1of1.pdf  |

**Anza Borrego Desert Planning Grant Proposal  
Grant Application Checklist**

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|   |  |                              |
|---|--|------------------------------|
| ✓ | <u>Attachment 5: Schedule</u>  | Att5_PG2_BWD_SCHED_1of1.pdf  |
| ✓ | <u>Attachment 6: Program Preferences</u>                               | Att6_PG2_BWD_Pref_1of1.pdf   |
| ✓ | <u>Attachment 7: AB 1420 and Water Meter Implementation Compliance</u> | Att7_PG2_BWD_AB1420_1of1.pdf |

**Anza Borrego Desert Integrated Regional  
Water Management  
Planning Grant Proposal  
Authorizing Documentation**

Attachment 1 consists of the following items:

✓ **Memorandum of Understanding**

The 2009 Region Acceptance Process gave the Borrego Water District (BWD) overall responsibility for managing the Anza Borrego Desert IRWM program and submitting all applications to the State on behalf of the Regional Water Management Group parties.

✓ **Resolution**

Resolution 2012-01-02 authorizes BWD to submit this Anza Borrego Desert IRWM Planning Grant Proposal and execute an agreement with the State of California for IRWM planning activities.

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This Anza Borrego Desert Integrated Regional Water Management (IRWM) Planning Grant Proposal is being submitted by the Borrego Water District (BWD), which along with the Resource Conservation District of Greater San Diego County (RCD) and the County of San Diego (County) comprise the Regional Water Management Group (RWMG). The Anza Borrego Desert IRWM Region was formalized in the 2009 Region Acceptance Process (RAP). The RAP identifies BWD as the submitting entity that is responsible for carrying out IRWM activities because of its responsibility as the sole domestic water supplier and as the Groundwater Management Agency as defined under Assembly Bill 3030 (AB 3030). A copy of the RAP is provided as **Exhibit A**.

Resolution 2012-01-02 was adopted by the BWD Board of Directors on January 25, 2012 and authorizes BWD to submit this Anza Borrego Desert IRWM Planning Grant Proposal and execute an agreement with the State of California for IRWM planning activities. A copy of the resolution is provided as **Exhibit B**.



## **Borrego Valley Proposed Regional Acceptance**

### **1.0 Question 1: Information on the Submitting Entity.**

#### Submittal Responsibility Rational:

The Borrego Water District was selected to submit because of its responsibility as the sole domestic water supplier and as the AB 3030 Groundwater Management agency for the Borrego Valley.

#### Submitting Entity:

Borrego Water District  
806 Palm Canyon Drive  
Borrego Springs, CA 92004

#### Contact Person:

Richard Williamson, General Manager;  
760. 767.5806 o  
760.767.5994 f  
rich@borregowd.org

### **2.0 Question 2: Description of the Borrego Valley RWMG**

The following is a description of the composition of the Borrego Valley RWMG (BV RWMG), including their role in the RWMG process, regional water management responsibilities, and the level of IRWM participation.

It should be noted that while the various stakeholders in the Valley have not previously been organized as a RWMG, they have effectively functioned as such for some time. Each entity has provided input and suggestions to BWD initially as part of the development of the Groundwater Management Plan and at subsequent Standing and Ad Hoc Committees of BWD and at regular BWD board meetings.

The CoSD has also been involved in the water management process through frequent meetings and correspondence with BWD, annual groundwater level data collection and the development of land use restrictions that prevent an increase in the overdraft of the aquifer. Only the RCD is new to the water management of the Valley. The RCD brings important expertise to the RWMG in the areas of soil and water conservation and the removal of exotic flora species.

The formulation of the BV RWMG will allow for a long term working relationship that can lead to a successful solution to the areas water resource management.

### **2.1 Members of the Policy/Steering Committee**

#### **The Borrego Water District**

The Borrego Water District (BWD) was established in 1962 as a California water district. The District provides water, sewer, and flood control and gnat abatement for areas in the unincorporated community of Borrego Springs. Additionally, the District adopted a

## Exhibit A

groundwater management plan under Assembly Bill 3030 in 2002 and obtained the authority of a groundwater replenishment district. This designation allows the BWD to do planning for groundwater management and provides the authority, among others, to (a) buy and sell water, (b) exchange water (c) distribute water in exchange for ceasing or reducing groundwater extraction (d) recharge the basin and (e) build necessary works to achieve groundwater replenishment. This also provides the authority to levy a replenishment assessment, but only if replenishment water is available. The BWD is not a member of the San Diego County Water Authority (CWA), the regional member of the Metropolitan Water District of Southern California that imports supplemental water into San Diego County.

As indicated, the BWD is the sole domestic water supplier in the area and also the AB 3030 Groundwater Management agency for the Borrego Valley Groundwater Basin. The BWD has flood control management as well as water supply management. The BWD will be a member of the Steering Committee of the BVRWGM (the governance structure is described later). The district plans to adopt an IRWM plan.

### **The County of San Diego (CoSD)**

This CoSD is charged with providing flood protection throughout the unincorporated areas of the county. However, the BWD has responsibilities for flood control in its Improvement District #1.

The County has many authorities, including flood management for the Borrego Valley area. The County will be a member of the Steering Committee and will probably not adopt the IRWM plan.

The County of San Diego has regulatory control over land uses. Developers must obtain permits from the Department of Planning and Land Use (DPLU) to develop land in the Borrego Valley.

### **The Resource Conservation District of Greater San Diego County (RCD)**

The RCD is an independent, non-enterprise (local government) special district organized under Division 9 of the California Public Resources Code. It is authorized and directed to promote and provide conservation education, to conduct research, and to advise and assist other public agencies and private individuals in the areas of land-use planning, soil and water conservation, wildlife habitat enhancement and restoration, control of exotic plant species, and watershed restoration. The RCD will also be a member of the Steering Committee. It will not adopt an IRWM plan.

## **2.2 Stakeholders and Subcommittees**

The following stakeholders are included in the RWMG in the Technical Committee. (Describe their role in developing and implementing the IRWM Plan.)

**Golf Course Association of Borrego Valley (GOLF):** Recreation is the second most intensive use of groundwater in the Valley. Golf courses include the De Anza Country Club course, the Borrego Springs Park and Community Services District courses, the Montesorro course and the Road Runner Country Club course. Recently, the golf courses from a nonprofit organization to provide representation for their interests.

## Exhibit A

**Save Our Aquifer Coalition (SOAC):** The Save Our Aquifer Coalition, a California public interest association, was formed in the early 2000s to draw public attention to and lobby for correction of the aquifer overdraft situation in the Borrego Valley.

**The Sponsor Group (Spon):** The Borrego Springs Sponsor Group is a County of San Diego sanctioned entity that provides local input to the county planning process. Members are appointed by the Board of Supervisors through nominations from the local group. The members have no term limits or official power over planning matters. They are an advisory panel that makes recommendations to the San Diego County Department of Planning and Land Use.

**Agricultural Alliance for Water and Resource Education (AAWARE):** This California nonprofit mutual benefit corporation was formed in 2003 by the majority of growers in the Borrego Valley. Its' purpose is 'to provide educational information concerning agricultural use of water resources and to protect against the reduction of that use without just compensation...' This entity has been active in helping to define the amount of water used by agriculture and has conducted a seminar on methods to reduce water usage in the Valley.

**Anza-Borrego Desert State Park (ABSP):** Anza-Borrego Desert State Park is the largest state park in California. Five-hundred miles of dirt roads, 12 wilderness areas and miles of hiking trails provide visitors with an opportunity to experience the California Desert. The park is named after Spanish explorer Juan Bautista de Anza and the Spanish name borrego, or bighorn sheep. The park features washes, wildflowers, palm groves, cacti and sweeping vistas and fauna including roadrunners, golden eagles, kit foxes, mule deer and bighorn sheep as well as iguanas, chuckwallas and the red diamond rattlesnake.

### 2.3 Non Local Technical Resources

Two other agencies, though not part of the governance structure of the RWMG nor are they local stakeholders, serve as technical resources to the RWMG. These include:

**California Department of Water Resources, Southern District (DWR):** The DWR has been conducting limited assessment of the groundwater resources since about 2002 through the DWR Local Assistance Program. In 2008, the DWR and BWD entered into a contract that could span a three year period to perform a comprehensive well inventory and water quality assessment of the basin.

**United States Geological Survey (USGS):** The USGS has entered into a contract with BWD to develop a numeric model of the groundwater basin. This is three year effort also includes establishing a high precision GPS survey of key wells in the Valley.

### 2.3 Relationship of Stakeholders

Table 1 illustrates the relationship and responsibilities of all of the agencies and stakeholders that are a part of the BV RWMG.

## Exhibit A

**Table 1 Stakeholder Relationships**

|                           | BWD | CoSD | RCD | Golf | SOAC | Spon | AAWARE | ABSP | DWR | USGS |
|---------------------------|-----|------|-----|------|------|------|--------|------|-----|------|
| Retail Water Purveyor     | •   |      |     |      |      |      |        |      |     |      |
| Wastewater Mgt.           | •   |      |     |      |      |      |        |      |     |      |
| Flood Management          | •   | •    |     |      |      |      |        |      |     |      |
| Land Use Authority        |     | •    |     |      |      |      |        |      |     |      |
| Groundwater Mgt.          | •   |      |     |      |      |      |        |      |     |      |
| Self Supplied Water       |     |      |     | •    |      |      | •      |      |     |      |
| Community Org.            |     |      |     |      | •    | •    |        |      |     |      |
| Industry Organizations    |     |      |     | •    |      |      | •      |      |     |      |
| State/Federal Agency      |     |      |     |      |      |      |        | •    | •   | •    |
| Interested Group          |     |      |     |      | •    | •    | •      |      |     |      |
| Local Agency              | •   | •    | •   |      |      |      |        |      |     |      |
| Soil Conservation         |     |      | •   |      |      |      |        |      |     |      |
| Exotic Plant Removal      |     |      | •   |      |      |      |        |      |     |      |
| Environmental Stewardship |     |      | •   |      |      |      |        | •    |     |      |
| Knowledge of Resource     |     |      |     |      |      |      |        |      | •   | •    |

### 2.4 Information Exchange and Competing Interests

An important part of the RWMG work program is the collection and sharing of data on the groundwater basin and water uses. Also of interest are the competing interests that exist within the Valley. These relationships are shown in Table 2. Note that DWR and USGS are included in the table and serve as unbiased technical resources to the RWMG.

**Table 2 Information Exchange and Competing Interests**

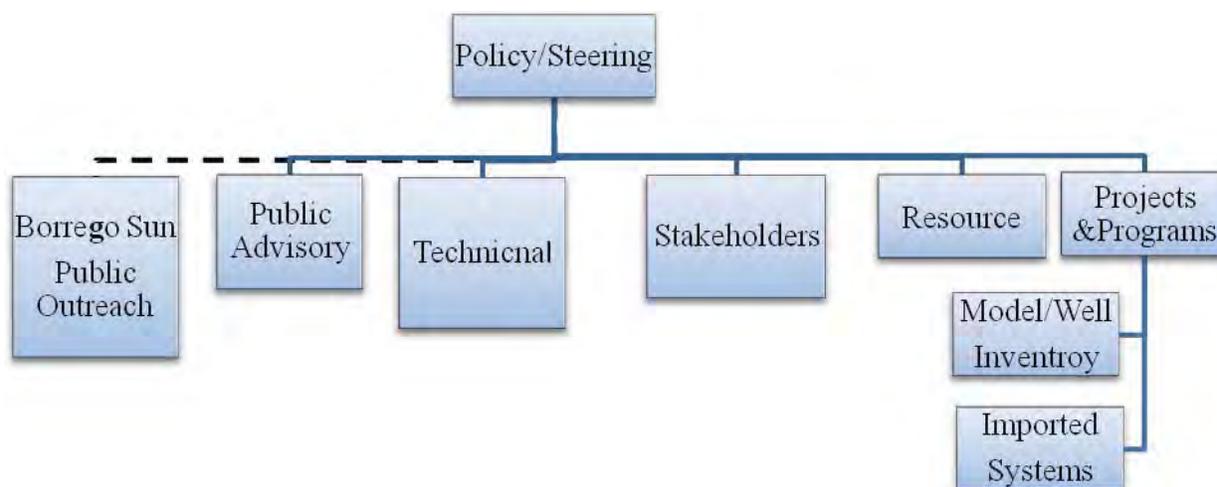
|                     | BWD | CoSD | RCD | Golf | SOAC | Spon | AAWARE | ABSP | DWR | USGS |
|---------------------|-----|------|-----|------|------|------|--------|------|-----|------|
| Data Collection     | •   | •    |     |      |      |      |        |      | •   | •    |
| Information Sharing | •   | •    |     |      |      |      |        |      | •   | •    |
| Competing Interests | •   |      |     | •    | •    |      | •      | •    |     |      |

## Exhibit A

### 3.0 Question 3: Stakeholder Process

All stakeholders and resource agencies have been invited to participate in the RWMG process. The interests and working relationships between these entities has been identified previously and their participation has been grouped into a Policy/Steering Committee or within a subcommittee. The overall governance and stakeholder input process is depicted in Figure 1.

Figure 1 The Borrego Valley RWMG Governance Structure



The above chart shows the organizational and governance structure of the BWRWMG. The RWMG is composed of four working subcommittees and a Policy and Steering Committee. Additionally, while not a formal committee, the sole local newspaper, the *Borrego Sun*, serves as an additional outreach component of the RWMG. Finally, Project & Programs Specific committees manage projects and programs. Each committee make-up and function is described as follows:

#### Policy/Steering Committee

This committee is composed of the three ‘local agencies’ of BWD, CoSD and RCD. This is the basic decision making committee. All input from the various subcommittees is vetted by the other subcommittees and presented, with recommendations to this committee. This committee has the responsibility of providing funding for the activities of the RWMG.

#### Stakeholders Subcommittee

This group is comprised of AAWARE, SOAC, Golf Course Association and the ABSP.

## Exhibit A

### Technical Subcommittee

This committee is comprised of the several local residents that have technical degrees and have provided important input to the groundwater issues of the region.

### Public Advisory Subcommittee

The committee represents any resident of the Valley that would like to participate in the process. Historically, there are a number of concerned citizens that have expressed their opinions about programs and projects of BWD.

### Project Subcommittees

Project subcommittees are specific to funded projects by the RWMG. Presently these include the Model Development and Well Inventory Project (funded by BWD), the Importation and Water Supply Augmentation Project (funded by a Federal STAG grant and BWD). Other project committees might include, for example an Exotic Species Elimination committee or Soil Stabilization committee.

### Resource Subcommittee

The USGS and DWR make-up this subcommittee. It functions as a technical advisor group and is not part of the decision making structure, i.e., it does not make recommendations.

**Table 3 Committee Participation**

| Committee       | BWD | CoSD | RCD | Golf | SOAC | Spon | AAW-ARE | ABSP | DWR | USGS | Public |
|-----------------|-----|------|-----|------|------|------|---------|------|-----|------|--------|
| Steering        | •   | •    | •   |      |      |      |         |      |     |      |        |
| Stakeholders    |     |      |     | •    | •    |      | •       | •    |     |      |        |
| Technical       |     |      |     |      |      |      |         |      |     |      | •      |
| Resource        |     |      |     |      |      |      |         |      | •   | •    |        |
| Public Advisory |     |      |     |      |      |      |         |      |     |      | •      |

### 3.1 How are the Stakeholders Identified and Invited to Participate.

The Borrego Valley Groundwater Basin has been known to be in a state of overdraft for many years (probably since 1945), but more recently, with the advent of residential growth and golf course development, the overdraft rate has increased. In the 1980s several agencies, both federal and state conducted investigations that defined the overdraft rate and the water use by domestic and agricultural segments.

As the area began to develop residential units, the local residents began to be concerned about the incessant lowering of the water table and that there was no plan or agency to curtail the water level drop and stop the overdraft. The BWD initiated the process of becoming the AB 3030 Groundwater Management agency in the year 2000.

## Exhibit A

By the year of the completion and adoption of the GWMP (2002), the stakeholders had established a number of competing interests and concerns for the future of the basin's supply were well established. Competing stakeholders were identified:

The agricultural interests, who represent about 70% of the production from the basin, formed AAWARE (described earlier); the golf courses were identified with about 20% of the production from the basin, but it was until 2008 that they formed an organization to represent their interests. Finally, the residential users of the remaining 10% were represented by the BWD. However, the BWD is not mandated to resolve the overdraft issue. Their responsibility is to ensure domestic water supply reliability and quality. Also, as indicated earlier, SOAC was formed to advocate a position of stabilizing the overdraft.

The Co SD was also aware of the continued overdraft. Since this agency has responsibility over zoning and permitting for land use disturbance and building, it began to consider and adopt ordinances dealing with grading of land for farming and controlling the expansion of water use for all new uses.

The ABSP also expressed its concern about the continued overdraft of the aquifer. Thus by about 2008, all stakeholders were identified and their positions established.

Since all known stakeholders are participants in the organization structure established for this RWMG and shown in Figure 1 provides for all the identified stakeholders to participate in the water management process. Each major water user category is provided a subcommittee for participation.

Additionally, since there are many members of the community that have an interest in participating in the water management process but are not specifically identified with any of the stakeholder groups, their participation is encouraged as part of the Public Advisory subcommittee. These individuals have been identified by their participation in the BWD board and committee meetings as members of the public.

Additionally, while the Borrego Valley's Median Household Income is less than 80% of the State wide average, the 2000 census does not provide a geographic breakdown of areas within the census tract, thus it is not possible to identify a specific area of the Borrego Springs community as 'disadvantaged'.

### **3.2 How does the process work?**

BWD adopted an Integrated Water Resources Management Plan in April of 2009. The plan was noted as an update to the Groundwater Management Plan. The IWRM plan incorporated all information known about the aquifer and identified several local and non-local water components that could lead to either partial or complete stabilization of the overdraft. However, studies by DWR and GS were in the initial stages of work and therefore new information about the water resources of the area would be discovered.

## Exhibit A

Further, the complexities and perturbations of the various management plans would increase as knowledge became available. Thus, the RWM process is that each of the projects and programs identified in the IWRM plan would be reviewed by each of the subcommittees. Subcommittee reports are circulated for review by each subcommittee for vetting. Further, each subcommittee can identify new issues of concern with each alternative. For example, the fallowing of agricultural land would result in problematic if the land were not immediately conditioned to stabilize the soil. It is well known that the area is prone to wind conditions with extreme velocities that result to soil transport and poor air quality. Thus, a fallowing program should incorporate soil stabilization to prevent this unhealthful occurrence (see work plan, section 3.3)

Committee meetings are scheduled to meet bimonthly. The committee meetings would be publicized and open to the public (including participants from other committees). Detailed meeting minutes and actions are posted on the BWD website and made available to the *Borrego Sun*.

Initial funding for the process is the responsibility of BWD. As grants and other funding become available, a portion of the received funds will be set aside for the RWMG process.

### 3.3 Work Plan

The following is an initial description of a work plan that will be input to the RWM process for refinement and modification.

**Soil Erosion from Fallowing:** As mentioned earlier, there is a need to investigate and define a soil stabilization program for fallowed lands. There is the potential for fallowing nearly all of the approximately 3,500 acres of currently cultivated agricultural lands.

**Soil Stabilization of the Borrego Sink:** While no studies have been made of the potential harmful conditions that may exist when the soils within the Borrego Sink area become airborne during high velocity wind events. Studies in the Owens Lake area of Owens Valley have demonstrated substantial deleterious effects on humans.

**Tamarisk Removal:** It is well documented that the Tamarisk tree (a non native) is capable of high water consumption. Tamarisk has historically been planted in the Borrego Valley agricultural area as a wind break for the citrus groves. No estimates have been made of the cost and water conservation benefits of a comprehensive Tamarisk removal program.

**Water Quality Depth Dependent Data:** Some investigators have discounted the usefulness of the lower aquifer (Palm Spring Formation) as a water supply. It have also been speculated that as the Upper and Middle aquifers are depleted, that poor quality water from this deep source might up well into the above aquifers and make them unfit for potable use. A multi-aquifer monitoring well should be constructed to tap all water bearing zones to determine both the quality and hydrostatic pressure of each aquifer. Funding for this monitoring well should be pursued through existing and future water bond programs.

## Exhibit A

**Allegretti Farms Groundwater Basin:** An importation project identified in the BWD IWRM plan was the import of desalted groundwater from a groundwater basin located about 15 miles to the southeast of the BWD distribution system. Field studies should be conducted to further define the basins useable storage and its water quality.

**Recharge Basins:** The potential for constructing recharge basins, such as the one at De Anza for temporarily capturing and subsequent recharge of the infrequent storm waters that emanate from the mountain basins or from the large watershed in Coyote Creek have not be fully investigated.

**Water Quality in the Agricultural Area:** Little information is known about the quality of groundwater in the agricultural area. It would seem that with the withdrawal of water and a return flow of about 20% of the withdrawn amount along with 100% of the minerals contained in the original extraction, that the water quality beneath the agricultural area may exceed potable standards. Consequently, as agricultural lands are retired, there is a potential for these waters to migrate into the domestic wells of BWD. Monitoring wells should be constructed in the agricultural area to define the vertical distribution of the potentially poor quality waters.

**Mulching for Water Conservation:** As reported in the BWD IWRM plan an experiment was conducted to identify potential water savings resulting from heavy mulching on citrus crops. A significant savings was observed, but with significant costs. This study could be replicated to determine if the costs, if born by the domestic water users, would be competitive compared to the alternatives of importing new water into the area.

### 3.4 Collaboration Leading to Implementation of IRWM Plans

The governance structure identified above and the collaborating process also described above, allows for a thorough discussion and review of programs and projects leading to a final IRWM plan. The process includes all stakeholders of the region as well as outside highly respected technical resources and with ample opportunity for further public input to the process. Further, the inclusion of the ABSP should also ensure ample environmental stewardship.

#### 4.0 Question 4: Describe the process being used that makes the public both part of and aware of the regional management and IRWM efforts.

As shown in Figure 1, the public is invited to participate in the Public Advisory subcommittee meetings. Also, as indicated, the Borrego Sun plays an important part in the outreach process. Staff of the Borrego Sun attends all BWD board meetings and many of the BWD Standing and Ad Hoc committee meetings. Occurrences at these meeting are reported by monthly. Since the circulation of the Borrego Sun exceeds the number developed residences in the Valley, it is apparent that the water management activities are widely read. The BWD outreach program, as defined by their many public meetings and the role that the Borrego Sun has played are fully described in the BWD IWRMP of 2009.

#### 4.1 How can the public to gain access to the RWMG and IRWM process for information and how they could provide input.

## Exhibit A

The public is invited to attend and participated orally or in writing at all of the Public Advisory subcommittee meetings. The public can also speak at the BWD board meetings and directly to their elected representatives. All meetings of the RWMG are public noticed and open to the public. Announcements of all meetings and meeting minutes are displayed on the BWD website.

### 5.0 Question 5 RWMG Governance Structure

The RWMG governance structure has previously been described. Since the process is collaborative, there is every likelihood that the process will be sustaining into the future. However, considering the number of interested and involved stakeholders and the consequences of failing to resolve the overdraft condition, it is more than likely that the process will be on-going leading to the development of regional water management plan of that sustains the various economic segments of the community and protects the vital underground resource from overdraft.

*Discuss how decisions are made. Identify the steps in which RWMG arrives at decisions and how RWMG members participate in the decision-making process. Examples of RWMG decisions to consider in the discussion include:*

#### 5.1 RWMG Decision Process

The decision making process was identified in section , that is all issues are discussed within each committee with recommendations put forward. These considerations and recommendations are then reviewed by the other subcommittees. Finally, they are brought to the Policy/Steering Committee for further evaluation and discussion, with the Chairs of the involved subcommittees presenting their ideas and participating in the discussion process, for decision. All issues, including those listed below are submitted into the decision making process and described.

*Establishing IRWM plan goals and objectives*

*Prioritizing projects*

*Financing RWMG and IRWMP activities*

*Implementing plan activities*

*Making future revisions to the IRWM plan*

*Hiring & managing consultants*

*Describe how the RWMG will incorporate new members into the governance structure. Explain the manner in which a balance of interested persons or entities representing different sectors and*

## Exhibit A

*interests have been or will be engaged in the process, regardless of their ability to contribute financially to the plan.*

*Describe how the governance structure facilitates development of a single collaborative water management portfolio, prioritized on the regional goals and objectives of the IRWM region.*

### 6.0 Question 6 the IRWM Boundary

The regional boundary of the BV IRWM is contained in an attached CD (UTM Zone 10, NAD 27 format).

The following boundaries or areas are shown:

Political/jurisdictional boundaries – the boundary between Riverside and San Diego Counties traverses our region and is shown on the map.

Water, conservation, irrigation, and flood district boundaries – only boundaries of BWD are of interest and are shown.

Watershed management areas – there are none in our region.

Groundwater basins as defined in DWR Bulletin 118, Update 2003 – California’s Groundwater – the boundary of the Borrego Valley (upper area) is shown on the map. The boundary of the southeastern portion of the basin is not defined and is shown by dashed lines.

RWQCB boundaries - The entire BV region is within the Colorado River RWQCB area.

Floodplain maps (i.e. FEMA/Corps of Engineers) – none are shown.

Physical, topographical, geographical and biological features – only topographic and geographic features are shown.

Surface water bodies -There are no surface water bodies in the region.

Major water related infrastructure – none

Impaired water bodies – none

Population – 2000 Census

|               |      |
|---------------|------|
| Hispanic-     | 957  |
| Non Hispanic- | 1892 |
| Total-        | 2849 |

## Exhibit A

Biological significant units or other biological features (critical habitat areas) – none are shown on the map. Such areas are known to exist within the ABSP.

Disadvantaged communities with median household income demographics – As indicated in the text, the entire community of Borrego Springs is treated as a single census tract by the 2000 census, while the entire area's MHI is below the State's MHI. Median Household Income (1999 dollars): \$36,638. CA MHI: \$37,994.

Explain how the IRWM region encompasses the service areas of multiple local agencies and will maximize opportunities to integrate water management activities related to natural and man-made water systems, including water supply reliability, water quality, environmental stewardship, and flood management.

### **7.0 Question 7 About the Region**

#### **7.1 History of IRWM efforts in the region.**

As indicated in section 3.1, water resource management in the region was limited until the initiation of the groundwater management planning process (AB 3030). Subdivisions were approved at the County level without regard to the water supply availability. Investigations by the Bureau of Reclamation, California Department of Water Resources and the USGS all indicated that the Borrego Groundwater Basin could sustain anticipated water use for several centuries. Thus there was no organized effort to initiate a water resources management agenda.

The steady lowering of the water table as evidenced by declining well hydrographs sounded an alarm that led to the initiation of the GWMP process which concluded in BWD being designated as the Groundwater Management Agency for the Basin in 2002.

Subsequently, the BWD in cooperation with several local stakeholders began to seek grant funding to construct monitoring wells to help define the resource and ultimately, its long term viability. This eventually led to the construction of four monitoring wells.

BWD, recognizing that the long term overdraft had created available groundwater storage space in the basin that could be used for water banking. BWD submitted a proposal for a Prop 50 grant to define the banking opportunity, but was unsuccessful in obtaining grant funding. These efforts were supported by various members of the community.

#### **7.2 Regional Water Management Issues and Conflicts**

## Exhibit A

The issues and their background relating to water supply, or more specifically, the long term sustainable water supply of the Borrego Valley Groundwater Basin are described in section 3.1 of this proposal, as are the water conflicts within the region.

BWD, as indicated, adopted a Groundwater Management Plan in 2002. That plan was an initial effort in developing a multi-benefit integrated programs and projects to meet the regional priorities. Subsequent to 2002, the BWD continued to follow the priorities and goals set forth in that plan. In April of 2009, BWD adopted the Integrated Water Resources Management Plan (IWMP). This document updated and incorporated all of the planning and project development (new monitoring wells) since 2002. The document was adopted, after public review and input, as an update to the GWMP.

### **7.3 Water Related Components of the Region.**

Water supply to the region is composed of runoff from the surrounding mountain watersheds. These flows, primarily from the north (Coyote Creek), recharge the upper aquifer of the of the groundwater basin along permeable water courses. Water is extracted from numerous wells. Most of the extractions are not measured and are therefore estimated by indirect methods. BWD, of course, measures all of its extractions from the basin.

On rare occasions, the storm flows are of such a magnitude that they cannot entirely percolate before reaching an area known as the Borrego Sink, located at the lowest elevation in the Valley. This depression is typically a dry lake bed. In very rare events, the Borrego Sink is filled to overflowing. These overflows may reach the Salton Sea.

The BWDs service area encompasses about 48 square miles, with a distribution system serving more than 2,000 customers, both residential and commercial. The district operates 11 production wells, four monitoring wells and one wastewater treatment plant.

There are not groundwater recharge facilities. Prior attempts at constructing 'dykes' to retard the occasional storm flows were found not successful in augmenting the local water supply.

A complete description of the water supply and water use is contained in the BWD IWRM plan of 2009.

### **8.0 Question 8 Relationships to Other IRWM Regions**

To our knowledge, there are no other IRWM regions in our area of the Colorado River Regional. It is our understanding that an IRWM region may be proposed in the Riverside County area of Coachella Valley. If this area develops into an IRWM region, we would cooperate and coordinate our activities. We are not aware of an IRWM region that might be developed in the Imperial County area, but if such were contemplated, we would desire to cooperate. Consequently, there are no overlapping IRWM areas with our proposed area. We believe that our proposed region would not be adjacent to any other IRWM region.

There are no uncovered or void areas within our proposed IRWM area.

## Exhibit A

### 9.0 Question 9 Entities Participating in the Interview

We propose the following participants and spokespersons at the interview:

BWD - Rich Williamson, General Manager

BWD - William Mills, Consultant to BWD

CoSD – Jim Bennett, San Diego County Hydrologist

RCD – Marty Leavitt, Executive Director

AAWARE – Steven Smiley, Seley Ranch Operations Manager

**Exhibit B**

**RESOLUTION NO. 2012-01-02**

**RESOLUTION AUTHORIZING EXECUTION OF A FUNDING AGREEMENT AND RELATED DOCUMENTS FOR FUNDING UNDER THE SAFE DRINKING WATER, WATER QUALITY AND SUPPLY, FLOOD CONTROL, RIVER AND COASTAL PROTECTION BOND ACT OF 2006 (PROPOSITION 84)**

**WHEREAS**, the Borrego Water District (“District”) seeks to prepare an Integrated Regional Water Management Plan (“Plan”); and

**WHEREAS**, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84) provides grant funding for the preparation of such Plans; and

**WHEREAS**, the District desires to obtain a Proposition 84 grant from the State of California Department of Water Resources for the preparation of the Plan in an amount not to exceed One Million (\$1,000,000.00); and

**WHEREAS**, the State of California requires that the District’s Board of Directors adopt a resolution authorizing an officer of the District to prepare the necessary data, conduct investigations, file such application, and execute a grant agreement with the California Department of Water Resources.

**WHEREAS**, The District Board of Directors desires to authorize the General Manager of the Borrego Water District to prepare the necessary data, conduct investigation, file such application, and execute a grant agreement with California Department of Water Resources.

**NOW, THEREFORE**, the Board of Directors of the Borrego Water District does hereby resolve, determine and order as follows:

**Section 1.** That application be made to the California Department of Water Resources to obtain an Integrated Regional Water Management Planning Grant pursuant to the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resource Code Section 75001 *et seq.*), and to enter into an agreement to receive a grant for the preparation of the Plan.

**Section 2.** The District’s General Manager is hereby authorized and directed to prepare the necessary data, conduct investigations, file such application, and execute a grant agreement with the California Department of Water Resources.

**Section 3.** That the District’s General Manager be and hereby is authorized to approve claims for reimbursement under the Project.

**Exhibit B**

**ADOPTED, SIGNED AND APPROVED** this 25th day of January 2012.

*Beth A Hart*

\_\_\_\_\_  
President of the Board of Directors  
of Borrego Water District

ATTEST:



\_\_\_\_\_  
Secretary of the Board of Directors  
of Borrego Water District

Exhibit B

STATE OF CALIFORNIA )  
 ) ss.  
COUNTY OF SAN DIEGO )

I, Marshal Brecht, Secretary of the Board of Directors of the Borrego Water District, do hereby certify that the foregoing Resolution 2012-01-02 was duly adopted by the Board of Directors of said District at an adjourned regular meeting held on the 25<sup>th</sup> day of January, and that it was so adopted by the following vote:

AYES: DIRECTORS: Hart, L. Brecht, M. Brecht, Estep, Delahay  
NOES: DIRECTORS:  
ABSENT: DIRECTORS:  
ABSTAIN: DIRECTORS:

  
\_\_\_\_\_  
Secretary of the Board of Directors  
of Borrego Water District

STATE OF CALIFORNIA )  
 ) ss.  
COUNTY OF SAN DIEGO )

I, Marshal Brecht, Secretary of the Board of Directors of the Borrego Water District, do hereby certify that the above and foregoing is a full, true and correct copy of RESOLUTION NO. 2012-01-02, of said Board, and that the same has not been amended or repealed.

Dated: 1/25/12

  
\_\_\_\_\_  
Secretary of the Board of Directors  
of Borrego Water District



**Anza Borrego Desert Integrated Regional  
Water Management  
Planning Grant Proposal  
Eligible Applicant Documentation**

Attachment 2 consists of the following items:

✓ **Eligibility Statement**

Below is a statement explaining why the Borrego Water District is an eligible applicant for an Integrated Regional Water Management (IRWM) Planning Grant.

---

As described in Attachment 1, the Borrego Water District (BWD) is applying for this Planning Grant on behalf of the Regional Water Management Group (RWMG) of the Anza Borrego Desert (ABD) IRWM Program. BWD is an eligible applicant as described below:

**Local Agency and Statutory Authority**

BWD is a local agency as defined in Appendix B of the Proposition 84 IRWM Grant Program Guidelines. BWD was established in 1962 as a California Water District in accordance with Section 216 of the Public Utilities Code. In 2002, BWD adopted a groundwater management plan in accordance with Assembly Bill 3030 (AB 3030), a process which led BWD to obtain authority to conduct groundwater replenishment activities.

**Legal Authority to Enter into a Grant Agreement**

BWD has legal authority to enter into a grant agreement with the State of California. Per the approved Region Acceptance Process (RAP) application, the RWMG selected BWD to submit grant applications to the State on behalf of the RWMG parties (refer to Attachment 1). Resolution 2012-01-02 authorizes BWD to submit this ABD IRWM Planning Grant Proposal and execute an agreement with the State of California for IRWM planning activities (refer to Attachment 1).

**Legal Agreements among Partners and/or Organizations**

<<Describe any legal agreements among partner agencies and/or organizations that ensure performance of the Proposal and tracking of funds.>>



## Anza Borrego Desert Integrated Regional Water Management Planning Grant Proposal Work Plan

Attachment 3 consists of the following items:

- ✓ **Introduction**
- ✓ **Current Status in Meeting IRWM Plan Standards (page 18)**
- ✓ **Grant Work Plan (page 20)**
  1. [Stakeholder](#) Outreach & Program Administration
  2. Regional Water Resources Plans
  3. Updating the ABD-IRWM Plan
  4. [Grant](#) Administration
- ✓ **Additional IRWM Plan Work (page 38)**

### 1. Introduction

The Anza Borrego Desert (ABD) Integrated Regional Water Management (IRWM) Region (Region), which was formally approved through the California Department of Water Resources' (DWR's) Region Acceptance Process (RAP) in 2009, is unique compared to other IRWM regions for several reasons.

The ABD Region is largely comprised (over 70%) of State land that falls within the jurisdiction of the Anza-Borrego Desert State Park (State Park). For this reason, the Region possesses unique natural and cultural resources that are irreplaceable and of Statewide and National importance. Designated as a National Natural Landmark in 1974 and a Biosphere Reserve by the United Nations, the State Park contains the largest area of open wilderness within the State of California, including approximately 61 sensitive plant species, 86 sensitive animal species, nine (9) California Historic Landmarks, and innumerable cultural resource sites (Anza-Borrego Desert State Park 2005). Major drainages within the State Park include Rockhouse Canyon, Coyote Creek, Borrego Palm Canyon, Tubb Canyon, Grapevine Canyon, Fan Felipe Creek, Fish Creek, Rodriguez and Oriflamme Canyons, Vallecito Creek, Canebrake and Bow Willow Canyons, and Carrizo Creek. Alluvial valleys within the State Park are important for water resources as they provide the conduit through which runoff can infiltrate to regional groundwater basins. However, groundwater overdraft conditions could potentially adversely impact the State Park's mission to preserve and to conserve the natural capital of the desert ecosystems within the Park.

#### Unique Attributes of the Region:

- Over 70% is comprised of important State resources (Anza-Borrego Desert State Park).
- Almost 100% of the Region qualifies as a DAC.
- Faces critical water supply issues relating to sole reliance on dwindling groundwater resources.

<<John Peterson to check in with State Park folks on accuracy of text related to State Park.>>

Second, the Region is unique because almost 100% of the Region qualifies as a disadvantaged community (DAC). Stakeholders have expressed concerns about the affordability (pumping and treatment

costs) and quality of groundwater supplies within the Region for these DAC residents. Therefore, it is critical to ensure that the integrated planning process supports maintenance of a sustainable and safe water supply in accordance with Statewide Priorities.

Given its particular value regarding natural resources and DACs, the Region faces critical water supply issues that must be addressed through collaborative planning and management. The Region relies on groundwater resources for its sole source of water supply, yet existing groundwater resources [of the Borrego Valley](#) are in a state of overdraft and potentially face substantial water quality issues which could adversely impact the State Park’s mission to preserve and to conserve the natural capital of the desert ecosystems. Due to the Region’s unique nature, it is imperative that the ABD IRWM Plan be completed to meet DWR’s IRWM Plan Standards so as to comprehensively address the Region’s water resource issues, while positioning the Region for necessary funding to implement critical water supply and water quality projects.

### **Regional Background**

The following information, adapted from the 2009 RAP submittal, the Draft IRWM Plan, and the Planning Grant-Round 1 Application, provides general background information regarding the Region.

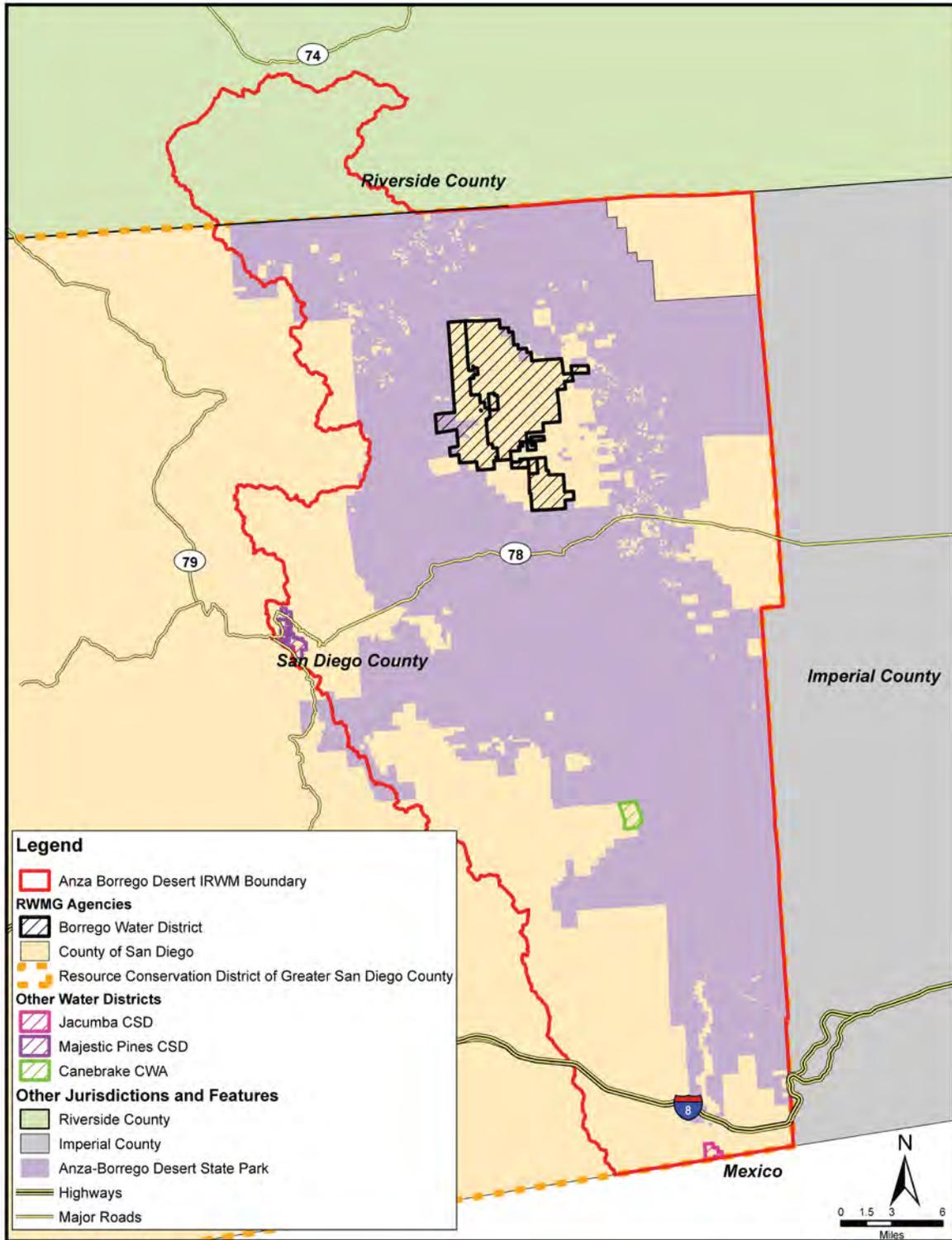
#### ***Establishment of the ABD Region***

In 2006, the Borrego Water District (BWD) began working to secure a position within an IRWM Region in the San Diego or Colorado River Funding Areas. However, these attempts were unsuccessful due to political boundary considerations. In 2009, BWD partnered with the County of San Diego (County) and Resource Conservation District of Greater San Diego County (RCD) to form the ABD IRWM Region, which would better reflect the geologic and hydrologic conditions of the Borrego Valley area. In 2009, the Region officially became an IRWM region through DWR’s RAP approval.

The original RAP submittal for the Borrego Valley area was limited to the Borrego Valley Watershed within San Diego County, but was later expanded to include the portion of San Diego County that lies in the Colorado River Hydrologic Basin, the entire Borrego Valley Watershed that extends into Riverside County, and the area of San Diego County east of the Tecate Divide (refer to **Figure 3-1** and **Figure 3-2**). The expanded Region includes the entire Anza-Borrego Desert State Park, four public water purveyors, and six separate tribal lands.

Details regarding the history of the ABD Region, including letters that demonstrate the history described above are included as **Appendix-Exhibit A**.

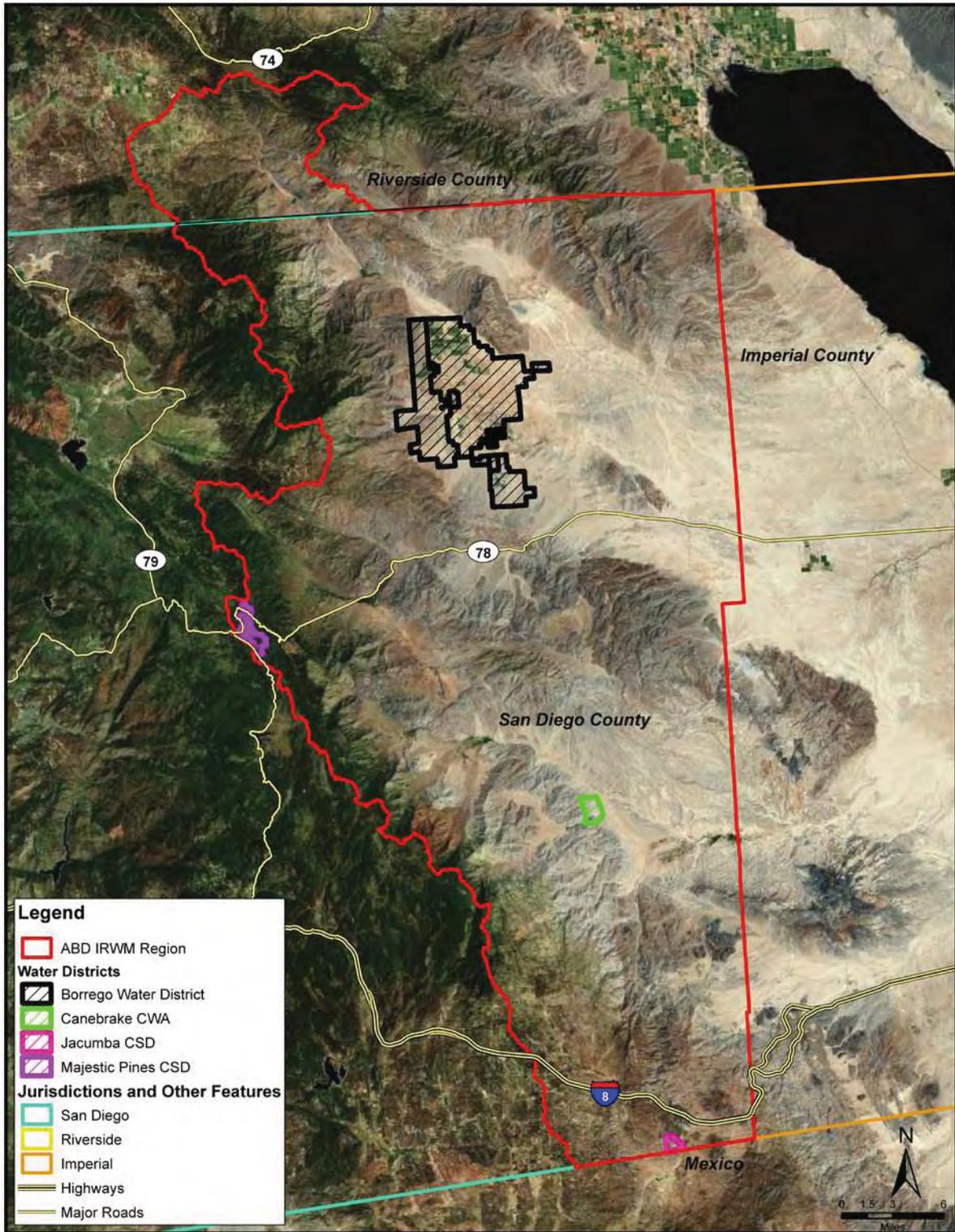
Figure 3-1: Jurisdictions within the ABD IRWM Region



SANGIS, 2009 and SANDAG, 2009



Figure 3-2: Aerial Map of the Anza Borrego Desert IRWM Region



Bing Maps, 2010



### ***Regional Water Management Group***

To comply with the IRWM requirements, a Regional Water Management Group (RWMG) was formed in 2009 to implement the ABD IRWM Program. Three local agencies comprise the RWMG:

- Borrego Water District (BWD),
- County of San Diego (County), and
- Resource Conservation District of Greater San Diego County (RCD).

The BWD service area overlays the northern portion of the Region, while both the County and RCD operate within the entire Region with the exception of lands in the Coyote Creek Watershed that lie within Riverside County (refer to Figure 3-1).

BWD, which was established in 1962, is a water supply and groundwater management agency with the authority to manage the Region’s largest water supply source (groundwater). BWD provides water, sewer, flood control, and gnat abatement services for areas in the unincorporated community of Borrego Springs. In 2002, BWD adopted a Groundwater Management Plan in accordance with the Groundwater Management Act (Assembly Bill 3030; Water Code §§ 10750 et seq.) and obtained the authority of a groundwater replenishment district. As a designated groundwater replenishment district, BWD has the authority to conduct planning for groundwater management, to buy and sell water, to exchange water, to distribute water in exchange for ceasing or reducing groundwater extraction, to conduct groundwater recharge activities, and to build necessary works to achieve groundwater replenishment. This designation also provides the authority to levy a replenishment assessment.

The County is involved in water management within the Region through collection of annual groundwater level data and development of land use restrictions that may prevent an increase in aquifer overdraft and reduce flood-related threats to property. In addition, the County has responsibilities regarding flood control within the portions of the Region that lie within the County, and has land use authority within San Diego County lands.

The RCD is involved in water-related management through soil and water conservation and watershed management and restoration activities. The RCD has the authority to promote and provide conservation education, to conduct research, and to advise and assist other public agencies and private individuals in the areas of land use planning, soil and water conservation, wildlife habitat enhancement and restoration, agricultural sustainability, control of exotic plant species, and watershed restoration.

### ***Other Water Managers***

In addition to BWD, there are three additional entities within the Region that have water supply authority:

- Canebrake County Water District (CWD),
- Jacumba Community Services District (CSD), and
- Majestic Pines CSD.

Each of these water supply entities supplies water to small unincorporated communities located within the County (refer to Figure 3-1). Canebrake CWD was formed in 1966, and provides potable water (groundwater) to the community of Canebrake, which is located fifteen (15) miles south of Borrego Springs. Jacumba CSD was formed in 1985, and provides potable water supply and park and recreation services to the unincorporated community of Jacumba, which is a federally-designated colonia located adjacent to the United States-Mexico border. Majestic Pines CSD was formed in 1993, and provides potable water to two residential developments located near the community of Julian.

### ***Geographic and Hydrogeographic Setting***

The ABD Region is located in the Colorado River Funding Area, which coincides with the Lower Colorado River hydrologic unit. This 850,000-acre Region is almost entirely located in the County of

San Diego, with a small area in southern Riverside County. The Region is bounded on the east by Imperial County; on the south by Mexico; on the west by the Peninsular Range and on the north by Riverside County, except for a portion of the Coyote Creek watershed that extends into Riverside County (refer to Figure 3-1).

The topography of the Region is highly variable and has a major effect on meteorology, hydrology, soils, vegetative communities, wildlife habitat use, and human land use patterns (refer to Figure 3-2). Elevations range from a few feet above mean sea level (AMSL) to over 6,000 feet AMSL in the Peninsular Range. Topography in the Peninsular Range area creates unique habitat niches such as deep canyons on the eastern slopes that support native vegetation, and alluvial fans that extend from the canyon mouths. In addition, topographically enclosed drainage basins containing interior valleys and no outlets are common. The eastern portion of the Region is made up of ancient sea bottom, shoreline, marsh, and inland lake deposits. Mountain masses are scattered throughout the Region and are thought to be related to the Peninsular Range, and made of the same parent rock. The oldest rocks in the Region dating from about 540 million years ago are in the [Santa Rosa, San Ysidro, and Coyote Mountains](#). These [metamorphic](#) rocks were originally part of an ancient inland sea bottom and contain fossils of [marine](#) life forms that are [more than 450 million years old](#). [Most Anza-Borrego fossils range from 6 million to half a million years old and may be](#) the longest continuous record for life [during](#) this period in North America ([Jefferson and Lindsey 2006](#)).

The Region [lies just to the west of the San Andres fault zone](#) and is bisected by two active fault zones, the San Jacinto and the Elsinore faults. The San Jacinto fault runs from the Hemet area through Borrego Valley with branches to the Salton Trough. The Elsinore fault runs from Temecula south along County Road S-2. On April 9, 1968, the largest earthquake in [the Region](#) in modern times occurred on the Coyote Canyon fault, a branch of the San Jacinto fault. The epicenter was near Borrego Mountain, and the magnitude was 6.4 on the Richter Scale ([Remika 1992; Jee 1988](#)).

Annual precipitation is sparse and variable throughout the Region, ranging from 2 to 6 inches at stations on the desert floor. However, occasional flash flooding can bring torrential rainfall and destructive flooding. Flash flooding is generally attributed to monsoon-like conditions, which generally occur in the summer and fall months as a result of local thunderstorms and tropical cyclones that develop in the Gulf of Mexico. Flash flooding poses a substantial issue in that it has resulted in severe development restrictions throughout the Region.

The Region experiences mild temperatures in the winter months and hot temperatures in the summer. Measurements taken at the Borrego Desert Park Weather Station show that in a typical year monthly extreme high temperatures reach over 85° F (29° C) as early as March, and are routinely over 100° F (38° C) by May. From June through September, the monthly extreme high temperatures will routinely exceed 110° F (43° C). Not until November will monthly maximum temperatures stay consistently below 100° F.

Water supply to the Region is composed of groundwater that is recharged by runoff from the surrounding mountain watersheds. These flows, primarily from the north (Coyote Creek), recharge the upper aquifer of the of the Region's groundwater basins along permeable water courses. Groundwater is extracted and utilized throughout the Region from numerous wells. Agencies with water control authority, including BWD, measure their own groundwater extractions; however the majority of groundwater extractions are not measured, and are therefore estimated by indirect methods.

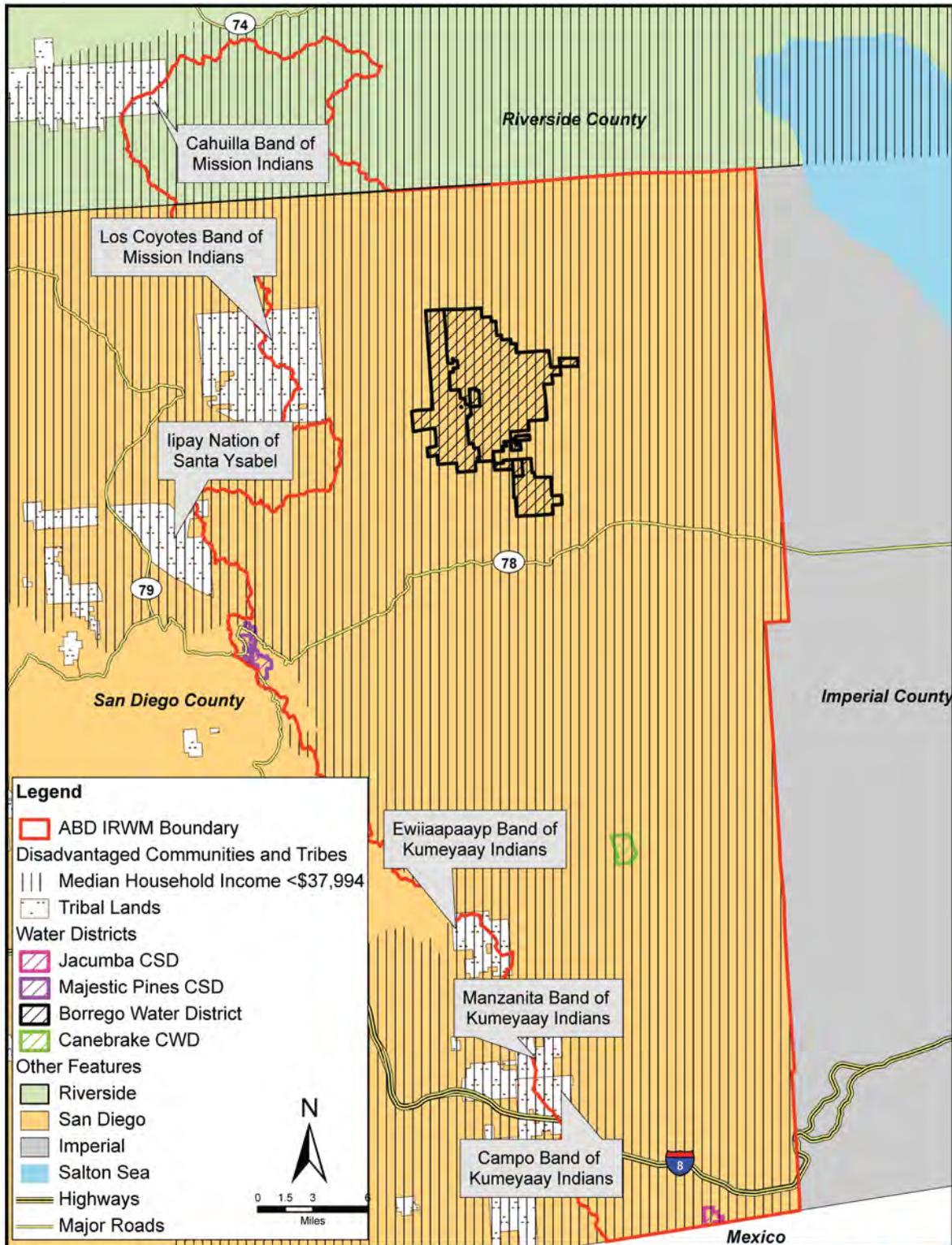
On rare occasions, storm flows in the [Borrego Valley](#) are of such a magnitude that they cannot entirely percolate to groundwater basins before reaching an area known as the Borrego Sink, located at the lowest elevation in the Borrego Valley. This depression is typically a dry lake bed, however during very rare events, the Borrego Sink may overflow with water. Such storm flows are often associated with tropical monsoons originating in the Gulf of Mexico.

***Regional Demographics***

The Region is home to a small number of permanent residents (approximately 3,000); however the Region supports a large amount of tourism, particularly through the use of recreational features of the Anza-Borrego Desert State Park [and the Ocotillo Wells State Vehicular Recreation area \(SVRA\)](#). According to the State Park’s General Plan, 600,000 people visit the State Park each year on average, and the annual number of visitors has ranged from 424,000 to 900,000 (Anza-Borrego Desert State Park 2005).

As demonstrated within **Figure 3-3**, almost the entire Region is classified as a DAC according to DWR standards. According to the 2010 DWR Guidelines, a DAC is classified as, “a community with an annual median household income (MHI) that is less than 80 percent of the Statewide annual median household income.” Based on the most recent geographic data available for the Region (2000 Census data), the MHI for California is \$47,493. As such, those communities with incomes less than 80% of this value, or \$37,994, qualify as DACs.

Figure 3-3: Disadvantaged Communities and Tribal Land within the ABD Region



U.S. Census Bureau, 2000 Census, Median Household Income by Census Tract. Available: [http://www.sandag.co.gov/resources/maps\\_and\\_gis/gis\\_downloads/admin.asp](http://www.sandag.co.gov/resources/maps_and_gis/gis_downloads/admin.asp)



In addition, **Figure 3-3** demonstrates that the Region also contains small amounts of tribal land from six separate tribal entities, including the following tribes:

- Cahuilla Band of Mission Indians,
- Los Coyotes Band of Mission Indians,
- Iipay Nation of Santa Ysabel,
- Ewiiapaayp Band of Kumeyaay Indians,
- Manzanita Band of Kumeyaay Indians, and
- Campo Band of Kumeyaay Indians.

#### ***History of Water Management Efforts in the Region***

The Region's primary groundwater basin (the Borrego Valley Groundwater Basin), which supplies water to the majority of the Region's residents, has been known to be in a state of overdraft for many years, most likely since 1945. In the past few decades, the [Borrego Valley's](#) water demands have increased, therefore increasing the magnitude of the [area's](#) overdraft condition.

Over the last few decades, local residents and other interests within the [Borrego Valley](#) have expressed growing concern regarding the lowering of the [area's](#) groundwater table and the fact that the Region did not have a plan or regulatory agency with the authority to [adequately](#) address regional groundwater overdraft. As a result, in 2000, BWD initiated the process of becoming a Groundwater Management Agency in accordance with the Groundwater Management Act.

BWD's 2002 Groundwater Management Plan (GWMP) successfully established BWD as the designated AB3030 groundwater management agency for the Borrego Valley Groundwater Basin. However, as of today this groundwater basin remains an unmanaged basin, as the statutory provisions of the Act do not [appear to provide adequate authority for establishing a managed basin in this situation nor a cost-effective means to collect](#) water extraction fees. For these reasons, BWD has previously attempted to address the overdraft through voluntary measures paid for [primarily](#) by BWD's ratepayers, although these ratepayers account for only approximately 10% of annual withdrawals from the basin. Thus, since 2002, although there has been concerted effort by [Borrego Valley](#) stakeholders to comprehensively address and manage the [area's](#) groundwater resources, the authority and funding mechanism has not been in place to establish managed groundwater basins, presently considered a necessary criteria for water banking, importing replenishment water, and obtaining the financing for building water transport pipelines to accomplish these purposes.

The impetus for beginning IRWM planning in the Region was to gather a comprehensive group of agencies, stakeholders, and citizens that could work toward developing an IRWM Plan that would assist the Region in resolving regional issues such as groundwater overdraft, [groundwater quality, flood control, and environmental integrity](#).

#### **Summary of IRWM Planning Efforts**

The following sections provide information regarding previous IRWM planning efforts that have occurred in the Region from the Public Kickoff in early 2010 to present.

##### ***Meeting Summary***

A Public Kickoff meeting was held in January 2010 to initiate the Region's IRWM planning process. Following this meeting, the RWMG and IRWM stakeholders (Stakeholders Committee) worked through September 2010 to begin development of a Draft IRWM Plan and prepare and submit a Planning Grant-Round 1 Application to DWR. During this timeframe, the RWMG and the Stakeholders Committee met on a regular basis, [with meetings occurring approximately once per month](#).

Upon receipt of information that the Region was not recommended for Planning Grant-Round 1 funding, the RWMG reconvened to begin development of a Planning Grant-Round 2 Application. The RWMG decided to increase stakeholder involvement and transparency in development of Planning Grant Application materials by inviting all regional stakeholders to meetings and working collaboratively to establish the overall goals and focus of the IRWM planning process. Through this process, the RWMG convened seven (7) meetings (open to all stakeholders) from July 2011 to March 2012 to develop Planning Grant-Round 2 Application materials. In addition, a Work Plan Workgroup comprised of interested stakeholders was convened through three (3) conference calls and multiple e-mail correspondences that were used to develop a draft Work Plan for the Planning Grant-Round 2 Application. The draft Work Plan, all completed attachments, and other materials included within the final Planning Grant Proposal were vetted through the Stakeholders Committee. **Figure 3-4** provides a graphical representation of the past timeline of the IRWM Program.

**Figure 3-4: IRWM Timeline**

| Milestones                                       | 2009 | 2010   |        |        |    | 2011 |    |    |             | 2012   |
|--|------|--------|--------|--------|----|------|----|----|-------------|--------|
|  |      | Q1     | Q2     | Q3     | Q4 | Q1   | Q2 | Q3 | Q4          | Q1     |
| Region Approved through RAP                      | ★    |        |        |        |    |      |    |    |             |        |
| Public Kick-off Meeting                          |      | ★      |        |        |    |      |    |    |             |        |
| Develop Draft IRWM Plan Chapters                 |      | ★<br>★ | ★<br>★ | ★<br>★ |    |      |    |    |             |        |
| Develop Planning Grant-Round 1 Application       |      |        | ★<br>★ | ★      |    |      |    |    |             |        |
| Reconvene for Planning Grant-Round 2 Application |      |        |        |        |    |      | ★  |    |             |        |
| Planning Grant-Round 2 Stakeholder Meetings      |      |        |        |        |    |      |    | ★  | ★<br>★<br>★ | ★<br>★ |
| Planning Grant-Round 2 Workgroup Meetings        |      |        |        |        |    |      |    |    | ★<br>★      | ★      |

***Past and Current Outreach Efforts***

In 2010 and 2011, the RWMG led by BWD initiated a stakeholder outreach process to help support development and adoption of an IRWM Plan. As part of the stakeholder outreach process, the Stakeholders Committee met on October 11, 2011 and completed an exercise to identify all potential stakeholders within the Region. **Table 3-1** below provides a list of identified stakeholders.

**Table 3-1: Identified ABD Stakeholders<sup>1</sup>**

|  |   |
|--|---|
| <i>Agricultural Interests (Agricultural Alliance for Water and Resource Education)</i> | Jacumba Community Services District                               |
| <i>Anza-Borrego Desert State Park</i>  | Lodging Interests*  |
| <i>Anza-Borrego Foundation</i>   | Ocotillo Wells State Vehicular Recreation Area                    |
| <i>Borrego Water District</i>  | Outlying Community: Boulevard                                     |
| <i>Borrego Chamber of Commerce</i>   | Outlying Community: Canebrake                                     |
| Borrego Community Sponsor Group  | Outlying Community: Jacumba                                       |
| Borrego Springs Unified School District  | Outlying Community: Ocotillo Wells                                |
| <a href="#">Cahuilla Band of Mission Indians</a>                                       | <a href="#">Homeowners Associations</a>                           |
| Campo Band of <a href="#">Kumeyaay</a> Indians   | Los Coyotes Band of Mission Indians                               |
| Canebrake County Water District  | Majestic Pines Community Services District                        |
| Commercial Development*  | Manzanita Band of <a href="#">Kumeyaay</a> Indians                |
| <i>County of San Diego</i>   | Residential Development*  |
| <i>Elsinore-Murrieta-Anza Resource Conservation District</i>                           | <i>Resource Conservation District of Greater San Diego County</i> |
| <a href="#">Ewiaapaayp Band of Mission Indians</a>                                     | RV Park Interests*  |
| <i>Golf Course Interests*</i>  | <i>Salton Community Service District</i>                          |
| <a href="#">Iipay Nation of Santa Ysabel</a>   |   |

<sup>1</sup> Those stakeholders identified in italics currently participate on the Stakeholders Committee.

\*It was noted that these groups do not have a cohesive group of aligned interests at this time.

In order to facilitate a robust stakeholder process, the DWR Regional [Service Representative](#) requested that DWR, through a separate contract with the Center for Collaborative Policy (CCP), provide facilitation services to the ABD IRWM stakeholders. Please note that because this work is being completed through DWR, this work is not included within the overall Budget (refer to Attachment 4). Additionally, this effort captured a limited number of preliminary meetings and stakeholder contacts; as such, ongoing outreach is needed and included in Task 1 of this Work Plan.

The request, granted by DWR [Southern Region Office](#), included a scope of work with two phases. During Phase 1, CCP conducted interviews of potential stakeholders in the Region to determine the feasibility of providing facilitation services in support of an ABD IRWM Plan. Questions included:

1. Will stakeholders from the key organizations in the Region participate in IRWM planning in order to make it a legitimate process?
2. What are the main water issues and challenges that need to be addressed in the IRWM Plan?
3. Will the region be successful in addressing those issues in spite of obstacles that might derail development of the IRWM Plan?

In addition, RMC-WRIME, through a separate contract with DWR, would take part in the relevant interviews and conduct additional research to ascertain the status of technical information, determine

technical needs, and determine the feasibility of providing technical support to assist in the drafting of the ABD IRWM Plan.

The summary report produced by CCP following the stakeholder interviews determined that a robust stakeholder process that supports IRWM planning is feasible. The summary report resulted in four (4) major recommendations for the ABD Region. The questions (presented in italics) and their relative recommendations and/or results (presented in bold) are summarized below:

- *Is it possible for the ABD IRWM Region to convene a group of stakeholders representing appropriate agencies, interest groups, and businesses to draft an IRWM Plan for the region?*

Stakeholder interviews confirmed that stakeholders are potentially committed to participating in the preparation of the ABD IRWM Plan, including ABD State Park, agriculture interests, golf interests, business interests, and non-governmental organizations. **An effort should be made to identify other possible stakeholders and include them in the IRWM planning process as they may have timely issues that also need to be addressed.**

- *Is it reasonable to assume that the stakeholders will work together toward the goal of producing a viable IRWM Plan?*

While some interviewees noted that it may be challenging to get stakeholders to communicate with each other and work together toward a common goal, most interviewees expressed optimism that in spite of the differences of opinion, stakeholders can work together and compile a successful IRWM Plan. **This process will likely require education of the public about regional water issues, and some facilitation during solution-seeking processes.**

- *Is it economically feasible for DWR to provide facilitation from CCP for the Borrego IRWM Plan development effort?*

**Yes, however due to distance and travel time associated with attending meetings in the Borrego IRWM Region, it is recommended that contracts include cost-saving provisions.**

- *Is it feasible for a consultant team to conduct additional research to ascertain the status of technical information, determine technical needs, and provide technical support to assist in developing the ABD IRWM Plan?*

**Yes, it is feasible to conduct additional research; however there are recommended steps to expedite this process:**

- Collect available technical data and information about the Borrego Valley Groundwater Basin and other regional groundwater basins.
- Review existing literature and information.
- Develop an impartial understanding of the state of the region's groundwater basins from a scientific perspective.
- Identify and describe gaps in the data, information, and analysis.
- Work with stakeholder representatives to develop a consensus on the scale of Region's groundwater issues and the state of the Region's basins.
- Develop a work plan that identifies potential options to address identified issues.

Based on the recommendations presented above, DWR is pursuing Phase 2, also through a separate contract with CCP, to continue to facilitate stakeholder meetings and help engage stakeholders during the development of the ABD IRWM Plan. *Additional IRWM Plan Work*, below, provides further discussion of the planned scope of work for Phase 2.

### ***Governance Structure***

The ABD Region strives to maintain transparency in all IRWM-related activities, and therefore has an organizational (governance) structure that functions as a “bottom-up” process where stakeholders feed information and input up through the RWMG, who is responsible for considering stakeholder input when making informed decisions for the Region. **Figure 3-5** below provides a graphical representation of the Region’s existing bottom-up governance structure.

**Figure 3-5: Existing Bottom-Up Governance Structure**



### ***Regional Water Management Issues***

In October 2011, stakeholders participated in an exercise with a professional facilitator from CCP through which they identified “big” (key) issues within the Region. During this process, stakeholders unanimously identified four key issues:

1. water supply,
2. water quality,
3. flood control, and
4. environmental integrity.

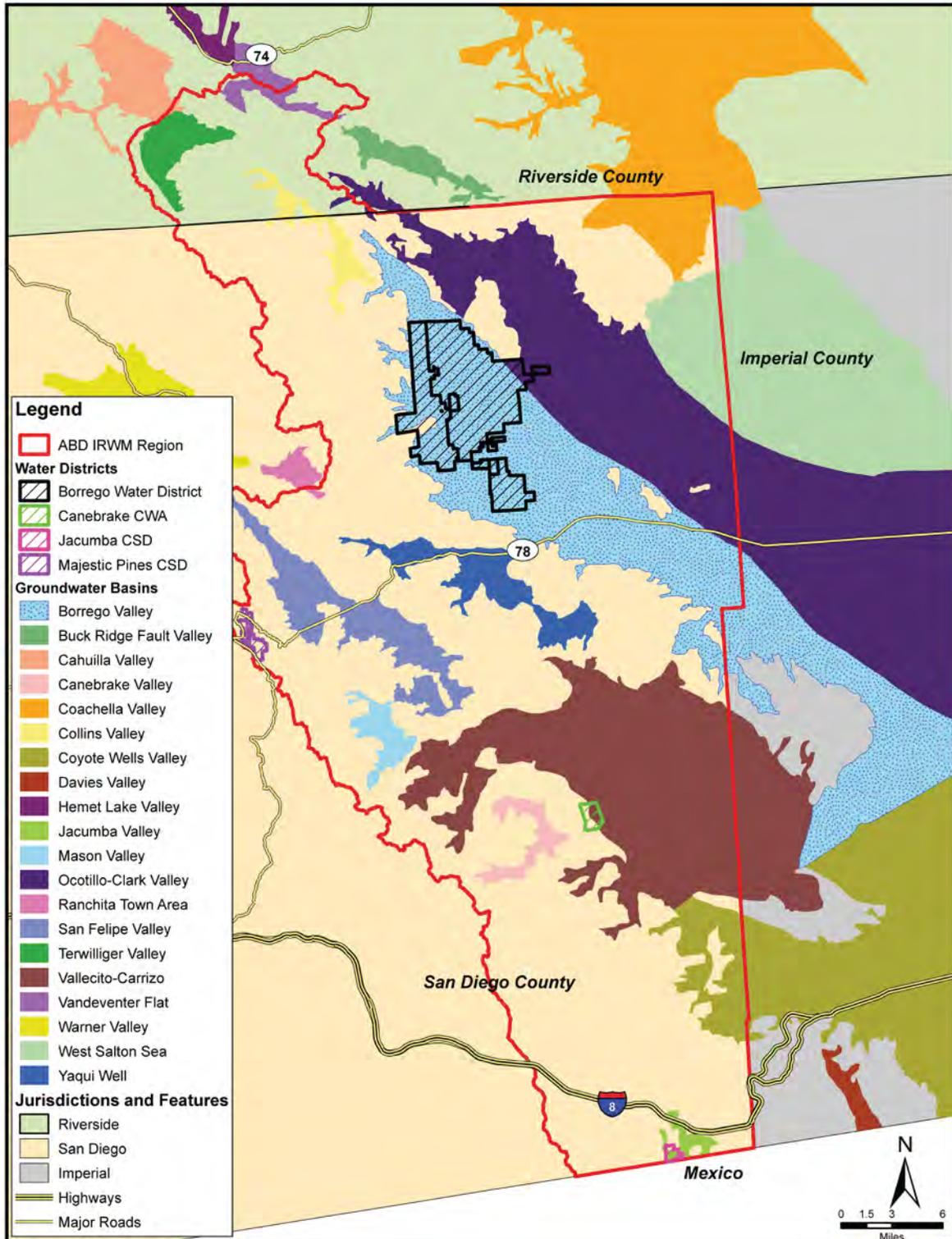
Stakeholders unanimously identified water supply as the Region’s most important issue among the four identified key issues. While the issue of environmental integrity was not formally defined within this process, stakeholders agreed that due to the importance of the State Park to the Region, water-related issues potentially affecting the natural environment (particularly within the State Park) should be considered.

The following includes an overview of each of the four regional issues identified by stakeholders. Background information is also provided regarding climate change, which is an emerging issue not previously addressed within the region and included in the scope of this Work Plan.

*Water Supply*

Usable water supply within the Region is solely sourced from groundwater basins. Within the Region, runoff from surrounding mountain watersheds recharges local groundwater basins, which are then accessed from multiple locations via pumping. There are many groundwater aquifers within the Region; however the Borrego Valley Groundwater Basin (Basin 7-24 per DWR Bulletin 118) supplies water to the majority of the Region's residents (refer to **Figure 3-6**). The Borrego Valley Groundwater Basin is composed of three distinct aquifers: the Upper, Middle, and Lower aquifers.

Figure 3-6: Groundwater Basins within the ABD IRWM Region



DWR Bulletin 118, 2004



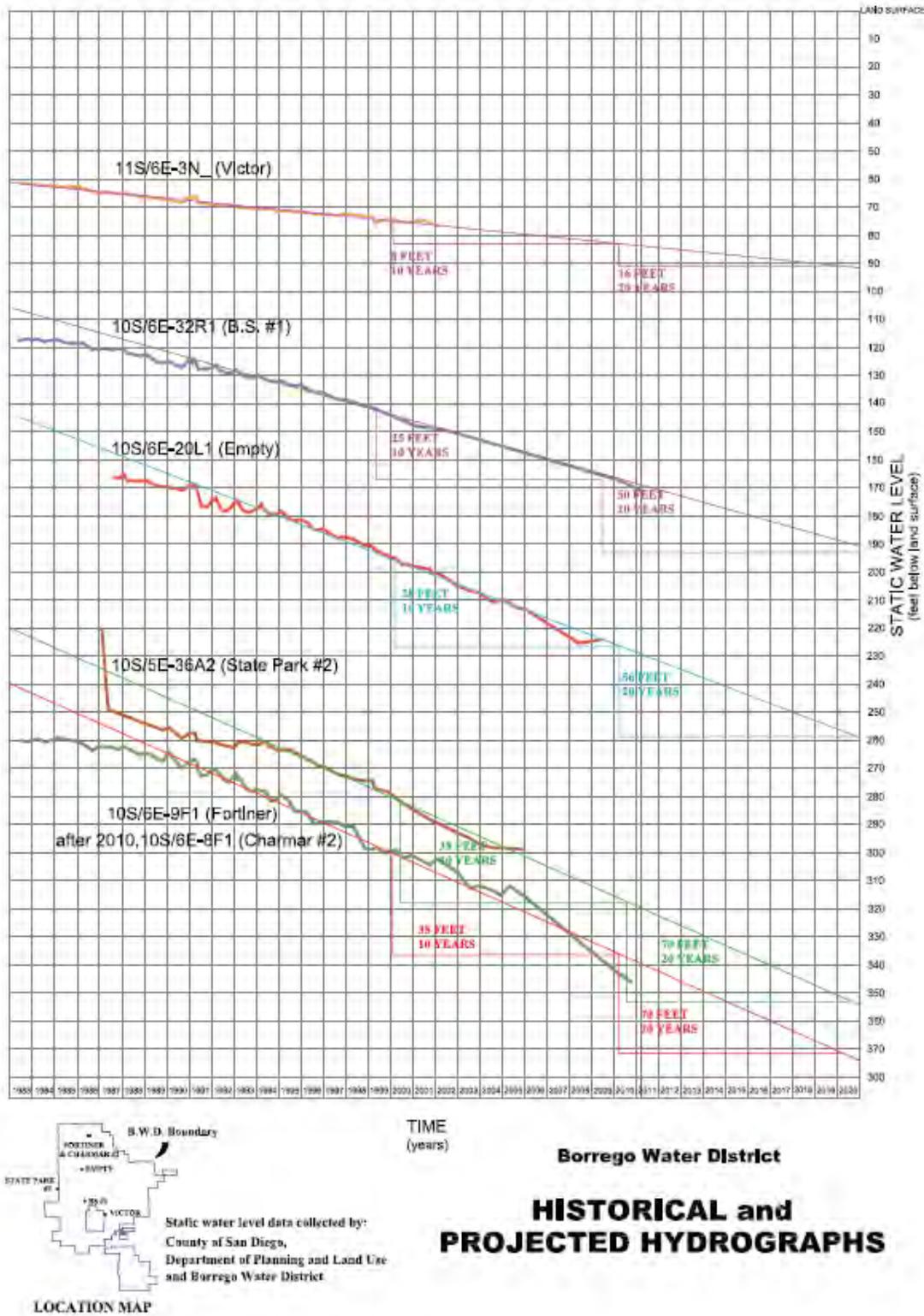
The Region's groundwater basins, particularly the Borrego Valley Groundwater Basin, are in a state of overdraft. According to the County of San Diego General Plan Update, the estimated usable life of the Upper Aquifer of the Borrego Valley Groundwater Basin under existing conditions is approximately 50 to 100 years (County of San Diego 2011). Stakeholders within the region have concerns about this useful life of the aquifer. According to recent modeling by [the U.S. Geological Survey \(USGS\)](#), if present overdraft levels continue unabated there may be only 50-years until the Upper Aquifer is dewatered. There is concern groundwater availability and quality may deem the [Borrego Valley's](#) lower groundwater aquifers unusable from an economic standpoint.

*Despite the potentially dire situation of the Region's main water supply source, the Region has not yet reached consensus regarding the status of the Region's groundwater basins.*

Available groundwater within the Borrego Valley Groundwater Basin is currently sourced mainly from the Upper Aquifer (County of San Diego 2010). Hydrogeological information regarding the Borrego Valley Groundwater Basin suggests that it is not known at this time whether it is economically viable to pump groundwater from the Middle and Lower aquifers due to their depth and the quality of groundwater that can be obtained on a continuous basis. For example, if groundwater from this depth contains large amounts of fluorides or other contaminants, expensive tertiary treatment may be required for all purposes, including irrigation and municipal uses (County of San Diego 2010). Due to the fact that groundwater does not currently require this level of treatment, the [Borrego Valley](#) would be required to install costly treatment facilities that would substantially increase the cost of local water supply. In addition, pumping from lower depths would likely increase pumping costs by a substantial amount. Given that almost the entire Region qualifies as a DAC, it is unlikely that it would be economically viable for [Borrego Valley pumpers](#) to rely on groundwater that requires high levels of treatment or requires a substantial increase in pumping costs. Therefore, although groundwater exists within the Middle and Lower Aquifers of the [Borrego Valley's](#) groundwater basins, there is substantial and justified concern throughout the Region that this water may not be viable from a technical or economic perspective. Since groundwater within the Upper Aquifer is likely the most economically and technically feasible existing water resource for the [area](#), it is imperative that this water resource is appropriately and sustainably managed now, especially given that this resource likely has less than 50 years of availability at current withdrawal rates according to the most recent USGS work (see [Task 2.1](#) below).

~~Figure 3-7 provides [historical and projected hydrographs of the Borrego Valley Groundwater Basin from 1983 to 2020](#). This graphic demonstrates past and potential future declines in local groundwater levels within various sampling points throughout the basin. a visualization of the hydrogeology of the Borrego Valley Groundwater Basin. Please note that this figure provides a graphical representation of the Borrego Valley Groundwater Basin and is meant for information purposes only; this figure does not constitute an accurate representation of the Region's groundwater levels.~~

Figure 3-7: Hydrogeology-Historical and Projected Hydrographs of the Borrego Valley Groundwater Basin



Despite the importance of groundwater supplies and the potentially dire situation of the Region’s main water supply source (the Borrego Valley Groundwater Basin), the Region has not yet reached consensus regarding the current and future status of the groundwater basins.

DWR has also recently initiated, through its [Southern Region Office](#) and a separate contract with RMC-WRIME, development of the [ABD Region Summary](#). This [effort](#) will analyze existing information about the Region’s groundwater basins to document the past, present, and range of foreseeable future conditions within the local groundwater basins ([Borrego Valley Groundwater Basin and outlying basins](#)). Through a stakeholder-driven process, the [ABD Region Summary](#) will help achieve consensus among the Region’s stakeholders regarding current and future projected land use assumptions, water demands, and groundwater basin characteristics. As the [ABD Region Summary](#) will rely on existing information, it will compile known data regarding the existing groundwater supply and demand, given that information regarding these parameters is available and agreed upon by stakeholders. As such, this [effort](#) will produce a common understanding of the existing status of the Region’s groundwater basins, and will not produce future modeling of groundwater levels or groundwater quality. *Additional IRWM Plan Work*, below, provides further discussion of the planned scope of work for the [ABD Region Summary](#).

While the [ABD Region Summary](#) and other ongoing groundwater planning efforts will provide useful groundwater management data, they do not include development of alternatives that could be implemented to ensure groundwater is sustainably managed within the [Borrego Valley](#). As such, work included within this Work Plan (refer to **Task 2-1 and Task 2-2 of this Work Plan**) aims to fill this gap and move the [area](#) towards developing alternatives that can be implemented to achieve sustainable groundwater management.

#### *Water Quality*

As described above, the Region’s groundwater basins, in particular the Borrego Valley Groundwater Basin, are in a state of overdraft. As the Region’s groundwater basins are dewatered (under existing conditions), it is possible that water quality issues will arise. According to Bulletin 118 from DWR, the Borrego Valley Groundwater Basin is currently impacted by total dissolved solids (TDS) and also potentially by nitrates (DWR 2004). Information from local stakeholders suggests that nitrates, inorganic compounds, and other byproducts from the Region’s agricultural industry may exist at high concentrations within certain portions of the groundwater basins. Therefore, there is concern that as the Region’s groundwater basins become dewatered, water quality conditions will change, and a greater amount of the Region’s groundwater supply will be impacted by water quality issues. Given that the [Borrego Valley’s](#) existing groundwater from municipal water wells used to supply potable water does not exceed maximum contaminant levels set by regulators, if water quality issues were to arise, they would potentially require that [BWD and/or other pumpers](#) implement costly water treatment systems that are not currently in place. As such, water quality impacts could have a substantial economic impact within the [area](#), by potentially rendering groundwater prohibitively expensive depending on the level of water treatment required. This concern is especially serious given the economic demographics of the Region and the fact that the majority of the Region qualifies as a DAC.

Therefore, this Work Plan contains activities that will lead the Region towards a better understanding of groundwater quality by assessing how water quality may change as the Region’s groundwater basins are dewatered (refer to **Task 2-3 of this Work Plan**).

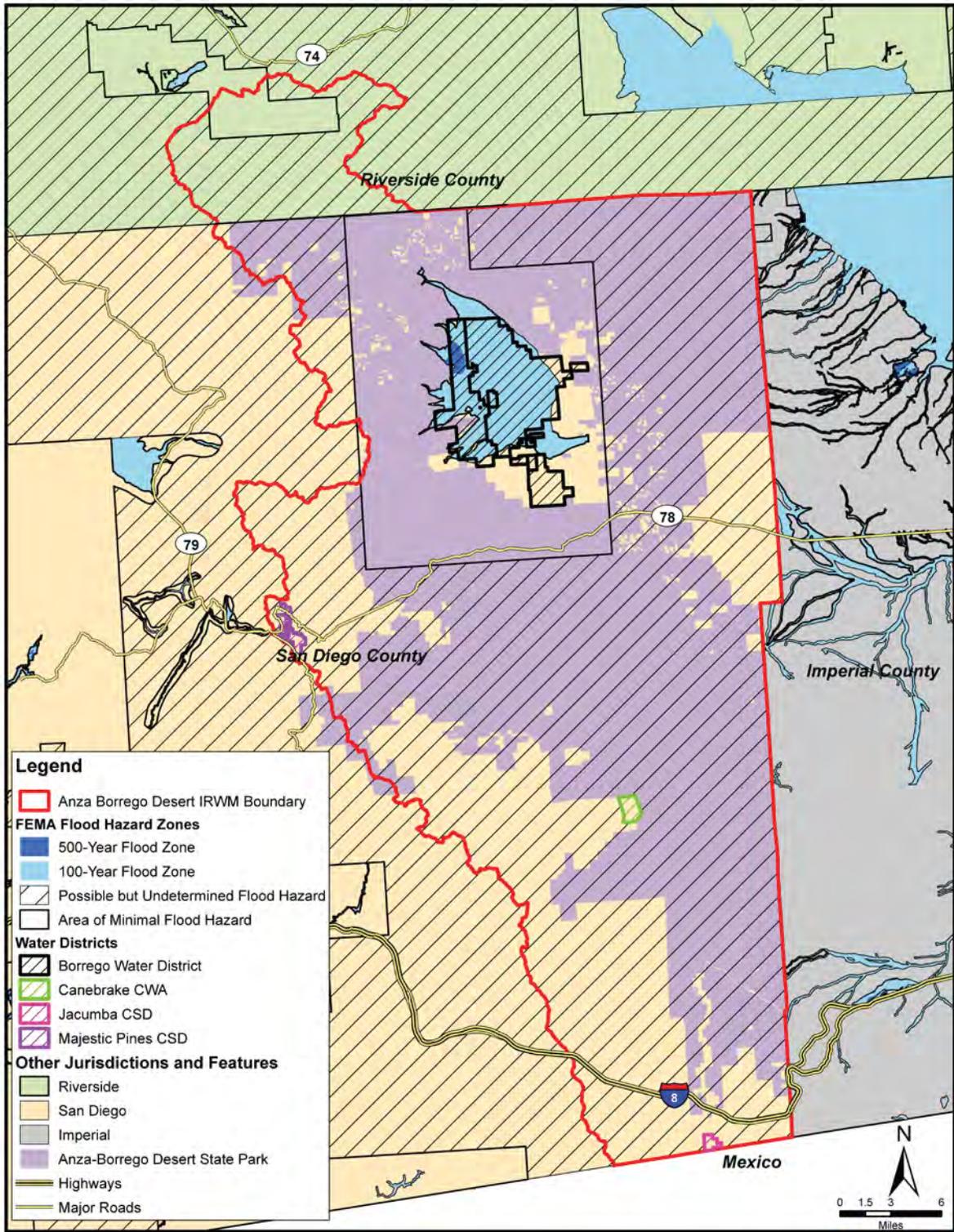
#### *Flooding*

In October 2011, stakeholders identified flood control as a key issue within the Region. In particular, stakeholders noted that flood-based development restrictions have harmed the Region’s economy, because the County of San Diego currently restricts development in certain portions of the Region that have mapped flood risks according to the Federal Emergency Management Agency (FEMA). As such,

there is an economic impetus for implementing flood control measures, because such measures may alleviate development restrictions and provide benefits to the Region’s economy (refer to **Figure 3-8** for an overview of the current flood areas mapped by FEMA). The purpose of flood-related development restrictions is to avoid damages to structures and property during flood events, which has been a substantial issue in the Region. For example, a 2010 study conducted by the United States Army Corps of Engineers (USACE) indicates that the total damage incurred to the Borrego Springs area alone due to a 100-year flood event is over \$29 million (USACE 2010).

Despite the importance of flood control within the Region, the Region has not undertaken an analysis of potential alternatives that could be developed to alleviate flood issues. Therefore, **Task 3-4 of this Work Plan** includes analysis that will assess adaptation strategies that will assess flood control, specifically as it relates to climate change.

Figure 3-8: Currently Mapped Flood Areas according to FEMA



SANGIS, 2009 and SANDAG, 2009  
 FEMA, 2009

**RMC**

### *Environmental Integrity*

“Environmental integrity” embraces the concept that the Region and its vast array of environmental resources must be protected by ensuring their sustainability. Sustainable water use does not harm ecosystems, degrade water quality, or compromise the ability of future generations to meet their own needs.

Information from the County indicates that groundwater overdraft, flooding, and other water management issues have resulted in environmental integrity issues in the Region. Specifically, overdraft of the Borrego Valley Groundwater Basin, in conjunction with recent droughts, has caused substantial loss to important biological resources such as sensitive plant and animal species within the State Park (County of San Diego 2011). If the Region’s groundwater basins continue to be dewatered and lose viability, it is possible that biological resources, such as those within the State Park will continue to be impacted. Furthermore, if groundwater overdraft were to impact groundwater quality, biological resources and other environmental resources within the Region could be further impacted. In addition, stakeholders have indicated that flooding has the potential to damage the environmental integrity of the Region through erosion and siltation that impact the Region’s ecosystems. Such environmental integrity issues could result in potentially large adverse economic impacts to the considerable annual revenues generated for the Region from tourists visiting the State Park and frequenting the resorts and winter homes in the region.

Due to the importance of environmental integrity and the nexus between this issue and the other key issues (water supply, water quality, and flooding), **Tasks 2-2, 2-3, and 2-4 in this Work Plan** have components (specific subtasks) that address this issue.

### *Climate Change*

DWR’s IRWM Grant Program Guidelines, which will guide development of the ABD IRWM Plan, contain specific and substantial requirements regarding climate change. Specifically, DWR requires that IRWM plans address both adaptation to the effects of climate change and mitigation of greenhouse gas emissions. While many generalized climate change studies have been completed throughout the State of California, no climate change vulnerability analyses or other specific climate change analyses have been completed for the Region.

Due to the Region’s reliance on groundwater supplies, climate change analyses will need to assess potential climate change-related impacts to this critical regional resource. A 2010 paper written by scientists from the Massachusetts Institute of Technology indicates that climate change is anticipated to impact annual recharge rates, which would therefore impact the Region’s water balance and potentially reduce the usable lifetime of the Borrego Valley Groundwater Basin (Gene-Hua et al 2010). In addition, an existing report from DWR entitled *Water and Border Area Climate Change – An Introduction* provides an overview of potential impacts that may arise within the United States-Mexico Border Region (within which the ABD Region lies) as a result of climate change (DWR 2008). This report indicates that monsoons originating in the Gulf of Mexico, which currently cause flash flooding within the Region, could intensify with climate change (DWR 2008).

Due to the potential impact that climate change may have on issues already identified as important within the Region (water supply and flooding), **Task 3-4 in this Work Plan** includes a climate change analysis which will assess Region-specific climate change vulnerabilities and consider adaptation strategies that may be adopted to address such vulnerabilities.

## 2. Current Status in Meeting IRWM Plan Standards

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As described previously, the ABD IRWM planning process was initiated by the RWMG in January 2010 via a Public Kickoff meeting. Subsequent to that, all interested participants were organized into a Stakeholders Committee. Monthly meetings of both the RWMG and the Stakeholders Committee were immediately initiated and work began on developing an IRWM Plan. As of August 2011, portions of the IRWM Plan have been completed in draft form.

While the Draft IRWM Plan provides a substantial starting point, it was not completed, finalized, or adopted by the RWMG agencies or the Stakeholders Committee. These groups have determined that additional work, in addition to increased stakeholder and public outreach, and revisions to the Draft IRWM Plan are needed prior to adoption. In addition, the IRWM Plan must be updated in compliance with DWR’s IRWM Grant Program Guidelines in order to be eligible for future rounds of Proposition 84 or Proposition 1E grant funding. As such, this Work Plan includes the tasks necessary to complete an IRWM Plan that is compliant with current DWR standards, and approved by the RWMG and the Stakeholders Committee.

The IRWM Grant Program Guidelines include sixteen (16) specific standards that must be met by the IRWM Plan. **Table 3-2** provides a summary of revisions that need to be made to the existing Draft IRWM Plan to meet standards set within the Guidelines. In addition, Table 3-2 provides information regarding whether or not given revisions or work will be covered by funds requested as part of this Planning Grant Proposal. Any necessary work not contained within the *Grant Work Plan* is described in within *Additional IRWM Plan Work*.

**Table 3-2: Revisions Needed for the IRWM Plan**

| IRWM Plan Sections (DWR 2010)              | Draft IRWM Plan Section (2010)   | Revisions and Work Needed  | Work Plan Task Addressing IRWM Plan Section | Covered by DWR Planning Grant? |
|--|--|--|---|--------------------------------|
| <b>Governance</b>                          | Section 1, Governance  | Expand discussion of governance structure, public noticing, Plan adoption, decision-making, and collaborative process                                    | Task 1, Task 3-1                            | Partially                      |
| <b>Region Description</b>                  | Section 2, Description of Region   | Refine description of regional description based on new/updated information about the Region   | Task 1, Task 2, Task 3-6                    | Partially                      |
| <b>Objectives</b>                          | Section 3, Goals, Objectives, and Targets                                | Expand discussion of process used to determine objectives  | Task 3-2                                    | Yes                            |
| <b>Resource Management Strategies</b>      | Section 4, Resource Management Strategies Identification and Integration | Expand discussion of process used to identify resource management strategies for IRWM Plan   | Task 3-6                                    | Yes                            |
| <b>Integration</b>                         | Section 4, Resource Management Strategies Identification and Integration | Expand discussion of stakeholder/institutional and project integration   | Task 1, Task 3-6                            | Yes                            |
| <b>Project Review Process</b>              | Section 5, Project Review Process  | Expand discussion of project submittal, funding application prioritization, and modification   | Task 3-2                                    | Yes                            |
| <b>Impact and Benefit</b>                  | Section 6, Impact and Benefits   | Expand discussion of the impacts and benefits of program implementation  | Task 3-6                                    | Yes                            |
| <b>Plan Performance and Monitoring</b>     | Not completed  | Determine discussion of methods to evaluate Plan performance   | Task 3-4                                    | Yes                            |
| <b>Data Management</b>                     | Not completed  | Determine the IRWM data management system  | Task 3-3                                    | Yes                            |
| <b>Finance</b>                             | Not completed  | Evaluate potential sources and certainty of funding  | Task 3-1                                    | Yes                            |
| <b>Technical Analysis</b>                  | Not completed  | New discussion of technical information, analysis, and methods   | Task 3-3                                    | Yes                            |
| <b>Relation to Local Water Planning</b>    | Not completed  | New discussion of relation to local water and flood management planning  | Task 3-5                                    | Yes                            |
| <b>Relation to Local Land Use Planning</b> | N/A  | New discussion of relation to local land use planning, relationships between water managers and planners, and proactive efforts to improve relationships | Task 3-5                                    | Yes                            |
| <b>Stakeholder Involvement</b>             | Section 2, Description of Region   | Expand discussion of process used to engage stakeholders and DACs, decision-making process, and information access                                       | Task 1, Task 2, Task 3 (all subtasks)       | Partially                      |
| <b>Coordination</b>                        | Section 2, Description of Region   | Expand discussion of coordination with State and federal agencies, as well as interregional IRWM partners  | Task 1, Task 2, Task 3 (all subtasks)       | Yes                            |
| <b>Climate Change</b>                      | N/A  | New discussion of climate change, anticipated implications and effects, and mitigation opportunities   | Task 2-3, Task 3-6                          | Yes                            |

### 3. Grant Work Plan

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#### Task 1: Stakeholder Outreach & Program Administration

##### Task 1-1: Stakeholder Outreach (Including DACs and Tribes)

Establishing a common understanding and support for the IRWM Plan among key stakeholders is critical to the success of the ongoing program. As the program moves forward, it will be important to do what is possible to increase stakeholder engagement through increased attendance and participation in stakeholder meetings. It will be especially important to increase outreach to stakeholders that have been previously contacted, but have not yet officially participated in the IRWM program or the Stakeholders Committee.

The following are specific subtasks that will be completed as part of Task 1-1:

##### Subtask 1-1.1: Increase and Sustain Stakeholder Involvement

Stakeholder outreach will continue to involve announcing and posting agendas, minutes, and other items of the stakeholder meetings on the BWD website. Additionally, all meetings and materials will continue to be sent to the IRWM stakeholder email distribution list. Following are specific ongoing outreach activities that will take place in support of the IRWM program process and IRWM Plan implementation.

The RWMG will conduct follow-up activities to the stakeholder outreach that has been completed to date. Specifically, the RWMG will hold up to six (6) public workshops throughout development and completion of the IRWM Plan. These meetings will coincide with IRWM Plan milestones, and will be held at various locations throughout the Region. The workshops are intended to reach out to and solicit input from stakeholders and organizations that are not able to participate in regular Stakeholders Committee meetings. The workshops will be held throughout the Region as appropriate, and will be held at times best suited to obtain maximum stakeholder involvement. Emphasis will be placed on receiving input from stakeholders rather than solely educating participants about the IRWM program. Two (2) of these workshops will be specifically directed toward receiving input on the Public Draft IRWM Plan.

In addition, this task will include activities such as contacting stakeholders by phone and by email to notify them about upcoming IRWM activities and solicit participation in public workshops. In addition, existing stakeholder outreach being conducted by CCP will produce directed outreach strategies that the Region can employ to increase stakeholder involvement. While these specific outreach strategies have not yet been identified, it is anticipated that they will include refining the existing stakeholder list and presenting IRWM-related materials at community organization meetings. In addition, directed outreach will include producing up to six (6) newsletters that can be distributed electronically and in-person at meetings, and development of periodic press releases that will be sent to local news publications such as the Borrego Sun, Anza-Borrego State Park Magazine, Julian News, High Country Journal, and other local news sources to notify community members about upcoming public workshops on IRWM planning topics. The purpose of these stakeholder outreach efforts is to support sustained stakeholder participation throughout development of the Public Draft IRWM Plan.

##### Subtask 1-1.2: Increase and Sustain Involvement from DAC and Tribal Entities

Specific targeted outreach efforts will also be conducted to groups and individuals representing DAC and tribal interests. Outreach efforts will include contacting identified DAC and tribal stakeholders by phone and by email to notify such stakeholders about upcoming IRWM activities and solicit participation in public workshops. Outreach efforts will also include refining the existing list of DAC and tribal contacts to ensure that all interested DAC and tribal communities and their representatives are included. Outreach will also include up to four (4) meetings to be held in DAC or tribal areas; these meetings will be structured to facilitate direct coordination with DAC and tribal entities to identify their major water-related issues and priorities. These meetings will result in the development of text that will be

incorporated into the IRWM Plan to characterize DAC and tribal communities and their water management needs.

Lastly, development of the IRWM Plan and other ABD IRWM-related activities involve a Stakeholders Committee that is discussed in detail in Task 1-2. Due to the importance of DAC and tribal communities within the Region, directed outreach via telephone calls and e-mails, will be conducted prior to Stakeholders Committee meetings to encourage participation among DAC and tribal representatives.

***Other Studies or Work Products to be Utilized***

- Work completed by CCP under DWR’s Facilitation and Technical Support Contract (see *Additional IRWM Plan Work*).

***Deliverables***

- Refined electronic distribution list, specifically updated with DAC and tribal entities, with contact phone numbers to provide for follow-up communication;
- Up to six (6) public workshops on IRWM planning topics, including agendas, presentations, handouts, and notes. Two (2) of these public workshops will be directed toward receiving input on the Public Draft IRWM Plan document.
- Periodic updates of the IRWM website (hosted on BWD’s website);
- Up to six (6) newsletters that will be provided to stakeholders to update them on the IRWM Planning Process;
- Periodic press releases submitted to the Borrego Sun and other local news sources as appropriate;
- Identification and implementation of directed outreach strategies such as presentations and outreach at community organization meetings; and
- Up to four (4) DAC and tribal outreach meetings, including agendas, presentations, handouts, and notes; and
- Draft and final IRWM Plan section articulating DAC and Tribal water-related issues and their respective water management needs.

**Task 1-2: RWMG / Stakeholders Committee Meetings (Including DACs and Tribes)**

As stated above, the RWMG for the ABD Region is comprised of BWD, the County, and the RCD. These entities will continue meeting on a regular basis throughout development of the IRWM Plan. In addition, the Stakeholders Committee, which is currently open to all interested stakeholders, is an important component of the IRWM planning effort as they provide input directly to the RWMG (refer to Figure 3-5). The Stakeholders Committee will continue to meet on a regular basis throughout development of the IRWM Plan, and will discuss specific IRWM-related topics such as deliverables associated with the Regional Water Resources Plans (refer to Task 2) and the ABD IRWM Plan (refer to Task 3). The purpose of this task is to maintain agency and stakeholder involvement to uphold the Region’s current and anticipated future governance structure.

The following are specific subtasks that will be completed as part of Task 1-2:

**Subtask 1-2.1: RWMG Meetings**

The RWMG is responsible for ongoing management of the IRWM program. The RWMG will meet on an approximately monthly basis. These meetings will generally occur via conference calls. These meetings are critical to maintaining ongoing communication among RWMG members throughout the implementation of Stakeholder Outreach (Task 1-1), and development of the Regional Water Resources Plans (Task 2), and of the IRWM Plan Update (Task 3). A majority of the RWMG meetings will involve IRWM Plan development and outreach activities. These meetings will be the primary opportunity for the RWMG agencies to provide in-kind contributions and assistance to the development of the IRWM Plan

and related efforts. This task will involve continued support of the RWMG meetings, including preparation for, facilitation of, and participation in monthly RWMG meetings.

#### **Subtask 1-2.2: Stakeholders Committee Meetings including DACs and Tribes**

Due to the importance of continuing participation and information sharing with regional stakeholders, Stakeholders Committee meetings will be held on a monthly or bi-monthly (every other month) basis throughout the time frame of IRWM Plan development (from 2012 - 2014). Despite the presence of DACs and tribal groups within the Region, the Stakeholders Committee does not currently contain members that represent specific DAC or tribal interests. Therefore, as described under Task 1-1, work will be conducted to increase DAC and tribal participation in Stakeholders Committee meetings. As part of these efforts, the RWMG will work with DAC and tribal entities to schedule Stakeholders Committee meetings, and will hold meetings in locations preferable to these groups as practical.

Half of the Stakeholders Committee meetings will take place in person, and half will be held via conference call and/or webinar. The in-person meetings will be held at the BWD headquarters in Borrego Springs or at alternate locations throughout the Region to accommodate other stakeholders, particularly DAC and tribal representatives. Agendas for these meetings will be prepared and distributed in advance to each person listed on the stakeholders list and on the BWD (IRWM) website. A conference line will be provided so that stakeholders that cannot attend in-person can participate via conference call. As necessary, webinars will be utilized to allow for presentations to occur during conference calls.

Stakeholders Committee meetings will be scheduled to coincide with the development of important IRWM Plan topics including governance and financing, goals, objectives, and priorities, metrics, targets, and reporting process, and the nexus between land use and water planning. As such key topics essential to IRWM planning in the Region are developed, the Stakeholders Committee will be asked to provide input and feedback to the RWMG to ensure that these important topics are vetted through the Region's stakeholders. In addition, the Stakeholders Committee will be asked to review and provide feedback on the Public Review Draft IRWM Plan.

#### ***Other Studies or Work Products to be Utilized***

- Work completed by CCP under DWR's Facilitation and Technical Support Contract (see *Additional IRWM Plan Work*).
- Refined electronic distribution list with contact phone numbers to provide for follow-up communication. Please note that the electronic distribution list will be created as part of Task 1-1, and will include specifics regarding DAC and tribal stakeholders.

#### ***Deliverables***

- Agendas, materials, handouts, and meeting notes for RWMG meetings (up to 24 meetings).
- Agendas, materials, handouts, webinars, and meeting notes for Stakeholders Committee meetings (up to 24 meetings).

#### **Task 1-3: Coordination with other IRWM Regions**

This task includes outreach to and coordination with neighboring IRWM regions within the Colorado River Funding Area, as well as neighboring IRWM regions within other funding areas. The goal of this outreach is to establish a coordination meeting that occurs up to three times per year between the four existing regions within the Colorado River Funding Area (Imperial, Coachella Valley, Mojave, and Anza Borrego Desert) to discuss common planning issues, results of regional planning studies, and possibly distribution of the available remaining Proposition 84 funding. In addition, this task will serve to provide a forum for discussing any joint project opportunities and/or project conflicts with neighboring IRWM regions, particularly those within adjacent or overlapping watersheds.

### ***Other Studies or Work Products to be Utilized***

- IRWM Plans for neighboring regions, as appropriate.

### ***Deliverables***

- Targeted outreach (emails, telephone calls) to neighboring IRWM regions;
- Agendas, materials, and handouts, and meeting notes for Inter-Regional Coordination meetings (up to 6 meetings).

## **Task 2: Regional Water Resources Plans**

Due to the importance of the four key issues within the Region (refer to *Introduction*), it is essential that they are properly addressed and included within the IRWM Plan. Therefore, the following tasks outline regional water resources plans that aim to address each of the four key issues. Water supply (groundwater) is addressed in Task 2-1 and Task 2-2, and water quality (groundwater quality) as it relates to changes in groundwater levels is addressed in Task 2-3. Task 2-4 addresses climate change, which is a substantial component of DWR’s Guidelines for IRWM Plans. In addition, because climate change is anticipated to substantially impact flood control and environmental integrity, Task 2-4 also includes specific components that analyze how climate change will impact these key issues. Tasks 2-2 and 2-3 also include components that address environmental integrity as it relates to groundwater supply and groundwater quality.

### **Key Regional Issues Identified by Stakeholders:**

- Water supply;
- Water quality;
- Flood control; and
- Environmental integrity.

### **Task 2-1: Characterization of Current Regional Water Supply**

The USGS and BWD will work together on a planning study that aims to provide an improved understanding of hydrogeology and water availability of the Borrego Valley. Many studies have been completed on groundwater in the Borrego Valley, which have documented long-term groundwater level reductions due to groundwater pumping. The USGS has produced several studies and models on groundwater in the Borrego Valley, the eldest of which is from 1945, and the newest of which is from 1988. Due to the age of the existing USGS studies and models, the fact that conditions have changed in recent decades, and the potentially dire state of groundwater in the Borrego Valley, there is a pressing need to increase understanding of the existing and future projected conditions of this important water supply source.

The *Evaluation of Ground-Water Conditions and Land Subsidence in the Borrego Valley, California*, includes a total of five (5) tasks, which will ultimately result in development of a groundwater flow and land subsidence model. Recent efforts (in 2009-2011) have focused on gathering groundwater and subsidence data that will enhance the ABD IRWM Plan. Further work to be completed as part of this Study (in 2012) will complete model development and preparation of the final report.

The objective of Task 2-1 is to improve the understanding of groundwater conditions and land subsidence in the Borrego Valley and to incorporate that information into the ABD IRWM Plan. This task represents an important first step in managing groundwater within the Borrego Valley, and will lay the foundation for development of a groundwater flow model that will provide a tool to help evaluate and manage the Region’s groundwater resources.

In order to facilitate stakeholder input for the model run scenarios developed by USGS as part of the planning study, a Community Advisory Committee was established in October 2011. This committee met over the course of four months to determine a list of possible model run scenarios to submit to the USGS. These scenarios would take into account various possible future water usages based on several components developed by the committee. During this period, the committee interviewed representatives

from the Borrego Springs Community Sponsor Group and the Golf Course Association. In addition, the committee received input from members of the agricultural community through a questionnaire that was prepared and distributed to individuals representing agricultural interests. The scenarios picked by the committee are as follows:

- Scenario #1 - No change in water use;
- Scenario #2 - Low population growth with 25% less recreational and 50% less agricultural usage;
- Scenario #3 - Medium population growth with 50% less recreational and 75% less agricultural usage;
- Scenario #4 - High population growth, based on San Diego County predictions with 50% less recreational and 100% less agricultural usage; and
- Scenario #5 - Reduction of all water usage to natural replenishment value of 4,800 acre feet per year.

<< Jerry to provide write-up of USGS Citizen's Advisory Committee and their role. >>

<< Jerry to confirm with USGS any necessary revisions in work plan for this study. >>

The following are specific subtasks that will be completed as part of Task 2-1:

#### **Subtask 2-1.1: Compilation of Available Hydrogeologic Data**

This subtask will involve compiling and assembling data, including: climate, streamflow, water-level, landuse, crop-use, well logs, geophysical logs, geologic maps, hydrologic boundaries and watersheds, waste-water discharge, geodetic, and natural discharge data. Said data will be assembled into a Geographic Information System (GIS) database for manipulation and analysis on a geographic level.

Data will be sourced from previous studies by Moyle (1982), Mitten et al (1988), Netto (2001), and Henderson (2001), as these studies include recent information regarding the hydrogeologic units, recharge, discharge, groundwater levels, and groundwater flow of the Borrego Valley.

The GIS database will be preliminary in that it is compiled from existing data, and will be updated and revised throughout the study as new information is collected. The GIS database will be the basis for a three-dimensional, hydrogeologic framework and flow model of the aquifer system that will be completed in subsequent phases of the study (described in *Additional IRWM Plan Work*).

#### **Subtask 2-1.2: Collection and Analysis of New Data**

This subtask will involve refining the hydrogeologic framework of the Borrego Valley, as well as developing new geologic and hydrologic models. As such, this subtask will involve the compilation of new data regarding natural runoff and recharge, land elevation data, and well-bore flow and depth-dependent water-quality data.

Geodetic data for runoff and recharge and land elevation will be collected to provide precise and accurate well altitudes and to determine if subsidence is occurring in the Borrego Valley. Well-bore flow and depth-dependent water-quality data will be used to determine if there is a difference in well production and water quality with depth in the alluvium and older formations.

The following describes how such new data will be compiled.

#### *Natural Runoff and Recharge*

Precipitation and potential evapotranspiration will be used to estimate the natural runoff and recharge in the basin through implementation of a Basin Characteristic Model (BCM). The BCM will be used with available GIS data such as a digital elevation model, geology, soils, vegetation, precipitation, and air temperature maps compiled in the preliminary GIS database described under Subtask 2-1.1. The BCM

may also be used to identify locations and climatic conditions that allow for excess water, therefore quantifying the amount of water available either as runoff or as in-place recharge on a monthly basis, and allowing for inter-basin comparisons of recharge mechanisms.

#### *Land Elevation Data*

Two methods of measuring land elevation data, Global Positioning System (GPS) and Interferometric Synthetic Aperture Radar (InSAR), are proposed to determine the location, extent, and magnitude of vertical land-surface changes. GPS surveying will result in measurements of elevation at selected locations (bench marks) that can then be compared to documented historical elevations of those bench marks to calculate vertical changes between the times of elevation measurements. InSAR will produce measurements of vertical land-surface change for various time periods between 1992 and 2008. While GPS measurements will provide actual elevations which will then be compared to previously measured elevations generally over longer time periods, InSAR measurements will provide relative elevation changes generally over shorter time periods.

#### *Well-Bore Flow and Depth-Dependent Water-Quality Data*

Well-bore flow and depth dependent water quality data may be collected from several production wells following the USGS methods and procedures for water supply wells. These data will help determine if there is a difference in well production and water quality with depth in the alluvium and older formations. If possible, existing water quality data will be supplemented with water chemistry data collected from monitoring wells and selected existing production wells.

#### **Subtask 2-1.3: Conversion of Fine-Element Model into MODFLOW**

The existing USGS model is a three-dimensional finite-element groundwater flow model of three aquifers in the Borrego Valley calibrated at steady-state (1945) and transient (1946-1979) conditions. The first step of Subtask 2-1.3 will be to update the finite-element model to MODFLOW-2005. Like the finite-element model, the updated model will consist of a steady-state stress period and seventeen two-year transient stress periods. The results of the MODFLOW-2005 model will be compared to the existing finite-element model and any differences will be summarized.

#### **Subtask 2.1-4: Update the Model with Current Information**

Once the model is converted to MODFLOW-2005, new hydrologic and hydrogeologic information can be incorporated into the simulation. Hydrogeologic framework and groundwater flow models will be developed as part of this study. The hydrogeologic model will include the refined and updated hydrogeologic framework and related hydrogeologic layering needed to build the groundwater flow model. This model will incorporate all of the information compiled in Tasks 2.1-1 through 2.1-3 and in previous studies, as well as any additional drillers and geophysical logs, cross sections, and geologic maps available. Measured groundwater levels collected from 1945 through 2005 will be used to calibrate the groundwater flow model.

#### **Subtask 2.1-5: Prepare Reports**

Status reports will be provided as needed to keep BWD informed of the status of work and any findings. Town Hall meetings in Borrego presentation of progress will be done in March of 2009 and March of 2010 (or at other mutually agreed upon appropriate times). A final report will be prepared describing size and depth of the Borrego Valley groundwater flow system. The interpretive report will summarize the hydrogeologic framework, hydrologic budget, and results from the groundwater flow model.

The results of Subtasks 2-1.1 through 2-1.5 will be summarized for inclusion in the ABD IRWM Plan (refer to Task 3).

### **Deliverables**

- Preliminary GIS database that includes a compilation of existing hydrogeologic and hydrologic data for the Borrego Valley.
- Updated data regarding natural runoff and recharge, land elevation data, and well-bore flow and depth-dependent water-quality data for the Borrego Valley.
- Summary of results of the MODFLOW-2005 model, including a summary of any differences between the MODFLOW-2005 model and the existing three-dimensional finite-element model.
- [Updated hydrogeologic framework and groundwater flow model.](#)
- [Draft and final report summarizing the results of Subtasks 2-1.1 through 2-1.5, for incorporation into the IRWM Plan.](#)
- [Agendas for two \(2\) Town Hall meetings to present progress of groundwater modeling effort.](#)
- [Meetings????Community Advisory Committee meetings to determine potential model run scenarios.](#)

### **Task 2-2: Managing the Region's Groundwater Basins**

Given the Region's reliance on groundwater supplies, it is imperative that the Region manages its groundwater basins in a scientific and economic manner. The purpose of Task 2-2 is to use existing data, including information prepared within the [ABD Region Summary](#) prepared by DWR and RMC-WRIME (refer to *Additional IRWM Plan Work*) and the *Characterization of Current Regional Water Supply* prepared by USGS and BWD (refer to Task 2-1), and work through an open and transparent stakeholder process to develop a ranked list of alternative strategies and associated funding mechanisms that would provide the Region with implementable strategies for adequately managing its groundwater resources. In addition, due to the intrinsic link between groundwater supplies and environmental integrity within the Region, Task 2-2 will also assess how environmental integrity issues have arisen and may continue to arise if the Region's groundwater basins are not adequately managed.

The following are specific subtasks that will be completed as part of Task 2-2:

#### **Subtask 2-2.1: Alternative Strategies for Establishing Managed Basins**

Following the description of baseline conditions and trends established in the [ABD Region Summary](#) and Task 2-1, potential alternative strategies that could be implemented to adequately manage the Region's groundwater basins will be developed. Please note that alternative strategies may include a compilation of various options, and are not limited to a single strategy. Potential options could include technical, legal, and legislative options such as groundwater recharge (technical), legally stipulated agreements negotiated among pumpers (legal), and special act legislation that grants groundwater management authority (legislative).

Work conducted under this subtask will include coordinating with the Stakeholders Committee to determine an agreed upon definition for adequately managing the Region's groundwater basins. Some of the questions that will be addressed in agreeing upon this definition will be:

1. What is necessary to develop a plan that actually addresses groundwater overdraft by bringing withdrawals into balance with annual recharge?
2. Who currently has or how can the Region establish the authority to enforce the plan?
3. What is a mechanism to pay for implementing the plan?

It is assumed that the [ABD Region Summary](#) and Task 2-1 will produce information regarding the baseline (existing) groundwater balance (supplies and demands), which does not constitute adequate management due to existing groundwater overdraft conditions. It is likely that the stakeholder group utilized for this subtask will be synonymous with the stakeholder group established to review and provide input for the

*ABD Region Summary*; however attendance and participation will be open to all interested stakeholders, particularly DAC and tribal representatives.

This subtask will also involve developing a sound scientific and economic evaluation (a formal prioritization process) that will be used to rank each potential alternative. The prioritization process shall take into consideration the hydrologic feasibility that implementation of each alternative would lead the Region towards adequately managing its basins according to the definition of “adequately managing” as agreed upon by stakeholders. In addition, the prioritization process will assess the relative economic cost associated with implementing and operating each alternative over its reasonable lifetime.

The results of this prioritization process will include a prioritized list that ranks alternative strategies among each other and places alternative strategies into relative tiers. Up to eight (8) of the top-scoring alternative strategies will be placed within the “top-tier” of alternatives. The results of this process will be integrated into the IRWM Plan (refer to Task 3).

#### **Subtask 2-2.2: Mechanisms for Funding Groundwater Management Alternatives**

In conjunction with work completed under Subtask 2-2.1, potential mechanisms will be developed to analyze how alternative strategies included within the top-tier list of ranked alternatives could be funded on an ongoing basis. Any alternatives that are identified as financially infeasible will be removed from the top-tier list and replaced with subsequently ranked alternatives. This subtask will include development of financing proposals that describe how to finance implementation, operation, and maintenance of each financially feasible top-tier alternative through its reasonable life. The results of this process will be integrated into the IRWM Plan (refer to Task 3).

#### **Subtask 2-2.3: Addressing Environmental Integrity Issues**

This subtask will involve development of a summary of existing and future potential environmental integrity issues and their associated costs assuming continuation of existing conditions (i.e. not adequately managing) the Region’s groundwater basins]. The purpose of this subtask is to provide information regarding environmental integrity-related issues that have arisen and will potentially arise in the future if the Region’s groundwater basins are not adequately managed. Specifically, this subtask will address potential impacts that have occurred and may impact ecosystem services if the Region’s groundwater basins are not adequately managed. The results of this process are not anticipated for incorporation into the alternative strategy ranking process (Subtask 2-2.1), but rather will be integrated into the IRWM Plan to describe the Region’s important environmental resources as they relate to groundwater overdraft (refer to Task 3).

#### **Other Studies or Work Products to be Utilized**

- Work completed by DWR and RMC-WRIME under the *ABD Region Summary*.
- 2002 Groundwater Management Plan, Borrego Water District
- 2009 Integrated Water Resources Management Plan, Borrego Water District
- 2004 California’s Groundwater Bulletin 118 for the Borrego Valley Groundwater Basin, DWR
- 2011 San Diego County General Plan Update, County of San Diego
- *Pending*: 2011 Evaluation of Groundwater Conditions and Land Subsidence in the Borrego Valley, United States Geological Survey
- *Pending*: Southeast California Regional Basin Study, United States Bureau of Reclamation and the Borrego Water District
- *Pending*: State and Tribal Assistance Grant (STAG) Borrego Springs Pipeline Feasibility Study, United States Environmental Protection Agency and the Borrego Water District

### ***Deliverables***

- Up to five (5) Stakeholders Committee meetings to discuss the alternative basin management strategies, the prioritization process, the potential funding mechanisms, and the existing and future potential environmental integrity issues. This deliverable will include agendas, presentations, handouts, and notes.
- Draft and final Groundwater Management Technical Memorandum including a summary of the Stakeholders Committee meetings, alternative strategies, prioritization process, potential funding mechanisms, and associated environmental integrity issues.
- Integration of conclusions and results of the Groundwater Management Technical Memorandum into the ABD IRWM Plan.

### **Task 2-3: Forecasting Changes in Water Quality as the Groundwater Basins are Dewatered**

Although groundwater quality issues could have a potentially substantial impact with regards to the usability and affordability of groundwater and the Region's environmental integrity (refer to *Introduction*), groundwater quality has not been comprehensively analyzed within the Region. Therefore, the purpose of Task 2-3 is to develop forecasts that analyze potential water quality impacts and their relative economic and environmental integrity impacts that may arise due to the lowering of the Region's groundwater tables (dewatering).

The following are specific subtasks that will be completed as part of Task 2-3:

#### **Subtask 2-3.1: Methodologies for Developing Water Quality Forecasts**

This subtask involves development of methodologies (including assumptions) that will be utilized to develop water quality forecasts that demonstrate the potential water quality impacts that could occur and the timeframes over which they would occur as the Region's groundwater basins are dewatered. The forecasts will be required to demonstrate the magnitude and extent of water quality impacts under various groundwater management scenarios, including a baseline, "status quo," scenario. The baseline scenario would be established from information presented within the *ABD Region Summary* and Task 2-1, which will determine the current water balance of groundwater within the Region. The results of Subtask 2-3.1 will be integrated into the IRWM Plan (refer to Task 3 below).

#### **Subtask 2-3.2: Analyze Potential Economic Impacts and Impact Timeframes**

This subtask involves implementation of the methodologies developed within Subtask 2-3.1 in order to complete forecasts that demonstrate the potential water quality impacts and the attendant economic costs of these impacts that may occur and the timeframes over which they would occur as the Region's groundwater basins are dewatered. The probabilistic economic cost estimates from this analysis will demonstrate the magnitude and extent of water quality impacts under various groundwater management scenarios, including a baseline scenario. This economic analysis is intended to address: "what are the economic consequences of continuing the overdraft at its present rate?" The results of this subtask will be integrated into the IRWM Plan (refer to Task 3).

#### **Subtask 2-3.3: Addressing Environmental Integrity Issues**

This subtask will involve development of a summary of existing and future potential environmental integrity issues that would be anticipated based on water quality forecasts determined within Subtask 2-3.2. The purpose of this subtask is to provide an estimate of both first and second order economic and qualitative information regarding environmental impacts that may potentially arise in the future due to a probabilistically forecasted decline in water quality resulting from dewatering of the Region's groundwater basins. The results of this analysis will be integrated into the IRWM Plan to describe the Region's salient and projected environmental resources and the associated water quality needed to support these economically important environmental resources (refer to Task 3).

### ***Deliverables***

- Up to five (5) Stakeholders Committee meetings to discuss the water quality forecasts, the water quality forecast results, and the potential environmental integrity issues. This deliverable will include agendas, presentations, handouts, and notes.
- Draft and final Water Quality Technical Memorandum including methodologies, forecast results (economic impacts and timeframes), and associated environmental integrity issues.
- Integration of conclusions and results of the Water Quality Technical Memorandum into the IRWM Plan.

### **Task 2-4: Anticipating the Impacts of Climate Change on Regional Water Resources**

The purpose of Task 2-4 is two-fold. First, this task will be utilized to conduct climate change analyses and efforts as specified by DWR within the Guidelines. Second, three key Regional issues (flood control, water supply, and environmental integrity) are anticipated to be affected by climate change. Therefore, Task 2-4 will provide information regarding climate change impacts, vulnerabilities, and possible solutions as they relate to the specific issues identified in the Region.

The following are specific subtasks that will be completed as part of Task 2-4:

#### **Subtask 2-4.1: Climate Change Vulnerability Analysis and Prioritization**

This task involves development of the climate change analysis required to address DWR’s IRWM Grant Program Guidelines relating to climate change. As such, the analysis will assess the vulnerability of the Region to Region-specific climate change impacts, such as groundwater recharge rates and flooding. The vulnerability analysis will include an evaluation of the adaptability of water management systems in the Region to climate change, including water supply, wastewater, and flood control systems. The Stakeholder Committee will establish priorities by which to rank climate change vulnerabilities, and then complete a prioritization exercise that ranks vulnerabilities in terms of risk and severity. The results of this process will be integrated into the IRWM Plan (refer to Task 3 below).

#### **Subtask 2-4.2: Flood Control and Other Adaptation Strategies**

Upon assessing the Region’s vulnerability to climate change, work will be completed to identify specific adaptation strategies that can be completed to allow the Region to better adapt to anticipated climate change vulnerabilities. Considering that the Region already faces substantial impacts related to flooding and flood-based development restrictions, it is imperative that the Region have a comprehensive understanding of existing and potential future flood impacts and strategies for addressing such impacts. As such, this subtask will include an assessment of alternative flood control strategies that can be utilized to address existing and anticipated future (climate change-related) flood impacts. Part of the alternatives analysis will include an assessment of the relative costs of various flood control strategies in order to determine relative costs to address existing and future flood control techniques.

Further, this subtask will provide climate change adaptation strategies for all other top-ranking climate change vulnerabilities identified within Subtask 2-4.1. Due to the known nexus between climate change and groundwater recharge, it is anticipated that water supply (groundwater) will be one of the top-ranking climate change vulnerabilities. This exercise will include an assessment of the relative costs of various climate change adaptation strategies. The results of this process will be integrated into the IRWM Plan (refer to Task 3).

#### **Subtask 2-4.3: Addressing Environmental Integrity Issues**

This subtask will involve development of a summary of future potential environmental integrity issues that would be anticipated throughout the Region based on the climate change vulnerability analysis completed within Subtask 2-4.1. The purpose of this subtask is to provide information regarding

environmental issues anticipated to arise in the future due to anticipated climate change impacts. The results of this process will be integrated into the IRWM Plan (refer to Task 3).

***Other Studies or Work Products to be Utilized***

- 2010 *Probabilistic Analysis of the Effects of Climate Change on Groundwater Recharge*, Gene-Hua et al.
- 2010 White Paper – Borrego Springs Flood Risk Management Study, United States Army Corps of Engineers
- 2008 Water and Border Area Climate Change, DWR
- 2008 *Managing an Uncertain Future – Climate Change Adaptation Strategies for California’s Water* – DWR
- 2010 Storm Stories Depict Vulnerability of Valley to Flooding/Heavy Rain, Borrego Sun
- 1989 Borrego Valley Flood Management Report, Boyle Engineering for the County of San Diego
- 1985 Rain and Streamflow History in Eastern San Diego County, County of San Diego
- 1976 Storm Report – Tropical Storm Kathleen, County of San Diego Department of Sanitation and Flood Control
- 1977 Storm Report – Tropical Storm Doreen, County of San Diego Department of Sanitation and Flood Control
- Guidelines for Flood Protection of Structures in Borrego Springs, County of San Diego
- 2011 Climate Change Handbook for Regional Water Management, USEPA Region 9 and DWR

***Deliverables***

- Up to five (5) Stakeholders Committee meetings to discuss and rank the climate change vulnerability analysis, the climate change adaptation strategies and costs, the flood control strategies and costs, and the potential environmental integrity issues. This deliverable will include agendas, presentations, handouts, and notes.
- Draft and final Climate Change Technical Memorandum including climate change vulnerabilities, climate change adaptation strategies and relative costs, flood control strategies and relative costs, and associated environmental integrity issues.
- Integration of conclusions and results of the Climate Change Technical Memorandum into the IRWM Plan.

### **Task 3: Updating the ABD IRWM Plan**

Task 3 includes all activities required to update the IRWM Plan to meet DWR’s Guidelines, and incorporate other work products such as stakeholder outreach and Regional Water Resources Plans described within Task 1 and Task 2 of this Work Plan. Please note that several of the tasks below include work completed by the Stakeholders Committee established in Task 1.

#### **Task 3-1: Updates to Governance and Financing Plan**

This task involves convening the Stakeholders to examine long-term governance alternatives available to the Region, including defining both decision-making and financing structures. This effort is intended to help the Region establish a long-term governance structure that will continue regional coordination and collaboration efforts throughout and beyond development of the IRWM Plan. These discussions will build upon the stakeholder outreach and interviews completed by CCP to date and will address any necessary changes to the existing governance structure established thus far (refer to Figure 3-5).

The Stakeholders Committee will develop a set of recommendations for long-term governance to present to the RWMG for consideration. These recommendations will include governance and financing proposals (i.e., how to finance annual program administration), as well as an implementation or transition plan for moving from the existing governance structure to the long-term governance structure. The RWMG will then present the long-term governance recommendations to their governing bodies for discussion and approval.

#### ***Other Studies or Work Products to be Utilized***

- 2010 Draft IRWM Plan deliverables
- Work completed by CCP under DWR’s Facilitation and Technical Support Contract (see *Additional IRWM Plan Work*).

#### ***Deliverables***

- Stakeholders Committee meetings as needed to discuss long-term governance and financing alternatives. These meetings are budgeted under Task 1-2.
- Draft and final Long-Term Governance recommendations addressing recommended decision-making structure, financing program, and implementation or transition plan.
- Draft and final formal governance agreements (MOU, etc.).

#### **Task 3-2: Refine IRWM Plan Goals, Objectives, and Priorities**

As the IRWM Plan is developed, a detailed refinement of the Region’s goals and objectives will be necessary. As the Regional Water Resources Plans identified in Task 2 move forward, the RWMG will incorporate any new information learned about the Region’s water management systems into the IRWM Plan. This may include clarification of critical water supply or water quality issues and/or incorporation of the new planning strategies into the IRWM Plan framework.

Based on this work, the Stakeholders Committee will work to refine the IRWM Plan goals and objectives to guide the Region during the next planning horizon. As all Stakeholders Committee meetings, these meetings will be advertised to all regional stakeholders and agendas will clearly identify that the IRWM Plan Goals, Objectives, and Priorities topics will be discussed. Additionally, the Stakeholders Committee shall revisit the short- and long-term priorities laid out in the Draft IRWM Plan to determine if the new information and/or changing regional conditions or regulatory requirements results in different priorities. At the conclusion of the Stakeholders Committee’s discussion of the aforementioned topics, a recommendation shall be formalized and provided to the RWMG.

Due to the extensive nature of environmental integrity issues addressed within the Regional Water Resources Plans described within Task 2, the RWMG and Stakeholders Committee will be sure to incorporate information relating to environmental integrity into the IRWM Plan.

***Other Studies or Work Products to be Utilized***

- 2010 Draft ABD IRWM Plan deliverables

***Deliverables***

- Stakeholders Committee meetings as needed to address IRWM Plan goals, objectives, and priorities. These meetings are budgeted under Task 1-2.
- Draft and final IRWM Plan goals, objectives and priorities.

**Task 3-3: Develop Data Management Plan**

Data collected to date has included prior reports, memos, letters, and meeting minutes. These items along with raw data such as groundwater levels, water quality, pumping test results, and other information are routinely stored in BWD files, and incorporated into the BWD Geographic Information System (GIS) database. The BWD GIS database was developed in conjunction with the development of numeric modeling being formulated by USGS (refer to Task 2-1), and generally only covers portions of the Region.

Currently, the RWMG, with assistance from the Southern [Region](#) Office of DWR, is working to integrate the ABD State Park’s extensive GIS data, which covers a large portion of the Region, into the BWD GIS database. In addition to this work, there is a need to incorporate portions of the County’s GIS data into the BWD GIS database to create a robust GIS database with information for the entire Region.

This task will involve development of a regional data management system (DMS), which will be developed with common protocols for gathering data in a consistent manner, and making data accessible to the Stakeholders Committee and other stakeholders as appropriate. The DMS will be structured to ensure efficient use of available data, increase stakeholder access to data, and ensure that data gathered as part of IRWM-related activities can be integrated into existing State and local databases.

***Other Studies or Work Products to be Utilized***

- BWD GIS database
- San Diego County GIS database
- State Park GIS database
- GIS database established by BWD and USGS under Task 2-1
- 2010 Draft IRWM Plan

***Deliverables***

- Regional DMS with GIS data layers.
- Draft and final description of the ABD Data Management Plan describing the data available to stakeholders through the regional DMS.

**Task 3-4: Develop Performance and Monitoring Methods**

This task will involve incorporating information from the stakeholder outreach process (refer to Task 1) to determine appropriate targets by which to measure IRWM Plan performance. These metrics and targets will be aligned with the IRWM Plan goals and objectives (refer to Task 3-1) so that the Region can track how integrated projects are helping to achieve the Region’s goals.

In addition, this task will involve determination of a reporting process that will be used to assess and report plan performance. An annual reporting process will be used to evaluate the Region’s progress on

fulfilling the short-term priorities (i.e., program implementation), as well the Region’s progress on implementing the identified water management projects (i.e., project implementation). The annual reporting will contain criteria used to evaluate the progress of implementation projects in meeting the IRWM Plan objectives. This will ensure that the Region is efficiently making progress towards meeting the objectives in the IRWM Plan, the Region is implementing projects listed in the IRWM Plan, and each project in the IRWM Plan is monitored to comply with all applicable rules, laws and permit requirements.

The annual reports will be short and concise summaries that can be used to communicate Plan performance to stakeholders, the public, and the RWMG governing bodies. The annual reports will be delivered in both print and electronic copy to reach as many stakeholders as possible. Due to the importance of stakeholder outreach and transparency within the Region, the annual report will be designed such that it may be presented at the Borrego Springs Annual Town Hall Meeting held in April of each year.

Stakeholders Committee meetings will include a discussion of metrics, targets, and the proposed reporting process. At the conclusion of the Stakeholders Committee’s discussion of the aforementioned topics, a recommendation shall be formalized and provided to the RWMG. The RWMG will utilize meetings with the public, stakeholders, and the Stakeholders Committee under Task 1 to discuss and present the Stakeholder Committee’s recommendation.

***Other Studies or Work Products to be Utilized***

- 2010 Draft ABD IRWM Plan

***Deliverables***

- Stakeholders Committee meetings as needed to address IRWM Plan metrics, targets, and the proposed reporting process. These meetings are budgeted under Task 1-2.
- Draft and final IRWM Plan metrics.
- Draft and final IRWM Plan performance and monitoring methods.
- Design draft and final template for Annual Report.

**Task 3-5: Describe IRWM Process Relating to Local Land Use and Water Planning**

The RWMG will work with local land use planning efforts, including State and Federal agencies with land use authority such as the State Park, the Bureau of Land Management (BLM), local Resource Conservation Districts, and others to define land use issues as they relate to water management. The RWMG will also invite other water managers such as local community service districts to participate in this task. This task will involve continued dialogue between the RWMG agencies, the State Park, and other agencies with land use and water authority to ensure continued cooperation in implementing IRWM-related projects and meeting regional goals and objectives established under Task 3-2. It is assumed that these parties will meet up to four (4) times during development of the IRWM Plan to ensure that there is an exchange of knowledge and expertise between land use and water managers and identify how to improve planning efforts between these entities. These meetings will occur concurrently with Stakeholders Committee meetings described within Task 1, and will be specially advertised to local land use and water management authorities.

***Other Studies or Work Products to be Utilized***

- 2011 San Diego County General Plan Update, County of San Diego
- 2010 Draft IRWM Plan Deliverables
- 2005 Anza-Borrego Desert State Park Final General Plan and Environmental Impact Report
- All planning documents for local water authorities including BWD, the RCD, and other participating water agencies.

### ***Deliverables***

- Stakeholders Committee meetings as needed, specifically advertised to land use and water managers, that address land use and water planning. These meetings are budgeted under Task 1-2.
- Draft and final IRWM Plan text describing coordination between water management and land use planning.

### **Task 3-6: Prepare IRWM Plan per State Guidelines**

Based on all of the work completed in Tasks 3-1 through 3-5 above, the RWMG will prepare an Administrative Draft IRWM Plan for internal review. In addition, the RWMG will utilize information for sections such as Resource Management Strategies, Impacts and Benefits, and Integration Opportunities that were included within the Draft IRWM Plan. It is assumed that any sections or work for the IRWM Plan not specifically called out in the sections above will be completed as part of Task 3-6.

The Administrative Draft IRWM Plan will contain the following sections:

1. Introduction
2. Region Description, Issues, and Needs
3. Governance and Stakeholder Involvement
4. Vision, Mission, Goals and Objectives
5. Resource Management Strategies
6. Integration Opportunities
7. Project Evaluation and Prioritization
8. Data Management and Technical Analysis
9. Framework for Implementation
10. References

As part of the IRWM Plan development process, the RWMG will document how the IRWM Plan meets State goals and priorities. The IRWM Plan will contain a clear description outlining the location of all content as required by DWRs' IRWM Plan Guidelines. The IRWM Plan will also clearly articulate steps for evaluation and measurement of Plan success.

The RWMG will then prepare a Public Review Draft IRWM Plan for review and consideration by the Stakeholders Committee, at Public Workshops, and by any other interested parties. Two (2) Public Workshops will be conducted to present and discuss the Draft IRWM Plan (see Task 1). The RWMG will facilitate review and discussion of the draft IRWM Plan with stakeholders, including collecting and compiling their comments into a comments matrix.

Following public review of the draft IRWM Plan, the RWMG will review comments, present IRWM Plan changes in response to comments, and solicit agreement from the Stakeholders Committee on the proposed changes. Based on the comments reviewed from the Stakeholders Committee and general public, the RWMG will prepare an Administrative Final IRWM Plan. Following one round of revisions based on final comments, the RWMG will prepare a Final IRWM Plan for presentation to the Stakeholders Committee and other interested parties.

Following completion of the IRWM Plan, the RWMG will prepare an IRWM Plan Executive Summary that will provide a short, visually appealing overview of the IRWM Plan and related activities. The Executive Summary will showcase and communicate IRWM Plan benefits and milestones to the general public, stakeholders, and governing bodies. The Executive Summary will serve as an educational document for the IRWM program that describes the program and explains the value that IRWM planning provides to the Region.

***Other Studies or Work Products to be Utilized***

- All plans listed in Task 1, Task 2, and previous subtasks of Task 3.

***Deliverables:***

- Administrative Draft IRWM Plan, in accordance with State Guidelines;
- Public Review Draft IRWM Plan;
- Compiled response to comments matrix;
- Administrative Final IRWM Plan;
- Final IRWM Plan;
- [IRWM Plan Executive Summary; and](#)
- [Presentation summarizing IRWM Plan for use at Board/Council hearings.](#)

**A. Task 4: [Grant Administration](#)**

This task addresses administration of the Planning Grant Contract between BWD and DWR. Preparation of the contract materials, invoices, progress reports, and project performance documentation is included within this task. Project oversight and grant administration will be provided by BWD staff.

***Deliverables***

- Planning Grant contract, invoices, progress reports, and project performance documentation.

## 4. Additional IRWM Plan Work

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There are multiple existing efforts within the Region that will be performed in addition to Grant Work Plan that will be utilized in developing a standards-compliant IRWM Plan. The following sections provide details regarding each of these efforts as they relate to development of the ABD IRWM Plan.

### ***DWR Facilitation and Technical Support – Phase 2***

CCP will continue work completed under Phase 1 of the DWR Facilitation and Technical Support contract (see *Introduction*), and will therefore provide facilitation services for at least six (6) monthly stakeholder meetings with stakeholders in the ABD IRWM Region. CCP will also conduct limited stakeholder outreach to those unable or unwilling to attend Stakeholder Committee meetings. One goal of Phase 2 is to develop and adopt a Memorandum of Understanding or another formal governance agreement, such as a charter and ground rules, that will enable the Region to work together towards IRWM planning. A second goal of this stakeholder outreach effort will be to support the planning and analysis completed in the *DWR ABD Region Summary* effort below, such that the Region’s stakeholders achieve consensus on the scale of Region’s groundwater issues and the state of the Region’s basins. All work under this effort will be completed by December 2012.

This work will be solely sourced from DWR through Task Order No. 7-11 Borrego IRWMP under DWR Contract No. 4600007671.

### ***DWR ABD Region Summary***

DWR and RMC-WRIME will work to complete the *ABD Region Summary*, which also includes two phases. Phase 1, which is anticipated for completion by **March 2012**, will include an assessment of existing information regarding water supply conditions of the Borrego Valley Groundwater Basin. The ultimate goal of this assessment is to provide a set of facts regarding the basin that can be used for outreach purposes and to garner regional acceptance of the current state of the Borrego Valley Groundwater Basin from a water balance perspective. Phase 2, which is anticipated for completion by **September 2012**, will include an assessment of groundwater basins throughout the entire ABD IRWM Region. This effort will include stakeholder outreach (partnered with the *DWR Facilitation and Technical Support – Phase 2* effort above) to receive input on the groundwater analysis within the report.

Data from the two aforementioned phases will be compiled into one larger *ABD Region Summary* report that assesses groundwater supply conditions throughout the ABD IRWM Region with particular emphasis on the Borrego Valley Groundwater Basin, which supplies water to the majority of the Region’s residents.

This work will be solely sourced through DWR’s Southern Region Office.

### ***United States Bureau of Reclamation Southeast California Regional Basin Study***

The *Southeast California Basin Study* is a current effort between the United States Bureau of Reclamation (USBR), BWD, the Imperial Irrigation District, the Coachella Valley Water District, and the San Diego County Water Authority. As indicated within Task 2 of this Work Plan, the *Southeast California Basin Study* will be utilized as a reference and supporting document to complete Task 2-2. This study aims at assessing existing water resources, water management practices, and system components to optimize water resources across southeastern California. The study has five major goals, including:

- Characterizing current regional water supply and demand;
- Assessing risks to regional water supplies, including those due to climate change;
- Identifying potential strategies and options to resolve water supply and demand imbalances;
- Identifying potential legal and regulatory constraints and potential impacts to water users; and
- Prioritizing identified strategies and options for potential future actions.

The *Southeast California Basin Study* began in January 2011, and is anticipated for completion by January 2013. The study will be paid for by the USBR and BWD through a 50/50 cost share.

***USEPA State and Tribal Assistance Grant Study, Borrego Springs Pipeline Feasibility Study***

In 2009, BWD was awarded a State and Tribal Assistance Grant from the U.S. Environmental Protection Agency (USEPA) to perform a feasibility study of an imported water pipeline. The grant amount totaled \$267,000 and the final report is due in February 2012.

The scope for this feasibility study includes several routes that could be utilized for delivering imported water supplies to the Borrego Valley and includes the aspect of water banking sites along the route. Detailed analyses were performed on right-of-way mapping, existing easements, physical barriers along the proposed pipeline routes, potential cultural issues, suspected paleontology sites and habitat for endangered or threatened local flora and fauna. Results from this feasibility study will be incorporated into USBR's *Southeast California Basin Study* and the ABD IRWM Plan. The tasks for this feasibility study include:

- Study Element A – Pipeline Routing from Borrego to Ocotillo Wells
- Study Element B – Pipeline Routing from Ocotillo Wells to Carter Reservoir
- Study Element C – Pipeline Routing Investigation along Power Line from Ocotillo Wells to IID's Westside Canal
- Study Element D – Pipeline from Borrego Springs to Clark Lake Aquifer
- Study Element E – Pipeline Routing Environmental and Permitting Issues
- Study Element F – Allegretti Sub-basin as a Source Water Study

Deliverables from this feasibility study will include detailed maps with pipeline location information, reports on interviews with jurisdictional agencies along the proposed routes, geologic evaluations of potential groundwater banking areas, and a final report combining all of the information into a resource document.

## 5. References

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Anza-Borrego Desert State Park. 2005. *Anza-Borrego Desert State Park Final General Plan & EIR*. Available: [http://www.parks.ca.gov/?page\\_id=21314](http://www.parks.ca.gov/?page_id=21314)

California Department of Water Resources (DWR). 2004. *California's Groundwater Bulletin 118 – Borrego Valley Groundwater Basin*.

California Department of Water Resources (DWR). 2008. *Water and Border Area Climate Change – An Introduction*.

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County of San Diego. 2011. *County of San Diego General Plan – Borrego Springs Community Plan*.

Gene-Hua, Crystal Ng, Dennis McLaughlin, Dara Entakhabi, and Bridget R. Scanlon (Gene-Hua et al). 2010. *Probabilistic Analysis of the Effects of Climate Change on Groundwater Recharge*. Water Resources Research, Volume 46: W07502. Published July 2010.

[Jee, Frederic. 1988. "Geology" in Anza-Borrego Desert Natural History Association.](#)

[Jefferson, George and Lowell Lindsey \(editors\). 2006. "Introduction" in Fossil Treasurers of the Anza-Borrego Desert. San Diego, CA: Sunbelt Publications, 2006, xii-xiii.](#)

[Remika, Paul. 1992. Geology of Anza-Borrego: Edge of Creation. Dubuque, IA: Kendall/Hunt Publishing Company, 1992, 37-51.](#)

United States Army Corps of Engineers (USACE). 2010. *White Paper – Borrego Springs Flood Risk Management Study under CAP 205 Section Authority*.



Exhibit A  
Anza Borrego Desert  
Integrated Regional Water  
Management

P.O. BOX 1870  
806 PALM CANYON DRIVE,  
BORREGO SPRINGS, CA 92004  
(760) 767-5806  
FAX (760) 767-5994  
[www.borregowd.org](http://www.borregowd.org)

DATE: December 29, 2011  
TO: Brian Moniz, California Dept. of Water Resources  
FROM: Jerry Rolwing  
RE: IRWM Regional Acceptance Process for Anza Borrego Desert IRWMG

The Borrego Water District began working to secure a position in the San Diego County IRWMG in 2006. After attending several of the stakeholder meetings, the District was politely asked to leave the group for geographical reasons (attachment A). When confronted, the County IRWM representative, offered to assist Borrego in forming a second County group which would better meet our geological area requirements. Several attempts were made to join in the early programs with Coachella Valley and Imperial County but were unsuccessful, this time due to political boundary considerations. With the assistance of our consultant Bill Mills, the District was able to locate and secure support from the Resource Conservation District of Greater San Diego County and the County of San Diego, through the Department of Planning and Land Use who had direct control over land use and associated water regulations (attachment B).

Our original submittal to the DWR featured the Borrego Valley Watershed area only (attachment C). After meeting with the DWR through an RAP interview, it was agreed for the area boundary to be expanded to better suit the "regional" requirement of the process. The area was expanded to include the portion of San Diego County that lies in the Colorado River Hydrologic Basin Region. The new area combined the Borrego Valley watershed which extends into Riverside County and the area of San Diego County east of the Tecate Divide. The expanded area included the entire Anza-Borrego Desert State Park, Ocotillo Wells State Vehicular Recreation Area, four public water purveyors and five Indian Reservations. The updated boundary and location of the public water systems are featured on the regional map (attachment D). All of these groups have been approached by the Borrego Water District to be included in the program. The IRWMG continues to outreach to these groups and has had some success in recruiting these regional stakeholders but due to various reasons, some groups have declined to participate. The ABD\_IRWMG will continue to pursue this level of outreach and the plan work continues.





# County of San Diego

## DEPARTMENT OF PUBLIC WORKS

JOHN L. SNYDER  
DIRECTOR

5555 OVERLAND AVE, SUITE 2188  
SAN DIEGO, CALIFORNIA 92123-1295

(858) 694-2212 FAX: (858) 268-0461  
Web Site: [sdcdpw.org](http://sdcdpw.org)

November 22, 2006

Russ Fogarty  
General Manager  
Borrego Water District  
P.O Box 1870  
Borrego Springs, CA 92004

Dear Mr. Fogarty:

I am responding to your letter of September 7, 2006, requesting inclusion of the Borrego Valley in the planning area of the San Diego Integrated Regional Water Management (IRWM) Plan. As you are aware, the development of this Plan, currently scheduled for adoption in mid-2007, has been in progress since late 2004. Responsibility for its completion currently resides with a Regional Water Management Group (RWMG) which is a partnership of the San Diego County Water Authority, the City of San Diego, and the County of San Diego (County). Although we find merit in your request to be included in an IRWM Plan process, please understand that including Borrego Valley in the San Diego IRWM Plan requires the concurrence of all three RWMG member agencies.

An issue of critical importance in initiating the San Diego IRWM effort was to define the geographic area to be addressed in the Plan. After careful consideration, the RWMG determined that this should include the area of intersection of San Diego County and California Regional Water Quality Control Board (RWQCB) Region Nine. County staff presented your letter and issue of whether the IRWM Plan boundary should be modified to include the Borrego Valley at a meeting of the RWMG on September 25, 2006. At that meeting, it was decided that the boundaries of the San Diego IRWM Plan should not be adjusted at this time. The primary reasons for this decision are as follows:

The hydrology and physical geography of the Borrego Valley are distinctly different from the IRWM Plan area. A defining characteristic of the IRWM Plan region is the inclusion of all westward draining watersheds. The Borrego Valley is located in a separate hydrologic region with vastly different climates, runoff characteristics, and hydrology.

Attachment A

Mr. Fogarty  
November 21, 2006  
Page 2

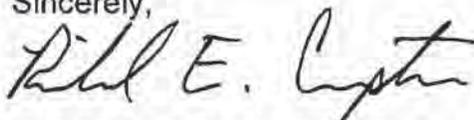
Water supply and wastewater patterns and practices are very different between these two areas. Imported water is the predominant source of supply within the San Diego IRWM Region, and the imported water is supplied by a single wholesale imported water agency – The San Diego County Water Authority. This commonality of water supply and wastewater patterns requires that the Region work together to manage water resources efficiently and to develop a diverse reliable water supply for the Region.

Modifying the IRWM Region at this late date would sidetrack efforts to complete and adopt the Plan on its current schedule. The Plan must be adopted in mid-2007 to enable the Region to apply and compete for State funding under Propositions 50 and 84.

The Borrego Valley presents water supply, water quality, and ecological issues and challenges that are generally quite distinct from those of the San Diego IRWM Region. During the RWMG meeting, it was suggested that the Borrego Water District approach the Imperial Irrigation District (IID) to coordinate an Integrated Regional Water Management Plan within the Colorado River Basin.

Again, please understand the County does not have the authority to determine whether or not Borrego Valley is included within the San Diego IRWM Plan Region. If you have any questions, or if you would like to further discuss the details of this issue with representatives of the RWMG, please contact Jon Van Rhyn at (858) 495-5133.

Sincerely,



RICHARD E. CROMPTON, Assistant Director  
Department of Public Works

REC/sm

cc: Ken Weinberg, Director of Water Resources, San Diego County Water Authority  
4677 Overland Avenue  
San Diego, CA 92123

Marsi Steirer, Deputy Water Department Director, City of San Diego  
City of San Diego Water Department  
600 B Street, Suite 600, MS 906  
San Diego, CA 92101

Jon Van Rhyn, Program Manager, Department of Public Works MS 0384

EG



# County of San Diego

**ERIC GIBSON**  
DIRECTOR

## DEPARTMENT OF PLANNING AND LAND USE

5201 RUFFIN ROAD, SUITE B, SAN DIEGO, CALIFORNIA 92123-1666  
INFORMATION (858) 694-2960  
TOLL FREE (800) 411-0017  
[www.sdcounty.ca.gov/dplu](http://www.sdcounty.ca.gov/dplu)

April 22, 2009

Mr. Richard S. Williamson, P.E.  
General Manager  
Borrego Water District  
P.O. Box 1870  
806 Palm Canyon Drive  
Borrego Springs, CA 92004

**RE: Borrego Water District (BWD) Regional Water Management Group**

Dear Mr. Williamson:

This letter is to provide notification that the County of San Diego Department of Planning and Land Use (DPLU) gladly accepts your invitation to be a member of the Borrego Water District Regional Water Management Group (RWMG). The County appreciates this great opportunity to work together on the challenges of planning future growth and managing the groundwater resources of Borrego Valley.

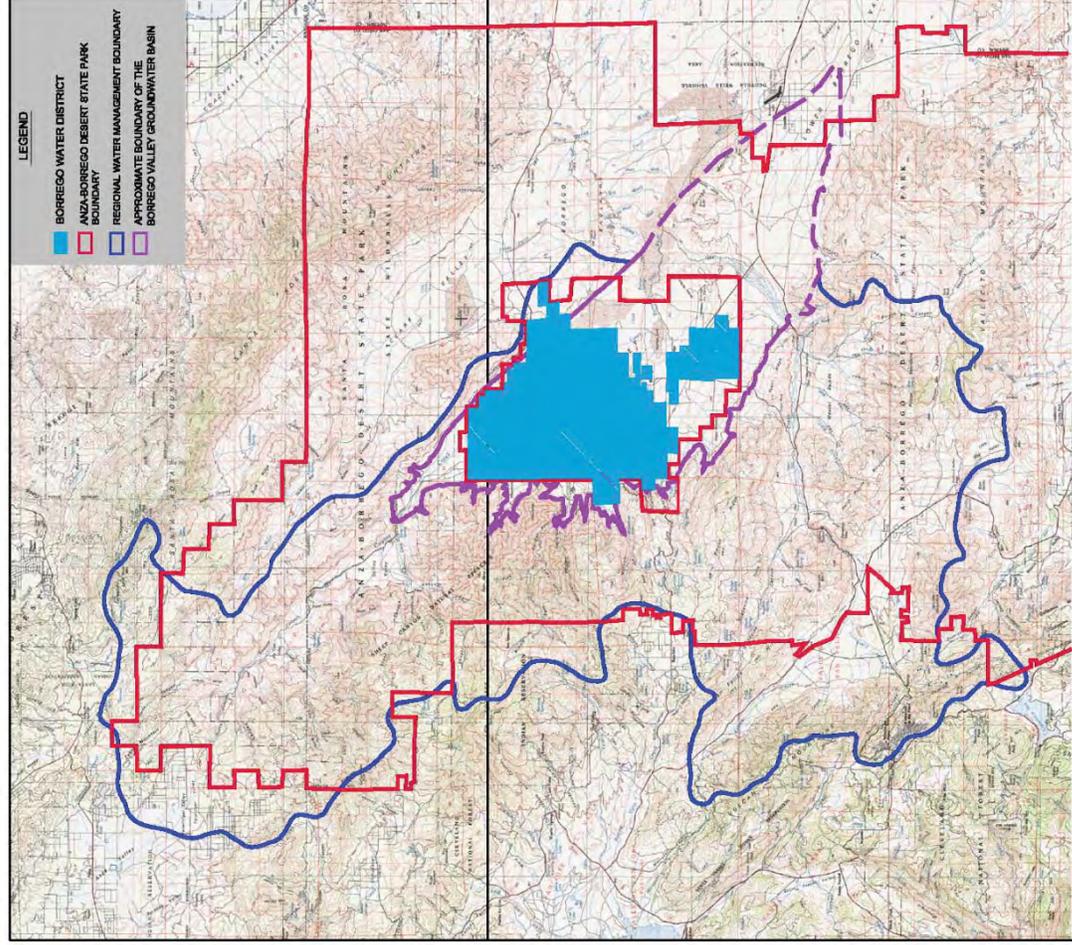
Our main point of contact and representative for the RWMG will be Jim Bennett, County Groundwater Geologist, who can be reached at 858-694-3820 or [jim.bennett@sdcounty.ca.gov](mailto:jim.bennett@sdcounty.ca.gov).

Sincerely,

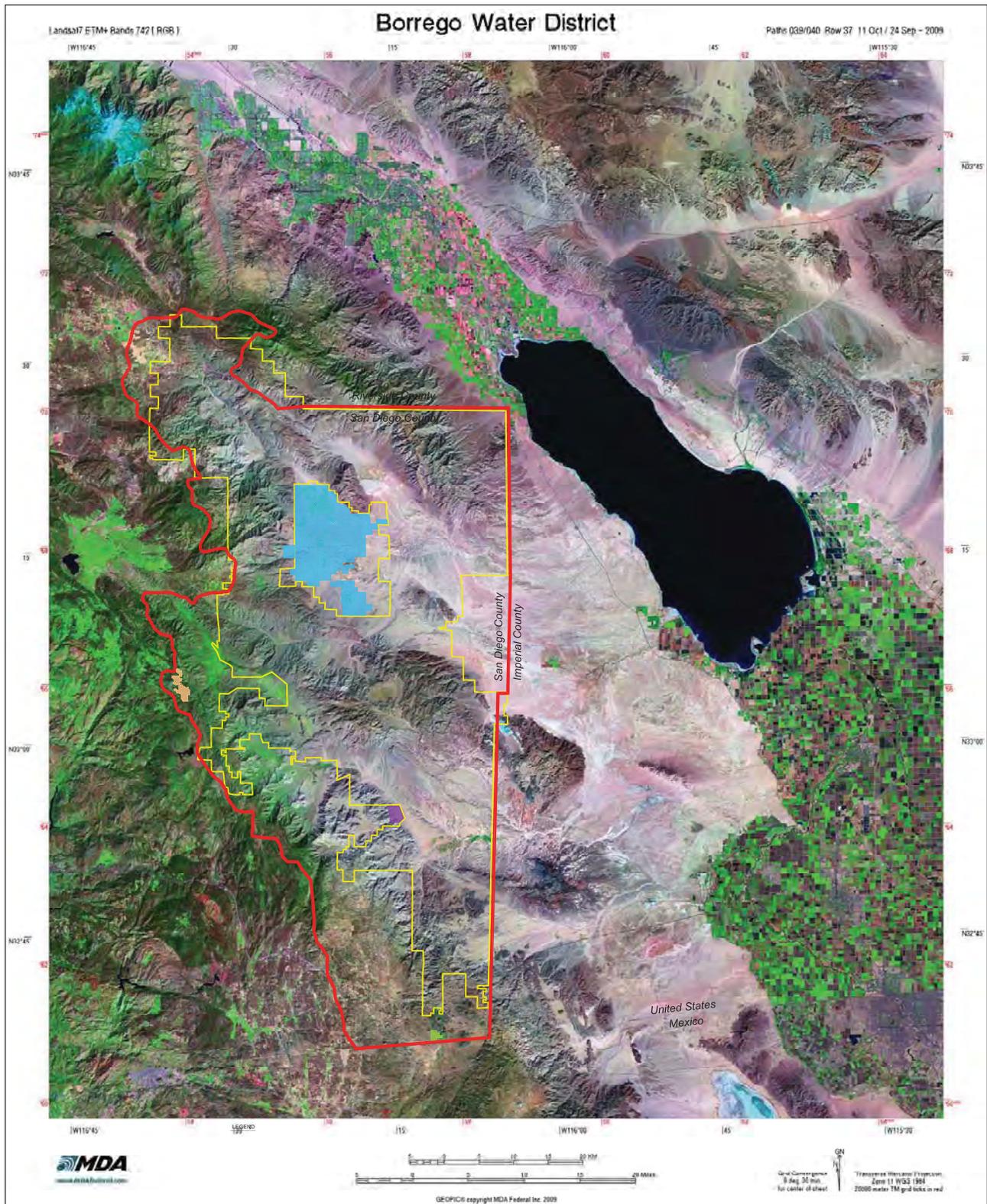
ERIC GIBSON, Director  
Department of Planning and Land Use

EG:jb

cc: Jim Bennett, County of San Diego, Department of Planning and Land Use



Borrego Water District  
Integrated Water Resources Management Plan  
**BORREGO VALLEY**  
San Diego County, California  
Figure: 2



- LEGEND**
- INTEGRATED REGIONAL WATER MANAGEMENT BOUNDARY
  - ANZA-BORREGO DESERT STATE PARK BOUNDARY
  - BORREGO WATER DISTRICT
  - CANEBRAKE WATER DISTRICT
  - JACUMBA C.S.D.
  - MAJESTIC PINES C.S.D.

Borrego Water District  
**ANZA BORREGO DESERT  
 INTEGRATED WATER MANAGEMENT REGION**  
 Imperial, San Diego and Riverside Counties, California

## Anza Borrego Desert Integrated Regional Water Management *Planning Grant Proposal Budget*

Attachment 4 consists of the following items:

✓ **Proposal Budget**

The proposal budget provides a budget estimate for each Work Plan task, as well as a breakdown of the proposed funding match and requested grant funds.

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The proposal budget provides a budget estimate for each Work Plan task, as well as a breakdown of the proposed funding match and requested grant funds. Supporting information provided in the tables includes labor categories, hourly billing rates, and time estimates for each work task.

### **Total Proposal Cost Estimate**

As described in Attachment 3, the *ABD IRWM Planning Grant Proposal* involves implementation of four tasks that will lead to development of a standards-compliant IRWM Plan, including:

- Task 1: Stakeholder Outreach & Program Administration
- Task 2: Regional Water Resources Plans
- Task 3: Updating the ABD-IRWM Plan
- Task 4: Grant Administration

The total budget for this proposal is \$1,099,904. Of this amount, \$465,483 (42% percent) is being provided as funding match and \$634,421 (58% percent) is being requested from DWR through the IRWM Grant Program.

Table 4-1 presents the overall grant request, while Table 4-2 presents the overall funding match, and Table 4-3 provides an overall budget for the entire *ABD IRWM Planning Grant Proposal*. The specific work items outlined in Attachment 3 are reflected in the detailed cost estimates.

Table 4-1: Cost Estimate for Grant Request

| Tasks  |  | Consultant Fee            |                    | Grant Request: BWD | Grant Request: County | Grant Request: RCD | Total Grant Request | Task Totals      |
|--|--|---------------------------|--------------------|--------------------|-----------------------|--------------------|---------------------|------------------|
| Mtgs   | Total Hours  | Grant Request: Consultant | Grant Request: BWD |                    |                       |                    |                     |                  |
| <b>Task 1: Stakeholder Outreach and Program Administration</b> |  |                           | <b>\$254,700</b>   | <b>\$0</b>         | <b>\$0</b>            | <b>\$0</b>         | <b>\$254,700</b>    | <b>\$254,700</b> |
|  | Task 1-1: Stakeholder Outreach   | 10                        | \$80,640           | \$0                | \$0                   | \$0                | \$80,640            |                  |
|  | Task 1-2: RWMG / Stakeholders Committee Meetings                                       | 48                        | \$150,760          | \$0                | \$0                   | \$0                | \$150,760           |                  |
|  | Task 1-3: Coordination with Other IRWM Regions   | 6                         | \$23,300           | \$0                | \$0                   | \$0                | \$23,300            |                  |
| <b>Task 2: Regional Water Resources Plans</b>                  |  |                           | <b>\$204,500</b>   | <b>\$0</b>         | <b>\$0</b>            | <b>\$0</b>         | <b>\$204,500</b>    | <b>\$204,500</b> |
|  | Task 2-1: Characterization of Current Regional Water Supply                            | 2                         | \$0                | \$0                | \$0                   | \$0                | \$0                 |                  |
|  | 2-1.1. Compilation of Available Hydrogeologic Data                                     | 0                         | \$0                | \$0                | \$0                   | \$0                | \$0                 |                  |
|  | 2-1.2. Collection and Analysis of New Data   | 0                         | \$0                | \$0                | \$0                   | \$0                | \$0                 |                  |
|  | 2-1.3. Conversion of Fine-Element Model into MODFLOW                                   | 0                         | \$0                | \$0                | \$0                   | \$0                | \$0                 |                  |
|  | 2-1-4: Update the Model with Current Information                                       | 0                         | \$0                | \$0                | \$0                   | \$0                | \$0                 |                  |
|  | 2-1-5: Prepare Reports   | 0                         | \$0                | \$0                | \$0                   | \$0                | \$0                 |                  |
|  | Task 2-2: Managing the Region's Groundwater Basins                                     | 5                         | \$89,780           | \$0                | \$0                   | \$0                | \$89,780            |                  |
|  | 2-2.1. Alternative Strategies for Establishing Managed Basins                          | 176                       | \$35,780           | \$0                | \$0                   | \$0                | \$35,780            |                  |
|  | 2-2.2. Mechanisms for Funding Groundwater Management Alternatives                      | 197                       | \$41,240           | \$0                | \$0                   | \$0                | \$41,240            |                  |
|  | 2-2.3. Addressing Environmental Integrity Issues                                       | 64                        | \$12,760           | \$0                | \$0                   | \$0                | \$12,760            |                  |
|  | Task 2-3: Forecasting Changes in Water Quality as the Groundwater Basins are Dewatered | 5                         | \$66,890           | \$0                | \$0                   | \$0                | \$66,890            |                  |
|  | 2-3.1. Methodologies for Developing Water Quality Forecasts                            | 164                       | \$31,960           | \$0                | \$0                   | \$0                | \$31,960            |                  |
|  | 2-3.2. Analyze Potential Economic Impacts and Impact Timeframes                        | 108                       | \$22,860           | \$0                | \$0                   | \$0                | \$22,860            |                  |
|  | 2-3.3. Addressing Environmental Integrity Issues                                       | 62                        | \$12,070           | \$0                | \$0                   | \$0                | \$12,070            |                  |
|  | Task 2-4: Anticipating the Impacts of Climate Change on Regional Water Resources       | 5                         | \$47,830           | \$0                | \$0                   | \$0                | \$47,830            |                  |
|  | 2-4.1. Climate Change Vulnerability Analysis and Prioritization                        | 126                       | \$22,530           | \$0                | \$0                   | \$0                | \$22,530            |                  |
|  | 2-4.2. Flood Control and Other Adaptation Strategies                                   | 90                        | \$17,130           | \$0                | \$0                   | \$0                | \$17,130            |                  |
|  | 2-4.3. Addressing Environmental Integrity Issues                                       | 42                        | \$8,170            | \$0                | \$0                   | \$0                | \$8,170             |                  |
| <b>Task 3: Updating the ABD IRWM Plan</b>                      |  |                           | <b>\$143,500</b>   | <b>\$0</b>         | <b>\$0</b>            | <b>\$0</b>         | <b>\$143,500</b>    | <b>\$143,500</b> |
|  | Task 3-1: Updates to Governance and Financing Plan                                     | 0                         | \$9,020            | \$0                | \$0                   | \$0                | \$9,020             |                  |
|  | Task 3-2: Refine IRWM Plan Goals, Objectives, and Priorities                           | 0                         | \$9,020            | \$0                | \$0                   | \$0                | \$9,020             |                  |
|  | Task 3-3: Develop Data Management Plan   | 0                         | \$9,880            | \$0                | \$0                   | \$0                | \$9,880             |                  |

Table 4-1: Cost Estimate for Grant Request

| Tasks   | Mtg      | Consultant Fee |                           | Grant Request: County | Grant Request: BWD | Grant Request: RCD | Total Grant Request | Task Totals      |
|---|----------|----------------|---------------------------|-----------------------|--------------------|--------------------|---------------------|------------------|
|   |          | Total Hours    | Grant Request: Consultant |                       |                    |                    |                     |                  |
| Task 3-4: Develop Performance and Monitoring Methods                | 0        | 36             | \$6,900                   | \$0                   | \$0                | \$0                | \$6,900             |                  |
| Task 3-5: Describe IRWM Process relating to Local Land Use Planning | 0        | 40             | \$7,560                   | \$0                   | \$0                | \$0                | \$7,560             |                  |
| Task 3-6: Prepare IRWM Plan per State Guidelines                    | 0        | 608            | \$101,120                 | \$0                   | \$0                | \$0                | \$101,120           |                  |
| 1. Introduction   |          | 16             | \$2,920                   | \$0                   | \$0                | \$0                | \$2,920             |                  |
| 2. Region Description, Issues and Needs                             |          | 60             | \$9,800                   | \$0                   | \$0                | \$0                | \$9,800             |                  |
| 3. Governance and Stakeholder Involvement                           |          | 24             | \$3,920                   | \$0                   | \$0                | \$0                | \$3,920             |                  |
| 4. Vision, Mission, Goals, and Objectives                           |          | 16             | \$2,920                   | \$0                   | \$0                | \$0                | \$2,920             |                  |
| 5. Resource Management Strategies                                   |          | 32             | \$5,840                   | \$0                   | \$0                | \$0                | \$5,840             |                  |
| 6. Integration Opportunities  |          | 24             | \$4,240                   | \$0                   | \$0                | \$0                | \$4,240             |                  |
| 7. Project Evaluation and Prioritization                            |          | 48             | \$8,300                   | \$0                   | \$0                | \$0                | \$8,300             |                  |
| 8. Data Management and Technical Analysis                           |          | 16             | \$2,920                   | \$0                   | \$0                | \$0                | \$2,920             |                  |
| 9. Framework for Implementation                                     |          | 48             | \$8,300                   | \$0                   | \$0                | \$0                | \$8,300             |                  |
| Production of Administrative Draft IRWM Plan                        |          | 124            | \$19,920                  | \$0                   | \$0                | \$0                | \$19,920            |                  |
| Production of Public Draft IRWM Plan                                |          | 108            | \$17,920                  | \$0                   | \$0                | \$0                | \$17,920            |                  |
| Production of Final IRWM Plan & Executive Summary                   |          | 92             | \$14,120                  | \$0                   | \$0                | \$0                | \$14,120            |                  |
| <b>Task 4: Grant Administration</b>                                 | <b>0</b> | <b>0</b>       | <b>\$0</b>                | <b>\$0</b>            | <b>\$31,721</b>    | <b>\$0</b>         | <b>\$31,721</b>     | <b>\$31,721</b>  |
| <b>TOTAL:</b>   |          | <b>3048</b>    | <b>\$602,700</b>          | <b>\$0</b>            | <b>\$31,721</b>    | <b>\$0</b>         | <b>\$634,421</b>    | <b>\$634,421</b> |

Notes:

Costs for consultant labor based on RMC estimate.

Table 4-2: Cost Estimate for Funding Match

| Tasks  |  | Mtgs | Total Hours | Funding Match: Consultant | Funding Match: BWD | Funding Match: County | Funding Match: RCD | Total Funding Match | Task Totals |
|--|--|------|-------------|---------------------------|--------------------|-----------------------|--------------------|---------------------|-------------|
| <b>Task 1: Stakeholder Outreach and Program Administration</b>                         |  |      |             |                           |                    |                       |                    |                     |             |
| Task 1-1: Stakeholder Outreach   |  | 10   | 0           | \$0                       | \$25,600           | \$12,800              | \$12,800           | \$51,200            | \$51,200    |
| Task 1-2: RWMG / Stakeholders Committee Meetings                                       |  | 48   | 0           | \$0                       | \$4,000            | \$2,000               | \$2,000            | \$8,000             |             |
| Task 1-3: Coordination with Other IRWM Regions   |  | 6    | 0           | \$0                       | \$19,200           | \$9,600               | \$9,600            | \$38,400            |             |
|  |  |      |             |                           | \$2,400            | \$1,200               | \$1,200            | \$4,800             |             |
|  |  |      |             |                           |                    |                       |                    | \$0                 |             |
| <b>Task 2: Regional Water Resources Plans</b>  |  |      |             |                           |                    |                       |                    |                     |             |
| Task 2-1: Characterization of Current Regional Water Supply                            |  | 2    | 0           | \$0                       | \$414,283          | \$0                   | \$0                | \$414,283           |             |
| 2-1.1. <i>Compilation of Available Hydrogeologic Data</i>                              |  |      | 0           | \$0                       | \$50,169           | \$0                   | \$0                | \$50,169            |             |
| 2-1.2. <i>Collection and Analysis of New Data</i>                                      |  |      | 0           | \$0                       | \$118,992          | \$0                   | \$0                | \$118,992           |             |
| 2-1.3. <i>Conversion of Fine-Element Model into MODFLOW</i>                            |  |      | 0           | \$0                       | \$8,108            | \$0                   | \$0                | \$8,108             |             |
| 2-1-4: <i>Update the Model with Current Information</i>                                |  |      | 0           | \$0                       | \$186,613          | \$0                   | \$0                | \$186,613           |             |
| 2-1-5: <i>Prepare Reports</i>  |  |      | 0           | \$0                       | \$50,401           | \$0                   | \$0                | \$50,401            |             |
| Task 2-2: Managing the Region's Groundwater Basins                                     |  | 5    | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| 2-2.1. <i>Alternative Strategies for Establishing Managed Basins</i>                   |  |      | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| 2-2.2. <i>Mechanisms for Funding Groundwater Management Alternatives</i>               |  |      | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| 2-2.3. <i>Addressing Environmental Integrity Issues</i>                                |  |      | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| Task 2-3: Forecasting Changes in Water Quality as the Groundwater Basins are Dewatered |  | 5    | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| 2-3.1. <i>Methodologies for Developing Water Quality Forecasts</i>                     |  |      | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| 2-3.2. <i>Analyze Potential Economic Impacts and Impact Timeframes</i>                 |  |      | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| 2-3.3. <i>Addressing Environmental Integrity Issues</i>                                |  |      | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| Task 2-4: Anticipating the Impacts of Climate Change on Regional Water Resources       |  | 5    | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| 2-4.1. <i>Climate Change Vulnerability Analysis and Prioritization</i>                 |  |      | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| 2-4.2. <i>Flood Control and Other Adaptation Strategies</i>                            |  |      | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| 2-4.3. <i>Addressing Environmental Integrity Issues</i>                                |  |      | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |             |
| <b>Task 3: Updating the ABD IRWM Plan</b>  |  |      |             |                           |                    |                       |                    |                     |             |
| Task 3-1: Updates to Governance and Financing Plan                                     |  | 0    | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 | \$0         |
| Task 3-2: Refine IRWM Plan Goals, Objectives, and Priorities                           |  | 0    | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 | \$0         |
| Task 3-3: Develop Data Management Plan   |  | 0    | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 | \$0         |
| Task 3-4: Develop Performance and Monitoring Methods                                   |  | 0    | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 | \$0         |

Table 4-2: Cost Estimate for Funding Match

| Tasks   | Mtgs     | Total Hours | Funding Match: Consultant | Funding Match: BWD | Funding Match: County | Funding Match: RCD | Total Funding Match | Task Totals      |
|---|----------|-------------|---------------------------|--------------------|-----------------------|--------------------|---------------------|------------------|
| Task 3-5: Describe IRWM Process relating to Local Land Use Planning | 0        | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| Task 3-6: Prepare IRWM Plan per State Guidelines                    | 0        | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| 1. Introduction   |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| 2. Region Description, Issues and Needs                             |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| 3. Governance and Stakeholder Involvement                           |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| 4. Vision, Mission, Goals, and Objectives                           |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| 5. Resource Management Strategies                                   |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| 6. Integration Opportunities  |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| 7. Project Evaluation and Prioritization                            |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| 8. Data Management and Technical Analysis                           |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| 9. Framework for Implementation                                     |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| Production of Administrative Draft IRWM Plan                        |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| Production of Public Draft IRWM Plan                                |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| Production of Final IRWM Plan & Executive Summary                   |          | 0           | \$0                       | \$0                | \$0                   | \$0                | \$0                 |                  |
| <b>Task 4: Grant Administration</b>                                 | <b>0</b> | <b>0</b>    | <b>\$0</b>                | <b>\$0</b>         | <b>\$0</b>            | <b>\$0</b>         | <b>\$0</b>          | <b>\$0</b>       |
| <b>TOTAL:</b>   |          | <b>0</b>    | <b>0</b>                  | <b>\$439,883</b>   | <b>\$12,800</b>       | <b>\$12,800</b>    | <b>\$465,483</b>    | <b>\$465,483</b> |

Notes:

Costs are based on actual hourly rates and attendance assumptions for BWD, County, and RCD.

<< Need actual hourly rates and attendance assumptions for BWD, County, and RCD. >>>

Table 4-3: Cost Estimate for Total Grant Proposal

| Tasks   |  | Mtgs | Total Grant Request | Total Funding Match | Total Proposal Cost | % Funding Match |
|---|--|------|---------------------|---------------------|---------------------|-----------------|
| <b>Task 1: Stakeholder Outreach and Program Administration</b>                                |  |      | <b>\$254,700</b>    | <b>\$51,200</b>     | <b>\$305,900</b>    | <b>17%</b>      |
| Task 1-1: Stakeholder Outreach  |  | 10   | \$80,640            | \$8,000             | \$88,640            | 9%              |
| Task 1-2: RWMG / Stakeholders Committee Meetings  |  | 48   | \$150,760           | \$38,400            | \$189,160           | 20%             |
| Task 1-3: Coordination with Other IRWM Regions  |  | 6    | \$23,300            | \$4,800             | \$28,100            | 17%             |
| <b>Task 2: Regional Water Resources Plans</b>   |  |      | <b>\$204,500</b>    | <b>\$414,283</b>    | <b>\$618,783</b>    | <b>67%</b>      |
| Task 2-1: Characterization of Current Regional Water Supply                                   |  | 2    | \$0                 | \$414,283           | \$414,283           | 100%            |
| 2-1.1. <i>Compilation of Available Hydrogeologic Data</i>                                     |  |      | \$0                 | \$50,169            | \$50,169            | 100%            |
| 2-1.2. <i>Collection and Analysis of New Data</i>   |  |      | \$0                 | \$118,992           | \$118,992           | 100%            |
| 2-1.3. <i>Conversion of Fine-Element Model into MODFLOW</i>                                   |  |      | \$0                 | \$8,108             | \$8,108             | 100%            |
| 2-1-4: <i>Update the Model with Current Information</i>                                       |  |      | \$0                 | \$186,613           | \$186,613           | 100%            |
| 2-1-5: <i>Prepare Reports</i>   |  |      | \$0                 | \$50,401            | \$50,401            | 100%            |
| Task 2-2: <i>Managing the Region's Groundwater Basins</i>                                     |  | 5    | \$89,780            | \$0                 | \$89,780            | 0%              |
| 2-2.1. <i>Alternative Strategies for Establishing Managed Basins</i>                          |  |      | \$35,780            | \$0                 | \$35,780            | 0%              |
| 2-2.2. <i>Mechanisms for Funding Groundwater Management Alternatives</i>                      |  |      | \$41,240            | \$0                 | \$41,240            | 0%              |
| 2-2.3. <i>Addressing Environmental Integrity Issues</i>                                       |  |      | \$12,760            | \$0                 | \$12,760            | 0%              |
| Task 2-3: <i>Forecasting Changes in Water Quality as the Groundwater Basins are Dewatered</i> |  | 5    | \$66,890            | \$0                 | \$66,890            | 0%              |
| 2-3.1. <i>Methodologies for Developing Water Quality Forecasts</i>                            |  |      | \$31,960            | \$0                 | \$31,960            | 0%              |
| 2-3.2. <i>Analyze Potential Economic Impacts and Impact Timeframes</i>                        |  |      | \$22,860            | \$0                 | \$22,860            | 0%              |
| 2-3.3. <i>Addressing Environmental Integrity Issues</i>                                       |  |      | \$12,070            | \$0                 | \$12,070            | 0%              |
| Task 2-4: <i>Anticipating the Impacts of Climate Change on Regional Water Resources</i>       |  | 5    | \$47,830            | \$0                 | \$47,830            | 0%              |
| 2-4.1. <i>Climate Change Vulnerability Analysis and Prioritization</i>                        |  |      | \$22,530            | \$0                 | \$22,530            | 0%              |
| 2-4.2. <i>Flood Control and Other Adaptation Strategies</i>                                   |  |      | \$17,130            | \$0                 | \$17,130            | 0%              |
| 2-4.3. <i>Addressing Environmental Integrity Issues</i>                                       |  |      | \$8,170             | \$0                 | \$8,170             | 0%              |
| <b>Task 3: Updating the ABD IRWM Plan</b>   |  |      | <b>\$143,500</b>    | <b>\$0</b>          | <b>\$143,500</b>    | <b>0%</b>       |
| Task 3-1: <i>Updates to Governance and Financing Plan</i>                                     |  | 0    | \$9,020             | \$0                 | \$9,020             | 0%              |
| Task 3-2: <i>Refine IRWM Plan Goals, Objectives, and Priorities</i>                           |  | 0    | \$9,020             | \$0                 | \$9,020             | 0%              |
| Task 3-3: <i>Develop Data Management Plan</i>   |  | 0    | \$9,880             | \$0                 | \$9,880             | 0%              |

Table 4-3: Cost Estimate for Total Grant Proposal

| Tasks   | Mtgs      | Total Grant Request | Total Funding Match | Total Proposal Cost | % Funding Match |
|---|-----------|---------------------|---------------------|---------------------|-----------------|
| Task 3-4: Develop Performance and Monitoring Methods                | 0         | \$6,900             | \$0                 | \$6,900             | 0%              |
| Task 3-5: Describe IRWM Process relating to Local Land Use Planning | 0         | \$7,560             | \$0                 | \$7,560             | 0%              |
| Task 3-6: Prepare IRWM Plan per State Guidelines                    | 0         | \$101,120           | \$0                 | \$101,120           | 0%              |
| 1. Introduction   |           | \$2,920             | \$0                 | \$2,920             | 0%              |
| 2. Region Description, Issues and Needs                             |           | \$9,800             | \$0                 | \$9,800             | 0%              |
| 3. Governance and Stakeholder Involvement                           |           | \$3,920             | \$0                 | \$3,920             | 0%              |
| 4. Vision, Mission, Goals, and Objectives                           |           | \$2,920             | \$0                 | \$2,920             | 0%              |
| 5. Resource Management Strategies                                   |           | \$5,840             | \$0                 | \$5,840             | 0%              |
| 6. Integration Opportunities  |           | \$4,240             | \$0                 | \$4,240             | 0%              |
| 7. Project Evaluation and Prioritization                            |           | \$8,300             | \$0                 | \$8,300             | 0%              |
| 8. Data Management and Technical Analysis                           |           | \$2,920             | \$0                 | \$2,920             | 0%              |
| 9. Framework for Implementation                                     |           | \$8,300             | \$0                 | \$8,300             | 0%              |
| Production of Administrative Draft IRWM Plan                        |           | \$19,920            | \$0                 | \$19,920            | 0%              |
| Production of Public Draft IRWM Plan                                |           | \$17,920            | \$0                 | \$17,920            | 0%              |
| Production of Final IRWM Plan & Executive Summary                   |           | \$14,120            | \$0                 | \$14,120            | 0%              |
| <b>Task 4: Grant Administration</b>                                 | <b>0</b>  | <b>\$31,721</b>     | <b>\$0</b>          | <b>\$31,721</b>     | <b>0%</b>       |
| <b>TOTAL:</b>   | <b>79</b> | <b>\$634,421</b>    | <b>\$465,483</b>    | <b>\$1,099,904</b>  | <b>42%</b>      |

## Funding Match

The total funding match provided in the proposal is 42%. This funding match is comprised of the following non-State funds:

- In-kind staff labor from the Borrego Water District (BWD), the County of San Diego (County), and the Resource Conservation District of Greater San Diego County (RCD); and
- Funds from the BWD to pay for the *Characterization of Current Regional Water Supply* study in Task 2-1.

In-kind staff labor from BWD was calculated based on meeting attendance required for Stakeholder Outreach & Program Administration included under Task 1. For Task 1 in-kind labor, it is assumed that one (1) BWD staff person will attend every meeting included within Task 1 (64 total meetings), will spend four (4) hours per meeting, at an hourly billing rate of **\$100 per hour**. For Task 1 in-kind labor, it is also assumed that one (1) County and one (1) RCD staff person will attend ½ of the meetings included within Task 1 (32 total meetings), will spend four (4) hours per meeting, at an hourly billing rate of **\$100, and \$100**, respectively.

Matching funds included under Task 2-1 include actual and projected costs that either were incurred or will be incurred by BWD for the *Characterization of Current Regional Water Supply* study. **Exhibit A** to this attachment includes backup documentation that demonstrates actual costs incurred or to be incurred under the BWD-USGS contract. Costs were calculated as actual costs billed for each task, multiplied by a factor of 2/3 (approximately 67%), which takes into consideration the funding agreement between BWD and USGS.

## Detailed Work Item Budgets

The following sections describe how the budget estimates included within Tables 4-1 through Table 4-3 were developed. This includes supporting information for the budget such as labor categories, hourly rates, and labor time estimates.

### Task 1: Stakeholder Outreach and Program Administration

The total costs for Task 1: Stakeholder Outreach and Program Administration are \$305,900. Of this total amount, \$51,200 will be provided by BWD for in-kind labor (matching funds), and \$254,700 is being requested under the *Proposition 84 Planning Grant*. Table 4-4 below provides a detailed listing of all applicable costs. All costs are based upon estimates of the amount of hours required to complete each task and the persons required to complete each task.

**Table 4-4: Budget Breakdown for Task 1: Stakeholder Outreach & Program Administration**

| Task                       | Discipline      | Hourly Wage (\$/hr) | Number of Hours | Funding Match   | Grant Request    | Total            |
|----------------------------|-----------------|---------------------|-----------------|-----------------|------------------|------------------|
| <b>Consultant Labor</b>    |                 |                     |                 |                 |                  |                  |
| 1-1                        | Principal       | \$265               | 16              | \$0             | \$4,240          | \$4,240          |
| 1-1                        | Project Manager | \$200               | 160             | \$0             | \$32,000         | \$32,000         |
| 1-1                        | Project Planner | \$165               | 160             | \$0             | \$26,400         | \$26,400         |
| 1-1                        | Graphics        | \$125               | 16              | \$0             | \$2,000          | \$2,000          |
| 1-1                        | Administrator   | \$95                | 0               | \$0             | \$10             | \$10             |
| 1-1                        | Facilitator     | \$200               | 80              | \$0             | \$16,000         | \$16,000         |
| <b>In-Kind Staff Labor</b> |                 |                     |                 |                 |                  |                  |
| 1-1                        | BWD Staff       | \$100               | 40              | \$4,000         | \$0              | \$4,000          |
| 1-1                        | County Staff    | \$100               | 20              | \$2,000         | \$0              | \$2,000          |
| 1-1                        | RCD Staff       | \$100               | 20              | \$2,000         | \$0              | \$2,000          |
| <b>Task 1-1 Subtotal</b>   |                 |                     |                 | <b>\$8,000</b>  | <b>\$80,640</b>  | <b>\$88,640</b>  |
| <b>Consultant Labor</b>    |                 |                     |                 |                 |                  |                  |
| 1-2                        | Principal       | \$265               | 40              | \$0             | \$10,600         | \$10,600         |
| 1-2                        | Project Manager | \$200               | 384             | \$0             | \$76,800         | \$76,800         |
| 1-2                        | Project Planner | \$165               | 240             | \$0             | \$39,600         | \$39,600         |
| 1-2                        | Graphics        | \$125               | 0               | \$0             | \$0              | \$0              |
| 1-2                        | Administrator   | \$95                | 48              | \$0             | \$4,560          | \$4,560          |
| 1-2                        | Facilitator     | \$200               | 96              | \$0             | \$19,200         | \$19,200         |
| <b>In-Kind Staff Labor</b> |                 |                     |                 |                 |                  |                  |
| 1-2                        | BWD Staff       | \$100               | 192             | \$19,200        | \$0              | \$19,200         |
| 1-2                        | County Staff    | \$100               | 96              | \$9,600         | \$0              | \$9,600          |
| 1-2                        | RCD Staff       | \$100               | 96              | \$9,600         | \$0              | \$9,600          |
| <b>Task 1-2 Subtotal</b>   |                 |                     |                 | <b>\$38,400</b> | <b>\$150,760</b> | <b>\$189,160</b> |
| <b>Consultant Labor</b>    |                 |                     |                 |                 |                  |                  |
| 1-3                        | Principal       | \$265               | 8               | \$0             | \$2,120          | \$2,120          |
| 1-3                        | Project Manager | \$200               | 72              | \$0             | \$14,400         | \$14,400         |
| 1-3                        | Project Planner | \$165               | 12              | \$0             | \$1,980          | \$1,980          |
| 1-3                        | Graphics        | \$125               | 0               | \$0             | \$0              | \$0              |
| 1-3                        | Administrator   | \$95                | 0               | \$0             | \$0              | \$0              |
| 1-3                        | Facilitator     | \$200               | 24              | \$0             | \$4,800          | \$4,800          |
| <b>In-Kind Staff Labor</b> |                 |                     |                 |                 |                  |                  |
| 1-3                        | BWD Staff       | \$100               | 24              | \$2,400         | \$0              | \$2,400          |
| 1-3                        | County Staff    | \$100               | 12              | \$1,200         | \$0              | \$1,200          |
| 1-3                        | RCD Staff       | \$100               | 12              | \$1,200         | \$0              | \$1,200          |
| <b>Task 1-3 Subtotal</b>   |                 |                     |                 | <b>\$4,800</b>  | <b>\$23,300</b>  | <b>\$28,100</b>  |
| <b>Task 1 Total</b>        |                 |                     |                 | <b>\$51,200</b> | <b>\$254,700</b> | <b>\$305,900</b> |

**Task 1-1 Stakeholder Outreach (Including DACs and Tribes):**

This task includes up to 10 total meetings, including the following:

- Up to six (6) public workshops, and
- Up to four (4) tribal and DAC outreach meetings.

It is assumed that each public workshop and DAC and tribal meeting will require approximately 8 hours from the team members participating in each meeting (refer to the hourly assumptions in Table 4-4

above). In addition to meetings, this task will include production of outreach materials. The costs for outreach materials are factored into the hourly costs for the consultant team anticipated to complete the majority of this work. As such, the total costs for this task are those shown above in Table 4-4, and total \$88,640. \$8,000 of this is anticipated as funding match, and \$80,640 is part of the grant request.

**Task 1-2 RWMG and Stakeholders Committee Meetings (Including DACs and Tribes):**

This task includes up to 48 total meetings, including RWMG Meetings and Stakeholders Committee Meetings. It is assumed that half (approximately 12) of the Stakeholders Committee meetings will be held in-person at BWD in Borrego Springs, and half will be held via conference call and webinar. Any costs associated with production of materials such as handouts, meeting notes, and webinars are included within the person-hours estimate included within Table 4-4. As such, the total costs for this task are those shown below in Table 4-4, and total \$189,160. \$38,400 of this is anticipated as funding match, and \$150,760 is included in the grant request.

**Task 1-3 Coordination with other IRWM Regions:**

This task includes up to six (6) total meetings involving inter-regional IRWM regions within the Colorado River Funding Area. Any costs associated with production of materials such as handouts, meeting notes, and webinars are included within the person-hours estimate included within Table 4-4. As such, the total costs for this task are those shown below in Table 4-4, and total \$28,100. \$4,800 of this is anticipated as funding match, and \$23,300 is included in the grant request.

**Task 2: Regional Water Resources Plans**

The total cost for Task 2: Regional Water Resources Plans is \$618,783. Table 4-5 below provides a detailed listing of all applicable costs for each task included within Task 2. All costs are based upon estimates of the amount of hours required to complete each task and the persons required to complete each task. For Task 2-1, costs are presented in lump sums because they represent actual incurred costs (refer to **Exhibit A**). The following sections provide cost breakdowns for each task on a subtask level.

**Table 4-5: Budget Breakdown for Task 2 Regional Water Resources Plans**

| Task                       | Discipline                                  | Hourly Wage (\$/hr) | Number of Hours | Funding Match    | Grant Request    | Total            |
|----------------------------|---|---------------------|-----------------|------------------|------------------|------------------|
| <b>Consultant Labor</b>    |   |                     |                 |                  |                  |                  |
| 2-1                        | All Consultant Disciplines                  | N/A                 | 0               | \$0              | \$0              | \$0              |
| <b>BWD and USGS Input</b>  |   |                     |                 |                  |                  |                  |
| 2-1                        | Lump Sum (refer to Table 4-6 and Exhibit A) |                     |                 | \$414,283        | \$0              | \$414,283        |
| <b>Task 2-1 Subtotal</b>   |   |                     |                 | <b>\$414,283</b> | <b>\$0</b>       | <b>\$414,283</b> |
| <b>Consultant Labor</b>    |   |                     |                 |                  |                  |                  |
| 2-2                        | Principal                                   | \$265               | 56              | \$0              | \$14,840         | \$14,840         |
| 2-2                        | Sr. Project Manager                         | \$225               | 32              | \$0              | \$7,200          | \$7,200          |
| 2-2                        | Project Manager                             | \$200               | 108             | \$0              | \$21,600         | \$21,600         |
| 2-2                        | Project Engineer                            | \$185               | 60              | \$0              | \$11,100         | \$11,100         |
| 2-2                        | Project Planner                             | \$165               | 16              | \$0              | \$2,640          | \$2,640          |
| 2-2                        | Graphics                                    | \$125               | 8               | \$0              | \$1,000          | \$1,000          |
| 2-2                        | Administrator                               | \$95                | 0               | \$0              | \$0              | \$0              |
| 2-2                        | Facilitator                                 | \$200               | 32              | \$0              | \$6,400          | \$6,400          |
| 2-2                        | Economist                                   | \$200               | 125             | \$0              | \$25,000         | \$25,000         |
| <b>In-Kind Staff Labor</b> |   |                     |                 |                  |                  |                  |
| 2-2                        | All RWMG Staff                              | N/A                 | 0               | \$0              | \$0              | \$0              |
| <b>Task 2-2 Subtotal</b>   |   |                     |                 | <b>\$0</b>       | <b>\$89,780</b>  | <b>\$89,780</b>  |
| <b>Consultant Labor</b>    |   |                     |                 |                  |                  |                  |
| 2-3                        | Principal                                   | \$265               | 10              | \$0              | \$2,650          | \$2,650          |
| 2-3                        | Sr. Project Manager                         | \$225               | 60              | \$0              | \$13,500         | \$13,500         |
| 2-3                        | Project Manager                             | \$200               | 108             | \$0              | \$21,600         | \$21,600         |
| 2-3                        | Project Engineer                            | \$185               | 60              | \$0              | \$11,100         | \$11,100         |
| 2-3                        | Project Planner                             | \$165               | 16              | \$0              | \$2,640          | \$2,640          |
| 2-3                        | Graphics                                    | \$125               | 8               | \$0              | \$1,000          | \$1,000          |
| 2-3                        | Administrator                               | \$95                | 0               | \$0              | \$0              | \$0              |
| 2-3                        | Facilitator                                 | \$200               | 32              | \$0              | \$6,400          | \$6,400          |
| 2-3                        | Economist                                   | \$200               | 40              | \$0              | \$8,000          | \$8,000          |
| <b>In-Kind Staff Labor</b> |   |                     |                 |                  |                  |                  |
| 2-3                        | All RWMG Staff                              | N/A                 | 0               | \$0              | \$0              | \$0              |
| <b>Task 2-3 Subtotal</b>   |   |                     |                 | <b>\$0</b>       | <b>\$66,890</b>  | <b>\$66,890</b>  |
| <b>Consultant Labor</b>    |   |                     |                 |                  |                  |                  |
| 2-4                        | Principal                                   | \$265               | 6               | \$0              | \$1,590          | \$1,590          |
| 2-4                        | Sr. Project Manager                         | \$225               | 48              | \$0              | \$10,800         | \$10,800         |
| 2-4                        | Project Manager                             | \$200               | 60              | \$0              | \$12,000         | \$12,000         |
| 2-4                        | Project Engineer                            | \$185               | 0               | \$0              | \$0              | \$0              |
| 2-4                        | Project Planner                             | \$165               | 136             | \$0              | \$22,440         | \$22,440         |
| 2-4                        | Graphics                                    | \$125               | 8               | \$0              | \$1,000          | \$1,000          |
| 2-4                        | Administrator                               | \$95                | 0               | \$0              | \$0              | \$0              |
| 2-4                        | Facilitator                                 | \$200               | 0               | \$0              | \$0              | \$0              |
| 2-4                        | Economist                                   | \$200               | 0               | \$0              | \$0              | \$0              |
| <b>In-Kind Staff Labor</b> |   |                     |                 |                  |                  |                  |
| 2-4                        | All RWMG Staff                              | N/A                 | 0               | \$0              | \$0              | \$0              |
| <b>Task 2-4 Subtotal</b>   |   |                     |                 | <b>\$0</b>       | <b>\$47,830</b>  | <b>\$47,830</b>  |
| <b>Task 2 Total</b>        |   |                     |                 | <b>\$414,283</b> | <b>\$204,500</b> | <b>\$618,783</b> |

**Task 2-1 Characterization of Current Regional Water Supply**

The total costs for this task are included in detail in Table 4-6 below. Please note that the costs included within this table are in the form of lump sum because these costs reflect actual costs that have been expended through the BWD-USGS contract. Supporting documentation for these costs, which are being utilized as funding match, are included within **Exhibit A** of this attachment.

**Table 4-6: Budget Breakdown for Task 2-1 Characterization of Current Regional Water Supply**

| Task                  | Subtasks                                      | Lump Sum  | Total            | Funding Match    | Grant Request |
|-----------------------|---|-----------|------------------|------------------|---------------|
| 2-1.1                 | Compilation of Available Hydrogeologic Data   | \$50,169  | \$50,169         | \$50,169         | \$0           |
| 2-1.2                 | Collection and Analysis of New Data           | \$118,992 | \$118,992        | \$118,992        | \$0           |
| 2-1.3                 | Conversion of Fine-Element Model into MODFLOW | \$8,108   | \$8,108          | \$8,108          | \$0           |
| 2-1.4                 | Update the Model with Current Information     | \$186,613 | \$186,613        | \$186,613        | \$0           |
| 2-1.5                 | Prepare Reports                               | \$50,401  | \$50,401         | \$50,401         | \$0           |
| <b>Task 2-1 Total</b> |   |           | <b>\$414,283</b> | <b>\$414,283</b> | <b>\$0</b>    |

**Task 2-2 Managing the Region’s Groundwater Basins:**

This task includes up to five (5) Stakeholders Committee meetings; draft and final Groundwater Management Technical Memorandum; and integration of conclusions and results from the Groundwater Management Technical Memorandum into the ABD IRWM Plan. The costs for producing deliverables are factored into the hourly costs for the consultant team anticipated to complete this work. As such, the total costs for this task are those shown below in Table 4-7, and total \$89,780. \$0 of this is anticipated as funding match, and \$89,780 is part of the grant request.

**Table 4-7: Budget Breakdown for Task 2-2 Managing the Region’s Groundwater Basins**

| Task                          | Discipline          | Hourly Wage (\$/hr) | Number of Hours | Funding Match | Grant Request   | Total           |
|-------------------------------|---------------------|---------------------|-----------------|---------------|-----------------|-----------------|
| <b>Consultant Labor</b>       |                     |                     |                 |               |                 |                 |
| 2-2.1                         | Principal           | \$265               | 32              | \$0           | \$8,480         | \$8,480         |
| 2-2.1                         | Sr. Project Manager | \$225               | 0               | \$0           | \$0             | \$0             |
| 2-2.1                         | Project Manager     | \$200               | 60              | \$0           | \$12,000        | \$12,000        |
| 2-2.1                         | Project Engineer    | \$185               | 60              | \$0           | \$11,100        | \$11,100        |
| 2-2.1                         | Project Planner     | \$165               | 0               | \$0           | \$0             | \$0             |
| 2-2.1                         | Graphics            | \$125               | 8               | \$0           | \$1,000         | \$1,000         |
| 2-2.1                         | Administrator       | \$95                | 0               | \$0           | \$0             | \$0             |
| 2-2.1                         | Facilitator         | \$200               | 32              | \$0           | \$3,200         | \$3,200         |
| 2-2.1                         | Economist           | \$200               | 40              | \$0           | \$0             | \$0             |
| <b>In-Kind Staff Labor</b>    |                     |                     |                 |               |                 |                 |
| 2-2.1                         | All RWMG Staff      | N/A                 | 0               | \$0           | \$0             | \$0             |
| <b>Subtask 2-2.1 Subtotal</b> |                     |                     |                 | <b>\$0</b>    | <b>\$35,780</b> | <b>\$35,780</b> |
| <b>Consultant Labor</b>       |                     |                     |                 |               |                 |                 |
| 2-2.2                         | Principal           | \$265               | 16              | \$0           | \$4,240         | \$4,240         |
| 2-2.2                         | Sr. Project Manager | \$225               | 32              | \$0           | \$7,200         | \$7,200         |
| 2-2.2                         | Project Manager     | \$200               | 8               | \$0           | \$1,600         | \$1,600         |
| 2-2.2                         | Project Engineer    | \$185               | 0               | \$0           | \$0             | \$0             |
| 2-2.2                         | Project Planner     | \$165               | 0               | \$0           | \$0             | \$0             |
| 2-2.2                         | Graphics            | \$125               | 0               | \$0           | \$0             | \$0             |
| 2-2.2                         | Administrator       | \$95                | 0               | \$0           | \$0             | \$0             |
| 2-2.2                         | Facilitator         | \$200               | 16              | \$0           | \$3,200         | \$3,200         |
| 2-2.2                         | Economist           | \$200               | 125             | \$0           | \$25,000        | \$25,000        |
| <b>In-Kind Staff Labor</b>    |                     |                     |                 |               |                 |                 |
| 2-2.2                         | All RWMG Staff      | N/A                 | 0               | \$0           | \$0             | \$0             |
| <b>Subtask 2-2.2 Subtotal</b> |                     |                     |                 | <b>\$0</b>    | <b>\$41,240</b> | <b>\$41,240</b> |
| <b>Consultant Labor</b>       |                     |                     |                 |               |                 |                 |
| 2-2.3                         | Principal           | \$265               | 8               | \$0           | \$2,120         | \$2,120         |
| 2-2.3                         | Sr. Project Manager | \$225               | 0               | \$0           | \$0             | \$0             |
| 2-2.3                         | Project Manager     | \$200               | 40              | \$0           | \$8,000         | \$8,000         |
| 2-2.3                         | Project Engineer    | \$185               | 0               | \$0           | \$0             | \$0             |
| 2-2.3                         | Project Planner     | \$165               | 16              | \$0           | \$2,640         | \$2,640         |
| 2-2.3                         | Graphics            | \$125               | 0               | \$0           | \$0             | \$0             |
| 2-2.3                         | Administrator       | \$95                | 0               | \$0           | \$0             | \$0             |
| 2-2.3                         | Facilitator         | \$200               | 0               | \$0           | \$0             | \$0             |
| 2-2.3                         | Economist           | \$200               | 0               | \$0           | \$0             | \$0             |
| <b>In-Kind Staff Labor</b>    |                     |                     |                 |               |                 |                 |
| 2-2.3                         | All RWMG Staff      | N/A                 | 0               | \$0           | \$0             | \$0             |
| <b>Subtask 2-2.3 Subtotal</b> |                     |                     |                 | <b>\$0</b>    | <b>\$12,760</b> | <b>\$12,760</b> |
| <b>Task 2-2 Total</b>         |                     |                     |                 | <b>\$0</b>    | <b>\$89,780</b> | <b>\$89,780</b> |

**Task 2-3 Forecasting Changes in Water Quality as the Groundwater Basins are Dewatered**

This task includes up to five (5) Stakeholders Committee meetings; draft and final Water Quality Technical Memorandum; and integration of conclusions and results from the Water Quality Technical Memorandum into the ABD IRWM Plan. The costs for producing deliverables are factored into the

hourly costs for the consultant team anticipated to complete this work. As such, the total costs for this task are those shown below in Table 4-8, and total \$66,890. \$0 of this is anticipated as funding match, and \$66,890 is part of the grant request.

**Table 4-8: Budget Breakdown for Task 2-3 Forecasting Changes in Water Quality as the Groundwater Basins are Dewatered**

| Task                          | Discipline          | Hourly Wage (\$/hr) | Number of Hours | Funding Match | Grant Request   | Total           |
|-------------------------------|---------------------|---------------------|-----------------|---------------|-----------------|-----------------|
| <b>Consultant Labor</b>       |                     |                     |                 |               |                 |                 |
| 2-3.1                         | Principal           | \$265               | 4               | \$0           | \$1,060         | \$1,060         |
| 2-3.1                         | Sr. Project Manager | \$225               | 16              | \$0           | \$3,600         | \$3,600         |
| 2-3.1                         | Project Manager     | \$200               | 60              | \$0           | \$12,000        | \$12,000        |
| 2-3.1                         | Project Engineer    | \$185               | 60              | \$0           | \$11,100        | \$11,100        |
| 2-3.1                         | Project Planner     | \$165               | 0               | \$0           | \$0             | \$0             |
| 2-3.1                         | Graphics            | \$125               | 8               | \$0           | \$1,000         | \$1,000         |
| 2-3.1                         | Administrator       | \$95                | 0               | \$0           | \$0             | \$0             |
| 2-3.1                         | Facilitator         | \$200               | 16              | \$0           | \$3,200         | \$3,200         |
| 2-3.1                         | Economist           | \$200               | 0               | \$0           | \$0             | \$0             |
| <b>In-Kind Staff Labor</b>    |                     |                     |                 |               |                 |                 |
| 2-3.1                         | All RWMG Staff      | N/A                 | 0               | \$0           | \$0             | \$0             |
| <b>Subtask 2-3.1 Subtotal</b> |                     |                     |                 | <b>\$0</b>    | <b>\$31,960</b> | <b>\$31,960</b> |
| <b>Consultant Labor</b>       |                     |                     |                 |               |                 |                 |
| 2-3.2                         | Principal           | \$265               | 4               | \$0           | \$1,060         | \$1,060         |
| 2-3.2                         | Sr. Project Manager | \$225               | 40              | \$0           | \$9,000         | \$9,000         |
| 2-3.2                         | Project Manager     | \$200               | 8               | \$0           | \$1,600         | \$1,600         |
| 2-3.2                         | Project Engineer    | \$185               | 0               | \$0           | \$0             | \$0             |
| 2-3.2                         | Project Planner     | \$165               | 0               | \$0           | \$0             | \$0             |
| 2-3.2                         | Graphics            | \$125               | 0               | \$0           | \$0             | \$0             |
| 2-3.2                         | Administrator       | \$95                | 0               | \$0           | \$0             | \$0             |
| 2-3.2                         | Facilitator         | \$200               | 16              | \$0           | \$3,200         | \$3,200         |
| 2-3.2                         | Economist           | \$200               | 40              | \$0           | \$8,000         | \$8,000         |
| <b>In-Kind Staff Labor</b>    |                     |                     |                 |               |                 |                 |
| 2-3.2                         | All RWMG Staff      | N/A                 | 0               | \$0           | \$0             | \$0             |
| <b>Subtask 2-3.2 Subtotal</b> |                     |                     |                 | <b>\$0</b>    | <b>\$22,860</b> | <b>\$22,860</b> |
| <b>Consultant Labor</b>       |                     |                     |                 |               |                 |                 |
| 2-3.3                         | Principal           | \$265               | 2               | \$0           | \$530           | \$530           |
| 2-3.3                         | Sr. Project Manager | \$225               | 4               | \$0           | \$900           | \$900           |
| 2-3.3                         | Project Manager     | \$200               | 40              | \$0           | \$8,000         | \$8,000         |
| 2-3.3                         | Project Engineer    | \$185               | 0               | \$0           | \$0             | \$0             |
| 2-3.3                         | Project Planner     | \$165               | 16              | \$0           | \$2,640         | \$2,640         |
| 2-3.3                         | Graphics            | \$125               | 0               | \$0           | \$0             | \$0             |
| 2-3.3                         | Administrator       | \$95                | 0               | \$0           | \$0             | \$0             |
| 2-3.3                         | Facilitator         | \$200               | 0               | \$0           | \$0             | \$0             |
| 2-3.3                         | Economist           | \$200               | 0               | \$0           | \$0             | \$0             |
| <b>In-Kind Staff Labor</b>    |                     |                     |                 |               |                 |                 |
| 2-3.3                         | All RWMG Staff      | N/A                 | 0               | \$0           | \$0             | \$0             |
| <b>Subtask 2-3.3 Subtotal</b> |                     |                     |                 | <b>\$0</b>    | <b>\$12,070</b> | <b>\$12,070</b> |
| <b>Task 2-3 Total</b>         |                     |                     |                 | <b>\$0</b>    | <b>\$66,890</b> | <b>\$66,890</b> |

**Task 2-4 Anticipating the Impacts of Climate Change on Regional Water Resources**

This task includes up to five (5) Stakeholders Committee meetings; draft and final Climate Change Technical Memorandum; and integration of conclusions and results from the Climate Change Technical Memorandum into the ABD IRWM Plan. The costs for producing deliverables are factored into the hourly costs for the consultant team anticipated to complete this work. As such, the total costs for this task are those shown below in Table 4-9, and total \$47,830. \$0 of this is anticipated as funding match, and \$47,830 is part of the grant request.

**Table 4-9: Budget Breakdown for Task 2-4 Anticipating the Impacts of Climate Change on Regional Water Resources**

| Task                          | Discipline          | Hourly Wage (\$/hr) | Number of Hours | Funding Match | Grant Request   | Total           |
|-------------------------------|---------------------|---------------------|-----------------|---------------|-----------------|-----------------|
| <b>Consultant Labor</b>       |                     |                     |                 |               |                 |                 |
| 2-4.1                         | Principal           | \$265               | 2               | \$0           | \$530           | \$530           |
| 2-4.1                         | Sr. Project Manager | \$225               | 24              | \$0           | \$5,400         | \$5,400         |
| 2-4.1                         | Project Manager     | \$200               | 12              | \$0           | \$2,400         | \$2,400         |
| 2-4.1                         | Project Engineer    | \$185               | 0               | \$0           | \$0             | \$0             |
| 2-4.1                         | Project Planner     | \$165               | 80              | \$0           | \$13,200        | \$13,200        |
| 2-4.1                         | Graphics            | \$125               | 8               | \$0           | \$1,000         | \$1,000         |
| 2-4.1                         | Administrator       | \$95                | 0               | \$0           | \$0             | \$0             |
| 2-4.1                         | Facilitator         | \$200               | 0               | \$0           | \$0             | \$0             |
| 2-4.1                         | Economist           | \$200               | 0               | \$0           | \$0             | \$0             |
| <b>In-Kind Staff Labor</b>    |                     |                     |                 |               |                 |                 |
| 2-4.1                         | All RWMG Staff      | N/A                 | 0               | \$0           | \$0             | \$0             |
| <b>Subtask 2-4.1 Subtotal</b> |                     |                     |                 | <b>\$0</b>    | <b>\$22,530</b> | <b>\$22,530</b> |
| <b>Consultant Labor</b>       |                     |                     |                 |               |                 |                 |
| 2-4.2                         | Principal           | \$265               | 2               | \$0           | \$530           | \$530           |
| 2-4.2                         | Sr. Project Manager | \$225               | 16              | \$0           | \$3,600         | \$3,600         |
| 2-4.2                         | Project Manager     | \$200               | 32              | \$0           | \$6,400         | \$6,400         |
| 2-4.2                         | Project Engineer    | \$185               | 0               | \$0           | \$0             | \$0             |
| 2-4.2                         | Project Planner     | \$165               | 40              | \$0           | \$6,600         | \$6,600         |
| 2-4.2                         | Graphics            | \$125               | 0               | \$0           | \$0             | \$0             |
| 2-4.2                         | Administrator       | \$95                | 0               | \$0           | \$0             | \$0             |
| 2-4.2                         | Facilitator         | \$200               | 0               | \$0           | \$0             | \$0             |
| 2-4.2                         | Economist           | \$200               | 0               | \$0           | \$0             | \$0             |
| <b>In-Kind Staff Labor</b>    |                     |                     |                 |               |                 |                 |
| 2-4.2                         | All RWMG Staff      | N/A                 | 0               | \$0           | \$0             | \$0             |
| <b>Subtask 2-4.2 Subtotal</b> |                     |                     |                 | <b>\$0</b>    | <b>\$17,130</b> | <b>\$17,130</b> |
| <b>Consultant Labor</b>       |                     |                     |                 |               |                 |                 |
| 2-4.3                         | Principal           | \$265               | 2               | \$0           | \$530           | \$530           |
| 2-4.3                         | Sr. Project Manager | \$225               | 8               | \$0           | \$1,800         | \$1,800         |
| 2-4.3                         | Project Manager     | \$200               | 16              | \$0           | \$3,200         | \$3,200         |
| 2-4.3                         | Project Engineer    | \$185               | 0               | \$0           | \$0             | \$0             |
| 2-4.3                         | Project Planner     | \$165               | 16              | \$0           | \$2,640         | \$2,640         |
| 2-4.3                         | Graphics            | \$125               | 0               | \$0           | \$0             | \$0             |
| 2-4.3                         | Administrator       | \$95                | 0               | \$0           | \$0             | \$0             |
| 2-4.3                         | Facilitator         | \$200               | 0               | \$0           | \$0             | \$0             |
| 2-4.3                         | Economist           | \$200               | 0               | \$0           | \$0             | \$0             |
| <b>In-Kind Staff Labor</b>    |                     |                     |                 |               |                 |                 |

|                               |                |     |   |            |                 |                 |
|-------------------------------|----------------|-----|---|------------|-----------------|-----------------|
| 2-4.3                         | All RWMG Staff | N/A | 0 | \$0        | \$0             | \$0             |
| <b>Subtask 2-4.3 Subtotal</b> |                |     |   | <b>\$0</b> | <b>\$8,170</b>  | <b>\$8,170</b>  |
| <b>Task 2-4 Total</b>         |                |     |   | <b>\$0</b> | <b>\$47,830</b> | <b>\$47,830</b> |

**Task 3: Updating the ABD IRWM Plan**

The total cost for Task 3: Updating the ABD IRWM Plan is \$143,500. Table 4-10 below provides a detailed listing of all applicable costs for each task included within Task 3. All costs are based upon estimates of the amount of hours required to complete each task and the persons required to complete each task. The following sections provide cost breakdowns for each task on a subtask level.

**Table 4-10: Budget Breakdown for Task 3 Updating the ABD IRWM Plan**

| Task                | Discipline                     | Hourly Wage (\$/hr) | Number of Hours | Total            | Funding Match | Grant Request    |
|---------------------|--------------------------------|---------------------|-----------------|------------------|---------------|------------------|
| 3-1                 | Lump Sum (refer to Table 4-11) |                     |                 | \$9,020          | \$0           | \$9,020          |
| 3-2                 | Lump Sum (refer to Table 4-12) |                     |                 | \$9,020          | \$0           | \$9,020          |
| 3-3                 | Lump Sum (refer to Table 4-13) |                     |                 | \$9,880          | \$0           | \$9,880          |
| 3-4                 | Lump Sum (refer to Table 4-14) |                     |                 | \$6,900          | \$0           | \$6,900          |
| 3-5                 | Lump Sum (refer to Table 4-15) |                     |                 | \$7,560          | \$0           | \$7,560          |
| 3-6                 | Lump Sum (refer to Table 4-16) |                     |                 | \$101,120        | \$0           | \$101,120        |
| <b>Task 3 Total</b> |                                |                     |                 | <b>\$143,500</b> | <b>\$0</b>    | <b>\$143,500</b> |

**Task 3-1 Updates to Governance and Financing Plan**

This task includes ss-needed Stakeholders Committee meetings; draft and final Long-Term Governance recommendations; and draft and final formal governance agreements. Please note that budget for the Stakeholders Committee meetings included within this task are included under Subtask 1-2, and not budgeted here. The costs for producing deliverables are factored into the hourly costs for the consultant team anticipated to complete this work. As such, the total costs for this task are those shown below in Table 4-11, and total \$9,020. \$0 of this is anticipated as funding match, and \$9,020 is part of the grant request.

**Table 4-11: Budget Breakdown for Task 3-1 Updates to Governance and Financing Plan**

| Task                       | Discipline          | Hourly Wage (\$/hr) | Number of Hours | Funding Match | Grant Request  | Total          |
|----------------------------|---------------------|---------------------|-----------------|---------------|----------------|----------------|
| <b>Consultant Labor</b>    |                     |                     |                 |               |                |                |
| 3-1                        | Principal           | \$265               | 4               | \$0           | \$1,060        | \$1,060        |
| 3-1                        | Sr. Project Manager | \$225               | 0               | \$0           | \$0            | \$0            |
| 3-1                        | Project Manager     | \$200               | 20              | \$0           | \$4,000        | \$4,000        |
| 3-1                        | Project Engineer    | \$185               | 0               | \$0           | \$0            | \$0            |
| 3-1                        | Project Planner     | \$165               | 24              | \$0           | \$3,960        | \$3,960        |
| 3-1                        | Graphics            | \$125               | 0               | \$0           | \$0            | \$0            |
| 3-1                        | Administrator       | \$95                | 0               | \$0           | \$0            | \$0            |
| 3-1                        | Facilitator         | \$200               | 0               | \$0           | \$0            | \$0            |
| 3-1                        | Economist           | \$200               | 0               | \$0           | \$0            | \$0            |
| <b>In-Kind Staff Labor</b> |                     |                     |                 |               |                |                |
| 3-1                        | All RWMG Staff      | N/A                 | 0               | \$0           | \$0            | \$0            |
| <b>Task 3-1 Total</b>      |                     |                     |                 | <b>\$0</b>    | <b>\$9,020</b> | <b>\$9,020</b> |

**Task 3-2 Refine IRWM Plan Goals, Objectives, and Priorities**

This task includes as-needed Stakeholders Committee meetings; and draft and final IRWM Plan goals, objectives, and priorities. Please note that budget for the Stakeholders Committee meetings included within this task are included under Subtask 1-2, and not budgeted here. The costs for producing deliverables are factored into the hourly costs for the consultant team anticipated to complete this work. As such, the total costs for this task are those shown below in Table 4-12, and total \$9,020. \$0 of this is anticipated as funding match, and \$9,020 is part of the grant request.

**Table 4-12: Budget Breakdown for Task 3-2 Refine IRWM Plan Goals, Objectives, and Priorities**

| Task                       | Discipline          | Hourly Wage (\$/hr) | Number of Hours | Funding Match | Grant Request  | Total          |
|----------------------------|---------------------|---------------------|-----------------|---------------|----------------|----------------|
| <b>Consultant Labor</b>    |                     |                     |                 |               |                |                |
| 3-2                        | Principal           | \$265               | 4               | \$0           | \$1,060        | \$1,060        |
| 3-2                        | Sr. Project Manager | \$225               | 0               | \$0           | \$0            | \$0            |
| 3-2                        | Project Manager     | \$200               | 20              | \$0           | \$4,000        | \$4,000        |
| 3-2                        | Project Engineer    | \$185               | 0               | \$0           | \$0            | \$0            |
| 3-2                        | Project Planner     | \$165               | 24              | \$0           | \$3,960        | \$3,960        |
| 3-2                        | Graphics            | \$125               | 0               | \$0           | \$0            | \$0            |
| 3-2                        | Administrator       | \$95                | 0               | \$0           | \$0            | \$0            |
| 3-2                        | Facilitator         | \$200               | 0               | \$0           | \$0            | \$0            |
| 3-2                        | Economist           | \$200               | 0               | \$0           | \$0            | \$0            |
| <b>In-Kind Staff Labor</b> |                     |                     |                 |               |                |                |
| 3-2                        | All RWMG Staff      | N/A                 | 0               | \$0           | \$0            | \$0            |
| <b>Task 3-2 Total</b>      |                     |                     |                 | <b>\$0</b>    | <b>\$9,020</b> | <b>\$9,020</b> |

**Task 3-3 Develop Data Management Plan**

This task includes regional DMS with GIS data layers; and draft and final description of the ABD Data Management Plan. The costs for producing deliverables are factored into the hourly costs for the consultant team anticipated to complete this work. As such, the total costs for this task are those shown below in Table 4-13, and total \$9,880. \$0 of this is anticipated as funding match, and \$9,880 is part of the grant request.

**Table 4-13: Budget Breakdown for Task 3-3 Develop Data Management Plan**

| Task                       | Discipline          | Hourly Wage (\$/hr) | Number of Hours | Funding Match | Grant Request  | Total          |
|----------------------------|---------------------|---------------------|-----------------|---------------|----------------|----------------|
| <b>Consultant Labor</b>    |                     |                     |                 |               |                |                |
| 3-3                        | Principal           | \$265               | 4               | \$0           | \$1,060        | \$1,060        |
| 3-3                        | Sr. Project Manager | \$225               | 16              | \$0           | \$3,600        | \$3,600        |
| 3-3                        | Project Manager     | \$200               | 8               | \$0           | \$1,600        | \$1,600        |
| 3-3                        | Project Engineer    | \$185               | 16              | \$0           | \$2,960        | \$2,960        |
| 3-3                        | Project Planner     | \$165               | 4               | \$0           | \$660          | \$660          |
| 3-3                        | Graphics            | \$125               | 0               | \$0           | \$0            | \$0            |
| 3-3                        | Administrator       | \$95                | 0               | \$0           | \$0            | \$0            |
| 3-3                        | Facilitator         | \$200               | 0               | \$0           | \$0            | \$0            |
| 3-3                        | Economist           | \$200               | 0               | \$0           | \$0            | \$0            |
| <b>In-Kind Staff Labor</b> |                     |                     |                 |               |                |                |
| 3-3                        | All RWMG Staff      | N/A                 | 0               | \$0           | \$0            | \$0            |
| <b>Task 3-3 Total</b>      |                     |                     |                 | <b>\$0</b>    | <b>\$9,880</b> | <b>\$9,880</b> |

**Task 3-4 Develop Performance and Monitoring Methods**

This task includes as-needed Stakeholders Committee meetings; draft and final IRWM Plan metrics; draft and final IRWM Plan performance and monitoring methods; and draft and final template for the Annual Report. Please note that budget for the Stakeholders Committee meetings included within this task are included under Subtask 1-2, and not budgeted here. The costs for producing deliverables are factored into the hourly costs for the consultant team anticipated to complete this work. As such, the total costs for this task are those shown below in Table 4-14, and total \$6,900. \$0 of this is anticipated as funding match, and \$6,900 is part of the grant request.

**Table 4-14: Budget Breakdown for Task 3-4 Develop Performance and Monitoring Methods**

| Task                       | Discipline          | Hourly Wage (\$/hr) | Number of Hours | Funding Match | Grant Request  | Total          |
|----------------------------|---------------------|---------------------|-----------------|---------------|----------------|----------------|
| <b>Consultant Labor</b>    |                     |                     |                 |               |                |                |
| 3-4                        | Principal           | \$265               | 4               | \$0           | \$1,060        | \$1,060        |
| 3-4                        | Sr. Project Manager | \$225               | 0               | \$0           | \$0            | \$0            |
| 3-4                        | Project Manager     | \$200               | 16              | \$0           | \$3,200        | \$3,200        |
| 3-4                        | Project Engineer    | \$185               | 0               | \$0           | \$0            | \$0            |
| 3-4                        | Project Planner     | \$165               | 16              | \$0           | \$2,640        | \$2,640        |
| 3-4                        | Graphics            | \$125               | 0               | \$0           | \$0            | \$0            |
| 3-4                        | Administrator       | \$95                | 0               | \$0           | \$0            | \$0            |
| 3-4                        | Facilitator         | \$200               | 0               | \$0           | \$0            | \$0            |
| 3-4                        | Economist           | \$200               | 0               | \$0           | \$0            | \$0            |
| <b>In-Kind Staff Labor</b> |                     |                     |                 |               |                |                |
| 3-4                        | All RWMG Staff      | N/A                 | 0               | \$0           | \$0            | \$0            |
| <b>Task 3-4 Total</b>      |                     |                     |                 | <b>\$0</b>    | <b>\$6,900</b> | <b>\$6,900</b> |

**Task 3-5 Describe IRWM Process Relating to Local Land Use and Water Planning**

This task includes as-needed Stakeholders Committee meetings; and draft and final IRWM Plan text describing coordination between water management and land use planning. Please note that budget for the Stakeholders Committee meetings included within this task are included under Subtask 1-2, and not budgeted here. The costs for producing deliverables are factored into the hourly costs for the consultant team anticipated to complete this work. As such, the total costs for this task are those shown below in Table 4-15, and total \$7,560. \$0 of this is anticipated as funding match, and \$7,560 is part of the grant request.

**Table 4-15: Budget Breakdown for Task 3-5 Describe IRWM Process Relating to Local Land Use and Water Planning**

| Task                       | Discipline          | Hourly Wage (\$/hr) | Number of Hours | Funding Match | Grant Request  | Total          |
|----------------------------|---------------------|---------------------|-----------------|---------------|----------------|----------------|
| <b>Consultant Labor</b>    |                     |                     |                 |               |                |                |
| 3-5                        | Principal           | \$265               | 4               | \$0           | \$1,060        | \$1,060        |
| 3-5                        | Sr. Project Manager | \$225               | 0               | \$0           | \$0            | \$0            |
| 3-5                        | Project Manager     | \$200               | 16              | \$0           | \$3,200        | \$3,200        |
| 3-5                        | Project Engineer    | \$185               | 0               | \$0           | \$0            | \$0            |
| 3-5                        | Project Planner     | \$165               | 20              | \$0           | \$3,300        | \$3,300        |
| 3-5                        | Graphics            | \$125               | 0               | \$0           | \$0            | \$0            |
| 3-5                        | Administrator       | \$95                | 0               | \$0           | \$0            | \$0            |
| 3-5                        | Facilitator         | \$200               | 0               | \$0           | \$0            | \$0            |
| 3-5                        | Economist           | \$200               | 0               | \$0           | \$0            | \$0            |
| <b>In-Kind Staff Labor</b> |                     |                     |                 |               |                |                |
| 3-5                        | All RWMG Staff      | N/A                 | 0               | \$0           | \$0            | \$0            |
| <b>Task 3-5 Total</b>      |                     |                     |                 | <b>\$0</b>    | <b>\$7,560</b> | <b>\$7,560</b> |

**Task 3-6 Prepare IRWM Plan per State Guidelines**

This task includes an Administrative IRWM Plan, in accordance with State Guidelines; Public Review Draft IRWM Plan; compiled response to comments matrix; Administrative Final IRWM Plan; Final IRWM Plan; IRWM Plan Executive Summary; and presentation summarizing IRWM Plan for use at Board/Council hearings. The costs for producing deliverables are factored into the hourly costs for the consultant team anticipated to complete this work. As such, the total costs for this task are those shown below in Table 4-16, and total \$101,120. \$0 of this is anticipated as funding match, and \$101,120 is part of the grant request.

**Table 4-16: Budget Breakdown for Task 3-6 Prepare IRWM Plan per State Guidelines**

| Task                       | Discipline          | Hourly Wage (\$/hr) | Number of Hours | Funding Match | Grant Request    | Total            |
|----------------------------|---------------------|---------------------|-----------------|---------------|------------------|------------------|
| <b>Consultant Labor</b>    |                     |                     |                 |               |                  |                  |
| 3-6                        | Principal           | \$265               | 16              | \$0           | \$4,240          | \$4,240          |
| 3-6                        | Sr. Project Manager | \$225               | 0               | \$0           | \$0              | \$0              |
| 3-6                        | Project Manager     | \$200               | 176             | \$0           | \$35,200         | \$35,200         |
| 3-6                        | Project Engineer    | \$185               | 0               | \$0           | \$0              | \$0              |
| 3-6                        | Project Planner     | \$165               | 284             | \$0           | \$46,860         | \$46,860         |
| 3-6                        | Graphics            | \$125               | 76              | \$0           | \$9,500          | \$9,500          |
| 3-6                        | Administrator       | \$95                | 56              | \$0           | \$5,320          | \$5,320          |
| 3-6                        | Facilitator         | \$200               | 0               | \$0           | \$0              | \$0              |
| 3-6                        | Economist           | \$200               | 0               | \$0           | \$0              | \$0              |
| <b>In-Kind Staff Labor</b> |                     |                     |                 |               |                  |                  |
| 3-6                        | All RWMG Staff      | N/A                 | 0               | \$0           | \$0              | \$0              |
| <b>Task 3-6 Total</b>      |                     |                     |                 | <b>\$0</b>    | <b>\$101,120</b> | <b>\$101,120</b> |

**Task 4: Grant Administration**

The total cost for Task 2: Regional Water Resources Plans is \$31,721. This value was calculated as 5% of the total grant request of \$634,421. The whole of this value is being requested as grant funding, and none of this task is anticipated to be paid for with matching funds.



## Exhibit A



# United States Department of the Interior

## U.S. GEOLOGICAL SURVEY

California Water Science Center  
6000 J Street, Placer Hall  
California State University  
Sacramento, California 95819-6129  
Phone: (916) 278-3000 Fax: (916) 278-3070  
<http://water.wr.usgs.gov>

November 9, 2011

Mr. Jerry Rolwing, General Manager and Operations Manager  
Borrego Water District  
806 Palm Canyon Drive  
Borrego Springs, California 92004

Dear Mr. Rolwing:

This letter confirms discussions between our respective staffs concerning the continuation of the cooperative water-resources program between the Borrego Water District (BWD) and the U.S. Geological Survey (USGS) to delineate the hydrogeology and water availability of the Borrego Valley, California. The agreement end date will be extended from October 31, 2011 to December 31, 2012 to allow time to collect and analyze depth-dependent water-quality data and to evaluate multiple water-management scenarios developed in consultation with BWD.

The study consists of five major tasks: (1) compile hydrogeologic data; (2) collect land-elevation data; (3) convert existing USGS finite element model to MODFLOW; (4) update model with current information, and (5) prepare reports. A detailed description of progress of these tasks in Federal Fiscal Year 2011 (FFY11) and plans and costs for these tasks in FFY12 and the first quarter of FFY13 is included as an attachment to this letter.

As originally proposed and agreed to in Joint Funding Agreement (JFA) 09W4CAD23400 A2, the FFY11 budget was \$161,950, with \$131,500 the responsibility of BWD and \$30,450 provided by USGS Federal matching funds (FMF). In May of 2011 USGS added an additional \$50,000 of USGS FMF, raising the USGS FMF to a total of \$80,450 09W4CAD23400 A3. During FFY11, approximately \$153,660 was expended on the project: \$76,830 of BWD funds and \$76,830 of USGS FMF. In addition, BWD provided \$8,217 to contract a pump in lieu of USGS providing the equipment and personnel. Therefore, a total of \$8,217 from Task 2, depth dependent data is reduced by this amount, and reflected in table 1. BWDs total contribution to the program to be reduced in this amendment agreement by \$8,217.

**Exhibit A**

**Mr. Jerry Rolwing, General Manager and Operations Manager, Borrego Water District**

Subject to the availability of FMF, the USGS would provide an additional \$28,900 to assist in the completion of the study, providing a total of \$211,650.00. A breakdown of the costs associated with each task for the modified budget are provided in the enclosed table 1.

As agreed to at the commencement of this study, the USGS will provide amendments to the Joint Funding Agreement (JFA) yearly for this study. The amendments to the JFA document the amount of BWD and USGS funding that will be contributed to the study each Federal Fiscal Year. This JFA is for the period October 1, 2008 to December 31, 2012.

Enclosed, you will find three copies of JFA 09W4CAD23400, Amendment 4, for your approval. Work performed with funds from this agreement will be conducted on a fixed-price cost basis. If you are in agreement with this proposed program, please return two copies of the JFA with original signatures to our office for further processing. The third copy of the JFA is for your files. After signature by the USGS, a fully executed original of the JFA will be forwarded for your records.

The USGS is required to have an agreement in place prior to any work being performed on a project. Your immediate attention to processing this JFA would be greatly appreciated, so we can continue work on the project as soon as possible.

If you have any questions concerning this program, please contact Peter Martin, in our San Diego Project Office, at (619) 225-6127. If you have any administrative questions, please contact Irene Rios, in our San Diego Office, at (619) 225-6156.

Sincerely,



Eric G. Reichard  
Director  
USGS California Water Science Center

Enclosures

cc: Peter Martin, USGS CAWSC  
Claudia C. Faunt, USGS CAWSC

Exhibit A

Table 1. Summary of costs by task and federal fiscal year.

| Tasks                        | FY2009    |           | FY2010     |           | FY2011    |            | FY2012    |              | Total     |           |
|------------------------------|-----------|-----------|------------|-----------|-----------|------------|-----------|--------------|-----------|-----------|
|                              | Funding   | Billed    | Carryover* | Funding   | Billed    | Carryover* | Funding   | To Be Billed | Planned   | Actual    |
| Task 1: Compile Data         |           |           |            |           |           |            |           |              |           |           |
| Hydrogeology                 | \$55,800  | \$40,409  | \$15,391   | \$20,000  | \$35,391  | \$0        | \$0       | \$0          | \$75,800  | \$75,800  |
| BCM                          | \$20,000  | \$20,000  | \$0        | \$5,000   | \$5,000   | \$0        | \$0       | \$0          | \$25,000  | \$25,000  |
| GPS                          | \$35,000  | \$35,000  | \$0        | \$12,000  | \$12,000  | \$0        | \$0       | \$0          | \$47,000  | \$47,000  |
| InSar                        | \$18,000  | \$18,000  | \$0        | \$18,000  | \$18,000  | \$0        | \$0       | \$0          | \$36,000  | \$36,000  |
| Depth-dependent data         |           |           |            |           |           |            |           |              |           |           |
| Analysis                     |           |           |            |           |           |            |           |              |           |           |
| Task 3: Convert Model        | \$12,250  | \$12,250  | \$0        |           |           | \$0        | \$8,217   | \$-8,217a    | \$30,000  | \$21,783  |
| Task 4: Update Model         | \$30,000  | \$30,000  | \$0        |           |           | \$0        | \$3,620   | \$3,620      | \$50,000  | \$50,000  |
| Task 5: Prepare Report       | \$7,000   | \$7,000   | \$0        |           |           | \$0        | \$0       | \$0          | \$12,250  | \$12,250  |
| TOTAL Funding                | \$178,050 | \$162,659 | \$15,391   | \$215,250 | \$146,009 | \$84,632   | \$211,950 | \$28,900     | \$281,950 | \$281,950 |
| USGS matching funds          | \$46,858  | \$46,858  | \$0        | \$55,442  | \$55,442  | \$0        | \$80,450  | \$28,900     | \$76,150  | \$76,150  |
| Borrego Water District funds | \$131,192 | \$115,801 | \$15,391   | \$159,808 | \$90,567  | \$84,632   | \$131,500 | -\$8,217     | \$422,500 | \$414,283 |

a. Final costs reflect the expenditure of \$8,217 of BWD funds to contract the pump for completion of this task in lieu of USGS equipment and personnel to be credited back to BWD via Joint Funding Agreement (JFA) 09W4CAD23400 Amendment 4.

b. Federal Matching Funds available and applied in the amount of \$46,380 in FY11.

\*Funding less billed for previous year

Form 9-1366  
(Oct. 2005)

**U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement**

Customer #: 6000000968 CA234  
 Agreement #: 09W4CAD23400 A4  
 Project #:  
 TIN #: 95-3584612  
 Fixed Cost Agreement  Yes  No

Page 1 of 2

**FOR  
WATER RESOURCES INVESTIGATIONS**

THIS AGREEMENT is entered into as of the 31 day of OCTOBER, 2011, by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the BORREGO WATER DISTRICT, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation to delineate the hydrogeology and water availability of the Borrego Valley, California, herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of \$0.

(a) \$28,900.00 by the party of the first part during the period  
 October 1, 2008 to December 31, 2012

(b) \$-8,217.00 by the party of the second part during the period  
 October 1, 2008 to December 31, 2012

USGS DUNS is 1761-38857. Total funding for the USGS portion of this agreement, including this amendment is \$211,650.00. Borrego Water District funding amount of \$422,500.00 is reduced to \$414,283.00 by the amount of \$8,217.00. Total funding for the Borrego Water District portion of this agreement, including this amendment is \$414,283.00.

- (c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.
- (d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.
3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.
7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

Form 9-1366  
continued

U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement

Customer #: 6000000968 CA234  
Agreement #: 09W4CAD23400 A4  
Project #:  
TIN #: 95-3584612

- 8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
- 9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered quarterly. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

U.S. Geological Survey  
United States  
Department of the Interior

BORREGO WATER DISTRICT

USGS Point of Contact

Customer Point of Contact

Name: Irene A. Rios, Budget Analyst  
Address: 6000 J Street, Placer Hall  
Sacramento, California 95819-6129  
Telephone: 619-225-6156  
Email: iaros@usgs.gov

Name: Jerry Rolwing, General Manager and  
Operations Manager  
Address: Borrego Water District  
806 Palm Canyon Drive  
Borrego Springs, California 92004  
Telephone: 760-767-5806  
Email: jerry@borregowd.org

Signatures

Signatures

By \_\_\_\_\_ Date \_\_\_\_\_  
Name: Eric G. Reichard  
Title: Director, USGS California Water  
Science Center

By \_\_\_\_\_ Date \_\_\_\_\_  
Name: Jerry Rolwing  
Title: General Manager and Operations  
Manager

By \_\_\_\_\_ Date \_\_\_\_\_  
Name:  
Title:



*Attachment*

**5**

**Anza Borrego Desert Integrated Regional  
Water Management  
*Planning Grant Proposal  
Schedule***

Attachment 5 consists of the following items:

✓ **Proposal Schedule**

The proposal schedule provides a timeline for each Work Plan task, as well as adoption of the IRWM Plan Update by August 6, 2014.

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The proposal schedule provides a timeline for each Work Plan task, consistent with the Work Plan (refer to Attachment 3) and Budget (refer to Attachment 4). The schedule shows August 6, 2012 as the effective date of the grant agreement and adoption of the IRWM Plan Update by August 6, 2014 (within two years from the effective date).

## Anza Borrego Desert Integrated Regional Water Management Planning Grant Schedule

| ID  | Task Name   | Duration   | Start        | Finish       | 2010 | 2011 | 2012 | 2013 | 2014 |
|-----|---|------------|--------------|--------------|------|------|------|------|------|
| 1   | Effective Date of Planning Grant Agreement with DWR                                   | 1 day      | Mon 8/6/12   | Mon 8/6/12   | S    | O    | N    | I    | D    |
| 2   | Task 1: Ongoing Outreach  | 515 days   | Mon 8/6/12   | Fri 7/25/14  | J    | F    | M    | A    | M    |
| 3   | 1-1: Stakeholder Outreach (Including DACs and Tribes)                                 | 501 days   | Mon 8/6/12   | Mon 7/7/14   | J    | F    | M    | A    | M    |
| 4   | Public Workshops  | 501 days   | Mon 8/6/12   | Mon 7/7/14   | J    | F    | M    | A    | M    |
| 5   | DAC and Tribal Outreach Meetings  | 496 days   | Mon 8/6/12   | Mon 6/30/14  | J    | F    | M    | A    | M    |
| 13  | 1-2: RWMG and Stakeholders Committee Meetings and Coordination (Including D           | 501 days   | Fri 8/24/12  | Fri 7/25/14  | J    | F    | M    | A    | M    |
| 18  | RWMG Meetings   | 501 days   | Fri 8/24/12  | Fri 7/25/14  | J    | F    | M    | A    | M    |
| 19  | Stakeholders Committee Meetings including DACs and Tribes                             | 501 days   | Fri 8/24/12  | Fri 7/25/14  | J    | F    | M    | A    | M    |
| 44  | 1-3: Coordination with other IRWM Regions   | 505 days   | Mon 8/6/12   | Fri 7/11/14  | J    | F    | M    | A    | M    |
| 69  | Inter-Regional Coordination Meetings  | 505 days   | Mon 8/6/12   | Fri 7/11/14  | J    | F    | M    | A    | M    |
| 70  |   |            |              |              | J    | F    | M    | A    | M    |
| 77  |   |            |              |              | J    | F    | M    | A    | M    |
| 78  | Task 2: Regional Water Resources Plans Development                                    | 1056 days? | Fri 10/2/09  | Fri 10/18/13 | S    | O    | N    | I    | D    |
| 79  | 2-1: Characterization of Current Regional Water Supply                                | 781 days?  | Fri 10/2/09  | Fri 9/28/12  | J    | F    | M    | A    | M    |
| 80  | 2-1.1: Compilation of Available Hydrogeologic Data                                    | 521 days?  | Fri 10/2/09  | Fri 9/30/11  | J    | F    | M    | A    | M    |
| 81  | 2-1.2: Collection and Analysis of New Data  | 521 days?  | Fri 10/2/09  | Fri 9/30/11  | J    | F    | M    | A    | M    |
| 82  | 2-1.3: Conversion of Fine-Element Model into MODFLOW                                  | 781 days?  | Fri 10/2/09  | Fri 9/28/12  | J    | F    | M    | A    | M    |
| 83  | 2-1.4: Update the Model with Current Information                                      | 781 days?  | Fri 10/2/09  | Fri 9/28/12  | J    | F    | M    | A    | M    |
| 84  | 2-1.5: Prepare Reports  | 520 days?  | Mon 10/4/10  | Fri 9/28/12  | J    | F    | M    | A    | M    |
| 85  | 2-2: Managing the Region's Groundwater Basins   | 215 days   | Mon 10/4/12  | Fri 7/26/13  | J    | F    | M    | A    | M    |
| 86  | 2-2.1: Alternative Strategies for Establishing Managed Basins                         | 125 days   | Mon 10/1/12  | Fri 3/22/13  | J    | F    | M    | A    | M    |
| 87  | 2-2.2: Mechanisms for Funding Groundwater Management Alternatives                     | 125 days   | Mon 11/12/12 | Fri 5/3/13   | J    | F    | M    | A    | M    |
| 88  | 2-2.3: Addressing Environmental Integrity Issues                                      | 60 days    | Mon 5/6/13   | Fri 7/26/13  | J    | F    | M    | A    | M    |
| 89  | 2-3: Forecasting Changes in Water Quality as the Groundwater Basins are Dewate        | 235 days   | Mon 11/26/12 | Fri 10/18/13 | J    | F    | M    | A    | M    |
| 90  | 2-3.1: Methodologies for Developing Water Quality Forecasts                           | 115 days   | Mon 11/26/12 | Fri 5/3/13   | J    | F    | M    | A    | M    |
| 91  | 2-3.2: Analyze Potential Economic Impacts and Impact Timelines                        | 115 days   | Mon 2/18/13  | Fri 10/18/13 | J    | F    | M    | A    | M    |
| 92  | 2-3.3: Addressing Environmental Integrity Issues                                      | 60 days    | Mon 7/29/13  | Fri 10/18/13 | J    | F    | M    | A    | M    |
| 93  | 2-4: Anticipating the Impacts of Climate Change on Regional Water Resources           | 200 days   | Mon 1/7/13   | Fri 10/11/13 | J    | F    | M    | A    | M    |
| 94  | 2-4.1: Climate Change Vulnerability Analysis and Prioritization                       | 80 days    | Mon 1/7/13   | Fri 4/26/13  | J    | F    | M    | A    | M    |
| 95  | 2-4.2: Flood Control and Other Adaptation Strategies                                  | 80 days    | Mon 4/1/13   | Fri 7/19/13  | J    | F    | M    | A    | M    |
| 96  | 2-4.3: Addressing Environmental Integrity Issues                                      | 60 days    | Mon 7/22/13  | Fri 10/11/13 | J    | F    | M    | A    | M    |
| 97  |   |            |              |              | J    | F    | M    | A    | M    |
| 98  | Task 3: IRWM Plan Update  | 484 days   | Tue 10/2/12  | Fri 8/8/14   | J    | F    | M    | A    | M    |
| 99  | 3-1: Updates to Governance and Financing Plan   | 250 days   | Tue 10/2/12  | Mon 9/16/13  | J    | F    | M    | A    | M    |
| 100 | 3-2: Refine IRWM Plan Goals, Objectives, and Priorities                               | 250 days   | Tue 10/2/12  | Mon 9/16/13  | J    | F    | M    | A    | M    |
| 101 | 3-3: Develop Data Management Plan   | 250 days   | Tue 10/2/12  | Mon 9/16/13  | J    | F    | M    | A    | M    |
| 102 | 3-4: Develop Performance and Monitoring Methods                                       | 250 days   | Tue 10/2/12  | Mon 9/16/13  | J    | F    | M    | A    | M    |
| 103 | 3-5: Describe IRWM Process relating to Local Land Use Planning                        | 250 days   | Tue 10/2/12  | Mon 9/16/13  | J    | F    | M    | A    | M    |
| 104 | 3-6: Prepare IRWM Plan per State Guidelines   | 210 days   | Mon 10/21/13 | Fri 8/8/14   | J    | F    | M    | A    | M    |
| 105 | Production of Administrative Draft IRWM Plan Update                                   | 90 days    | Mon 10/21/13 | Fri 2/21/14  | J    | F    | M    | A    | M    |
| 106 | Production of Public Draft IRWM Plan Update   | 30 days    | Mon 2/24/14  | Fri 4/4/14   | J    | F    | M    | A    | M    |
| 107 | Production of Final IRWM Plan Update  | 45 days    | Mon 4/7/14   | Fri 6/6/14   | J    | F    | M    | A    | M    |
| 108 | Plan Adoption by RWMG Governing Bodies  | 45 days    | Mon 6/9/14   | Fri 8/8/14   | J    | F    | M    | A    | M    |
| 109 | IRWM Plan Executive Summary   | 45 days    | Mon 6/9/14   | Fri 8/8/14   | J    | F    | M    | A    | M    |
| 110 |   |            |              |              | J    | F    | M    | A    | M    |
| 111 | Task 4: Proposal Administration   | 520 days   | Thu 8/9/12   | Wed 8/6/14   | J    | F    | M    | A    | M    |
| 112 |   |            |              |              | J    | F    | M    | A    | M    |
| 113 | Additional IRWM Plan Work   | 870 days?  | Fri 10/2/09  | Thu 1/31/13  | J    | F    | M    | A    | M    |
| 114 | DWR Facilitation and Technical Support – Phase 2                                      | 135 days?  | Mon 3/12/12  | Fri 9/14/12  | J    | F    | M    | A    | M    |
| 115 | DWR ABD Region Summary  | 130 days?  | Mon 2/6/12   | Fri 8/3/12   | J    | F    | M    | A    | M    |
| 116 | U.S. Bureau of Reclamation Southeast California Regional Basin Study                  | 544 days?  | Mon 1/3/11   | Thu 1/31/13  | J    | F    | M    | A    | M    |
| 117 | USEPA State and Tribal Assistance Grant Study, Borrego Springs Pipeline Feasibility S | 629 days?  | Fri 10/2/09  | Wed 2/29/12  | J    | F    | M    | A    | M    |

Project: ABD IRWM\_Schedule\_30Jan1  
Date: Thu 2/2/12

Task Split

Progress Milestone

Summary Project Summary

External Tasks External Milestone

Deadline

## Anza Borrego Desert Integrated Regional Water Management Planning Grant Proposal Program Preferences

Attachment 6 consists of the following items:

### ✓ Program Preferences

Attachment 6 contains information regarding how this ABD IRWM Planning Grant Proposal will result in development of an IRWM Plan that addresses the IRWM Program Preferences established within Section II.F of the 2010 *Proposition 84 & Proposition 1E Integrated Regional Water Management Guidelines* (2010 Guidelines).

### Program Preferences

The Program Preferences described in Section II.F of the 2010 Guidelines are those set forth in PRC §75026.(b) and CWC §10544. These preferences are summarized in **Table 6-1**.

**Table 6-1: Program Preferences and Statewide Priorities**

| Program Preferences  | Statewide Priorities                             |
|--|--|
| 1. Include regional projects or programs   | 1. Drought Preparedness                          |
| 2. Effectively integrate water management programs and projects within a hydrologic region identified in the California Water Plan; RWQCB region or subdivision; or other region or sub-region specifically identified by DWR  | 2. Use and Reuse Water More Efficiently          |
| 3. Effectively resolve significant water-related conflicts within or between regions   | 3. Climate Change Response Actions               |
| 4. Contribute to attainment of one or more of the objectives of the CALFED Bay-Delta Program   | 4. Expand Environmental Stewardship              |
| 5. Address critical water supply or water quality needs of disadvantaged communities within the region   | 5. Practice Integrated Flood Management          |
| 6. Effectively integrate water management with land use planning   | 6. Protect Surface Water and Groundwater Quality |
| 7. For eligible SWFM funding not receiving State funding pursuant to PRC §5096.824 or §75034, provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of instream erosion and sedimentation, and groundwater recharge. | 7. Improve Tribal Water and Natural Resources    |
| 8. Address Statewide priorities ( <i>see right</i> )   | 8. Ensure Equitable Distribution of Benefits     |

In accordance with requirements set within the *Proposal Solicitation Package for Round 2 Planning Grants* (PSP), this attachment contains information that demonstrates how the work to be completed within this ABD Planning Grant Proposal (Proposal) will result in an IRWM Plan that addresses the IRWM Program Preferences listed within Table 6-1. Please note that this attachment does not contain information regarding how IRWM Plan objectives or projects listed within the existing Draft ABD IRWM Plan will help achieve DWR's Program Preferences, but rather speaks only to the outcomes

anticipated as a result of implementing future work described in *Attachment 3, Work Plan*. Due to the extensive stakeholder process currently underway, and the stakeholder process anticipated for development of the ABD IRWM Plan, it is important to the ABD IRWM Region (Region) that this Proposal focuses on future work and activities, and does not include past work that has not been approved by the Stakeholders Committee or the RWMG governing bodies.

Table 6-2 provides an overview of how the various tasks within this Planning Grant Proposal help contribute to DWR’s Program Preferences.

**Table 6-2: Proposed Work Plan Tasks and Program Preferences**

| Work Plan Tasks  | 1: Regional Projects | 2: Integrate Water Management | 3: Resolve Conflict | 4: Bay-Delta Objectives | 5: Benefits DACs | 6: Land Use Planning | 7: Stormwater Resource Plan | 8: Statewide Priorities |
|--|----------------------|-------------------------------|---------------------|-------------------------|------------------|----------------------|-----------------------------|-------------------------|
| <b>Task 1: Stakeholder Outreach and Program Administration</b> | ✓                    | ✓                             | ✓                   | ✓                       | ✓                |                      |                             | ✓                       |
| <b>Task 2: Regional Water Resources Plans</b>                  | ✓                    | ✓                             | ✓                   | ✓                       | ✓                |                      |                             | ✓                       |
| <b>Task 3: Updating the ABD IRWM Plan</b>                      | ✓                    | ✓                             | ✓                   | ✓                       | ✓                | ✓                    | ✓                           | ✓                       |
| <b>Task 4: Grant Administration</b>                            |                      | ✓                             |                     |                         |                  |                      |                             |                         |
| <b>ABD Planning Grant Proposal</b>                             | ✓                    | ✓                             | ✓                   | ✓                       | ✓                | ✓                    | ✓                           | ✓                       |

**Program Preference 1: Include Regional Projects or Programs**

As shown in **Table 6-2**, the tasks in this Proposal pertain to the Program Preference of including regional projects or programs pursuant to CWC §10544.

***Task 1: Stakeholder Outreach and Program Administration***

Task 1 contains many stakeholder outreach activities that will lead to the development of an IRWM Plan that includes regional projects or programs. Due to the wide breadth of outreach proposed, outreach efforts aim to reach all interested regional stakeholders (refer to Task 1-1 and 1-2), as well as inter-regional stakeholders located within other IRWM regions (refer to Task 1-3). This broad and comprehensive outreach effort will lead to increased interaction among potential project proponents throughout the entire Region, as well as engage interregional stakeholders that could also potentially serve as project proponents. As such, Task 1 will bring regional and interregional stakeholders together, therefore providing a vehicle through which a variety of stakeholders throughout the Region could coordinate on developing regional projects or programs for incorporation within the IRWM Plan.

In addition, stakeholder outreach efforts will include continued notification regarding IRWM and other grant opportunities. Outreach included within Task 1-1 such as electronic distribution lists, website updates, newsletters, press releases, presentations, and targeted DAC and Tribal outreach, will provide a forum for keeping regional stakeholders informed about the IRWM process, and alert stakeholders about the opportunity for incorporating projects or programs into the IRWM Plan. These outreach efforts will ensure that stakeholders throughout the Region are informed about IRWM-related efforts, and will facilitate incorporation of regional projects and/or programs into the IRWM Plan.

***Task 2: Regional Water Resources Plans***

All four Regional Water Resources Plans included under Task 2 are regional in scope. Each plan has a physical scope that encompasses the majority or the entire Region, and in addition, each plan aims to address critical issues for the entire Region as identified by stakeholders. Each Regional Water Resources Plan will be incorporated into the IRWM Plan, therefore ensuring that the work completed under Task 2

will result in an IRWM Plan that addresses the Program Preference of including regional projects or programs. The following provides specific explanations regarding the physical regional scope of each Regional Water Resources Plan included under Task 2.

Task 2-1 (*Characterization of Current Regional Water Supply*) will ultimately result in development of a groundwater flow and land subsidence model for the Borrego Valley. This planning study has focused on gathering groundwater and subsidence data that aims to provide an improved understanding of hydrogeology and water availability of the Borrego Valley.

Task 2-2 (*Managing the Region's Groundwater Basins*) will develop alternative management strategies for groundwater basins throughout the Region, with an emphasis on the Borrego Valley Groundwater Basin. As described in *Attachment 3, Work Plan*, the Borrego Valley Groundwater Basin provides water supplies to the majority of the Region's residents, and is located throughout the northeastern portion of the Region (refer to Figure 3-6).

Task 2-3 (*Forecasting Changes in Water Quality as the Groundwater Basins are Dewatered*) will assess groundwater quality conditions for the Region's groundwater basins, with a similar focus on the Borrego Valley Groundwater Basin as described for Task 2-1. The Borrego Valley Groundwater Basin is considered a regional water resource because it supplies water to the majority of the Region's residents.

Task 2-4 (*Anticipating the Impacts of Climate Change on Regional Water Resources*) will include activities to address climate change vulnerabilities (specifically flooding and environmental integrity) throughout the Region. The physical scope of this task will be the entire Region for Subtask 2-3.1, flood hazard zones that occur throughout the Region for Subtask 2-3.2 (refer to Figure 3-8), and the Anza-Borrego Desert State Park for Subtask 3-3.3, which includes over 70% of the Region (refer to Figure 3-1).

### ***Task 3: Updating the ABD IRWM Plan***

Specific portions of the ABD IRWM Plan are not yet complete, and as indicated previously, this Planning Grant Proposal includes the effort necessary to complete and adopt an ABD IRWM Plan. The ABD IRWM Plan will address water resources issues and needs throughout the entire Region and will establish regional objectives, priorities, and implementation actions to address those issues. Development of the IRWM Plan will include extensive stakeholder outreach to ensure that input and collaboration necessary to develop the IRWM Plan will be regional in scope; therefore ensuring that the IRWM Plan itself will be regional in scope.

While specific projects and programs that will be included within the IRWM Plan have not yet been determined, due to the extensive stakeholder outreach described under Task 1, it is certain that the IRWM Plan will contain regional projects or programs.

## **Program Preference 2: Effectively Integrate Water Management Programs and Projects within the ABD IRWM Region**

DWR approved the ABD IRWM region as part of the RAP that occurred in 2009. The purpose of the ABD IRWM Plan will be to integrate water resources efforts throughout the DWR-approved ABD IRWM Region in accordance with the 2010 Guidelines, and will therefore include water management programs and projects within the Region. As such, the work contained within this Proposal will result in an IRWM Plan that effectively integrates water management programs and projects within the ABD IRWM Region.

### ***Task 1: Stakeholder Outreach and Program Administration***

Task 1 contains stakeholder outreach activities that will help local water managers to effectively integrate water management programs and projects within the Region. By convening on a monthly basis to discuss water resource issues and solutions, the Region's stakeholders will have far greater opportunity to effectively integrate their current projects and programs.

**Task 2: Regional Water Resources Plans**

All four Regional Water Resources Plans included under Task 2 are regional in scope. The purpose of the ABD IRWM Plan development process is to a) explore the key water resource issues identified by regional stakeholders through Task 2 activities and then b) integrate all of the developed information, analysis, and recommendations into the ABD IRWM Plan through Task 3 activities. Task 2-1 (*Characterization of Current Regional Water Supply*) and DWR's State of the Basin Program provide a baseline by which stakeholders will establish a common understanding of existing conditions and overdraft state the Borrego Valley Groundwater Basin. Task 2-2 (*Managing the Region's Groundwater Basins*) will allow the stakeholders to evaluate various groundwater management alternatives for implementation. Task 2-3 (*Forecasting Changes in Water Quality as the Groundwater Basins are Dewatered*) will enable the group to assess groundwater quality conditions for the Region's groundwater basins. Task 2-4 (*Anticipating the Impacts of Climate Change on Regional Water Resources*) will include activities to address climate change vulnerabilities. Each of these Regional Water Resources Plans builds and integrates the regional data and analysis from the others.

**Task 3: Updating the ABD IRWM Plan**

As stated above, the purpose of the ABD IRWM Plan development process is to a) explore the key water resource issues identified by regional stakeholders through Task 2 activities and then b) integrate all of the developed information, analysis, and recommendations into the ABD IRWM Plan through Task 3 activities. The ABD IRWM Plan will effectively integrate the previous planning studies and their recommendations into a standards-compliant IRWM Plan.

**Task 4: Grant Administration**

The receipt and administration of Planning Grant-Round 2 funding from DWR will provide the Region's stakeholders with the opportunity to integrate water management programs through professional planning and facilitation services. Administration of the grant contract is an essential component of this Proposal.

**Program Preference 3: Effectively Resolve Significant Water-Related Conflicts**

As described in detail in *Attachment 3, Work Plan*, the Region currently faces substantial water-related issues, particularly pertaining to the four key regional issues identified by stakeholders: water supply, water quality, flood control, and environmental integrity. In addition, in the past, conflicts have arisen in the Region as a result of a perceived lack of transparency on behalf of stakeholders. Work proposed within the Proposal will address both of the aforementioned sources of conflict by addressing the Region's four key issues and improving stakeholder involvement.

**Task 1: Outreach and Program Administration**

The purpose of Task 1 is to provide the stakeholder outreach necessary to maintain and increase stakeholder involvement in order to establish a common understanding of regional issues and support for the implementation actions included within the IRWM Plan. As such, Task 1 will include the outreach necessary to ensure that work being completed under the IRWM Program is working to resolve conflicts by educating stakeholders about IRWM activities and soliciting stakeholder input and involvement.

**Task 2: Regional Water Resources Plans Development**

The purpose of the Regional Water Resources Plans is to produce the work necessary to fully address the Region's four key issues within the ABD IRWM Plan. Task 2 therefore contains actions that help the Region work toward resolving significant water-related conflicts associated with water supply, water quality, flood control, and environmental integrity.

As described in *Attachment 3, Work Plan*, local residents and other interests within the Borrego Valley have expressed growing concern regarding the lowering of the area's groundwater table and the fact that the Region did not have a plan or regulatory agency with the authority to adequately address regional groundwater overdraft. There is concern groundwater availability and quality may deem the Borrego

Valley's lower groundwater aquifers unusable from an economic standpoint. The primary purpose of Task 2 is to provide the data necessary to establish a common understand of existing conditions, the overdraft state, and groundwater quality in the Region's groundwater basins – the primary source of water supply for local residents and businesses. Simply defining the true current condition will better equip this diverse stakeholder group to discuss future projects and programs to resolve these conflicts.

**Task 3: Updating the ABD IRWM Plan**

The purpose of Task 3 will be to incorporate work completed under Task 1 and Task 2 and complete additional work necessary to produce a standards-compliant IRWM Plan for the Region. Addressing key regional issues within a robust stakeholder outreach process will effectively resolve significant water-related conflicts. Work completed under Task 3 will ensure that all information, analysis, and recommendations are included within the ABD IRWM Plan, therefore ensuring that the IRWM Plan addresses the IRWM Program Preference of effectively resolving significant water-related conflicts within the Region.

**Program Preference 4: Contribute to Attainment of One or More of the Objectives of the CALFED Bay-Delta Program**

The CALFED Bay-Delta Program has the following four objectives: Water Quality, Water Supply, Ecosystem Restoration, and Levee Integrity (<http://calwater.ca.gov/>).

- *Water Quality*: the objective of this program is to invest in projects that improve the state's water quality from source to tap.
- *Water Supply*: this objective is comprised of five critical elements: conveyance, storage, environmental water account, water use efficiency and water transfer. Together and in partnership with local and regional agencies, this program allows for the increase of water supplies and more efficient and flexible use of water resources.
- *Ecosystem Restoration*: this objective aims at restoring and protecting habitats, ecosystem functions, and native species.
- *Levee Integrity*: the objective of this program is to protect water supplies needed for ecosystems, cities, industry, and farms by reducing the threat of levee failures that would lead to seawater intrusion.

All tasks included within this Proposal meet the CALFED Bay-Delta Program objective relating to *Water Supply*. Due to the Proposal's emphasis on this key issue, the Region will ensure the efficient use of a Statewide water resource (the Region's groundwater aquifers) and work to add flexibility to California's water system by increasing water supply reliability of the groundwater aquifers. Because the Region does not currently receive water from the Sacramento-San Joaquin Bay Delta (Bay Delta), IRWM activities for the Region will not have a direct impact on the *Water Quality*, *Ecosystem Restoration*, or *Levee Integrity* of the Bay Delta.

As indicated within *Attachment 3, Work Plan*, the Region's primary water supply resource, the Borrego Valley Groundwater Basin, is in a state of overdraft. Despite the importance of this regional water resource, the Region has not yet reached consensus regarding the status of the Borrego Valley Groundwater Basin or other regional basins. Work proposed within Task 1 and Task 2 of this Proposal will include outreach efforts and technical work necessary to develop implementable strategies for adequately managing the Region's groundwater resources. Therefore, this Proposal will seek to increase water supply reliability for the Region. Increasing the Region's water supply reliability directly meets the CALFED Bay-Delta Program's *Water Supply* objective by adding flexibility to California's water system. Without an effective strategy for managing the Region's groundwater resources, the Region will not be able to implement activities such as groundwater banking, importing replenishment water, and other potential groundwater supply alternatives. As such, the activities included within the Proposal relating to

water supply will help the Region avoid economic and public health and welfare issues that could arise if the Region's groundwater basins were to become unusable from a technical or economic perspective.

Work completed under Task 3 will ensure that information from Task 1 and Task 2 is incorporated into the ABD IRWM Plan, therefore ensuring that the IRWM Plan addresses the IRWM Program Preference of contributing to the attainment of an objective (Water Supply) of the CALFED Bay-Delta Program.

#### **Program Preference 5: Address Critical Water Supply or Water Quality Needs of DACs**

As indicated within *Attachment 3, Work Plan*, almost the entire Region qualifies as a disadvantaged community (DAC) according to requirements within the 2010 Guidelines (refer to Figure 3-4). As indicated throughout the Work Plan, because almost the entire Region qualifies as a DAC, all work included within the Proposal would benefit DACs. Despite this fact, the Region is committed to conducting further outreach efforts to non-governmental organizations (NGOs) and other groups representing the interests of DACs in order to facilitate and support sustained DAC participation in the IRWM planning process. Such activities (included within Task 1) will ensure that DACs are engaged throughout development of the IRWM Plan, therefore ensuring that the IRWM Plan addresses critical water supply and water quality needs of DACs.

Furthermore, all four Regional Water Resources Plans included under Task 2 include activities that address critical water supply and water quality needs for the Region (including DACs). Tasks 2-1 and 2-2 will include work to specifically address a critical water supply (groundwater overdraft) issue that affects all Regional stakeholders, including DACs. Task 2-3 will include work to address a potentially significant yet undefined water quality issue that has the potential to severely impact regional water resources for all residents, including DACs. All three planning studies include activities that will work to ensure that the Region's groundwater resources are usable from a quantity, quality, and economic standpoint. As indicated within *Attachment 3, Work Plan*, it is possible that Borrego Valley groundwater resources will become unavailable from an economic standpoint (due to treatment and pumping costs) due to overdraft of the Upper Aquifer. If the Borrego Valley's groundwater resources were to become economically unviable, impacts would disproportionately impact DACs by requiring expensive alternatives that may not be economically feasible for DACs. As such, while the work included within these planning studies has a regional scope for all residents, anticipated outcomes from these activities are expected to positively benefit DACs by ensuring that these communities continue to have a reliable, high-quality, and economically viable water supply. In addition, Task 2-3 will address climate change vulnerabilities that may occur across the Region, including flooding and environmental integrity issues. Due to the substantial economic impacts generated from flooding (refer to *Attachment 3, Work Plan* for more information), benefits anticipated for Task 2-3 will positively benefit DACs by reducing the likelihood of damaging flood events that disproportionately impact DACs.

The purpose of Task 3 will be to incorporate work completed under Task 1 and Task 2 and complete additional work necessary to produce a standard-compliant IRWM Plan for the Region. As such, Task 3 will ensure that planning activities that directly address critical water supply and water quality needs of DACs are incorporated into the IRWM Plan. Therefore, Task 3 will ensure that the IRWM Plan addresses the IRWM Program Preference of addressing critical water supply and water quality needs of DACs within the Region.

#### **Program Preference 6: Effectively Integrate Water Management with Land Use Planning**

As described within *Attachment 3, Work Plan*, the Regional Water Management Group (RWMG) formed to conduct IRWM planning activities in the Region is comprised of the Borrego Water District (BWD), the County of San Diego (County), and the Resource Conservation District of Greater San Diego County (RCD). Of these three agencies, the County has land use and water management authority within portions of the Region and BWD has water management authority over a portion of the Region (refer to Figure 3-

1). Therefore, IRWM planning efforts included within the Proposal, such as implementing outreach efforts, completing Regional Water Resources Plans, and developing an IRWM Plan, constitute integration of water management and land use planning by convening water management and land use planning agencies to work on important Regional issues.

Regional issues such as groundwater supply, flooding (and related development restrictions), environmental integrity, and other issues have a clear nexus between land use planning and water management. The Proposal acknowledges this relationship and specifically includes Task 3-5 (*Describe IRWM Process Relating to Local Land Use and Water Planning*) which ensures that there is an exchange of knowledge and expertise between land use and water managers, and identifies how to improve planning efforts between these entities. Task 3-5 also acknowledges the importance of land use and water managers not included within the RWMG, including the Anza-Borrego Desert State Park, the Bureau of Land Management, other Resource Conservation Districts, and other agencies with water authority. Due to the importance of all Regional land use and water planning agencies, Task 3-5 also includes coordination with such agencies to ensure that their input is incorporated into the IRWM Plan. Therefore, work completed within the Proposal will ensure that the IRWM Plan addresses the IRWM Program Preference of effectively integrating water management with land use planning.

#### **Program Preference 7: Integrate Stormwater Resource Plan Requirements**

The Proposal will indirectly integrate the Stormwater Resource Plan requirements specified in CWC Section 10562 into the ABD IRWM Plan. Although a complete Stormwater Resource Plan per the Water Code will not be developed, certain required components will be addressed during the IRWM planning process.

Work included within Task 3 will include an assessment of Resource Management Strategies (RMS) as required by DWR within the 2010 Guidelines. Therefore, Task 3 will include a consideration of RMS relating to stormwater management and pollution prevention. Consideration of how this RMS is implemented within the ABD Region will likely include: a) opportunities to augment local water supply through groundwater recharge or storage for beneficial reuse; b) opportunities for source control for both pollution and stormwater runoff volume, onsite and local infiltration, and reuse, and c) projects to reestablish natural water drainage treatment and infiltration systems or mimic natural system functions to the maximum extent feasible (CWC Section 10562(d)). These considerations would not only address stormwater management concerns, but could also contribute to the development of groundwater management solutions (e.g. stormwater capture and recharge) in Task 2. While specific projects that will be included within the IRWM Plan are not known at this time, due to the consideration of the aforementioned RMS, it is possible that the IRWM Plan will include projects that improve management of stormwater resources within the Region.

#### **Program Preference 8: Address Statewide Priorities**

The Proposal will either directly or indirectly address every Statewide Priority established by DWR. **Table 6-3** demonstrates which Statewide Priorities are addressed by each of the Work Plan tasks and by the Proposal as a whole.

**Table 6-3: Proposed Projects and Programs with Statewide Priorities**

| Work Plan Tasks  | Drought Preparedness | Reuse Water More Efficiently | Climate Change Response Actions | Expand Environmental Stewardship | Practice Integrated Flood Management | Protect Surface/ Groundwater Quality | Improve Tribal Water/Natural Resources | Ensure Equitable Distribution of Benefits |
|--|----------------------|------------------------------|---------------------------------|----------------------------------|--------------------------------------|--------------------------------------|--|---|
| <b>Task 1: Stakeholder Outreach and Program Administration</b> | ○                    |                              | ○                               | ○                                | ○                                    | ○                                    | ●                                      | ●   |
| <b>Task 2: Regional Water Resources Plans</b>                  | ●                    |                              | ●                               | ●                                | ●                                    | ●                                    |  | ●   |
| <b>Task 3: Updating the ABD IRWM Plan</b>                      | ○                    | ○                            | ●                               | ○                                | ○                                    | ●                                    | ●                                      | ●   |
| <b>Task 4: Grant Administration</b>                            |                      |                              |                                 |                                  |                                      |                                      |  |   |
| <b>ABD Planning Grant Proposal</b>                             | ●                    | ○                            | ●                               | ●                                | ●                                    | ●                                    | ●                                      | ●   |

○ indirectly related; ● directly related

**Task 1: Stakeholder Outreach and Program Administration**

As indicated within Table 6-3, Task 1 will largely address Statewide Priorities in an indirect manner. This is because all IRWM planning activities and actions completed under Task 2 and Task 3 will be directly supported by work occurring in Task 1. For example, the climate change and flood planning proposed under Task 2 (Task 2-4) will be advertised and discussed through outreach activities described under Task 1 such as website updates, Stakeholders Committee meetings, etc. As such, Task 1 will provide a venue through which to educate stakeholders regarding IRWM planning activities, and ensure that activities have support and participation from regional stakeholders. For these reasons, Task 1 will indirectly support the following Statewide Priorities: Drought Preparedness, Climate Change Response Actions, Expand Environmental Stewardship, Practice Integrated Flood Management, and Protect Surface Water and Groundwater Quality. All of the aforementioned Statewide Priorities will be directly addressed either under Task 2 or Task 3, which will be directly supported by work conducted under Task 1.

Two Statewide Priorities will be directly addressed by Task 1:

- *Ensure Equitable Distribution of Benefits:* One of the purposes of Task 1 (Subtask 1.1-2) is to conduct further outreach efforts to DACs and Tribal entities within the Region so that these communities are more engaged in the IRWM process. Furthermore, another purpose of Subtask 1.1-2 is to engage DAC and Tribal entities to receive input and feedback on a draft and final IRWM Plan section articulating DAC and Tribal water-related issues and their respective water management (critical water supply or water quality) needs. All of the outreach described under Task 1 will be directed at DACs, because almost the entire Region qualifies as a DAC (refer to Figure 3-4). As such, through outreach conducted under Task 1, DACs will be engaged in project development for the IRWM Plan, and will therefore have the opportunity to assist in developing projects that address DAC issues such as safe drinking water and wastewater treatment needs.
- *Improve Tribal Water and Natural Resources:* As stated above, one of the purposes of Task 1 (Subtask 1.1-2) is to conduct further outreach efforts to DACs and Tribal entities within the Region so that these communities are more engaged in the IRWM process. Furthermore, another purpose of Subtask 1.1-2 is to engage DAC and Tribal entities to receive input and feedback on a draft and final IRWM Plan section articulating DAC and Tribal water-related issues and their respective water management (critical water supply or water quality) needs. Due to Tribal consultation and collaboration that will be included within Task 1, Tribal issues will be included

within the IRWM Plan, making Tribal groups potentially eligible for future funding for water programs and projects through IRWM grant programs.

***Task 2: Regional Water Resources Plans Development***

As indicated within Table 6-3, Task 2 will directly address six of the eight established Statewide Priorities:

- *Drought Preparedness:* Tasks 2-1 and 2-2 will include work to address and adequately manage groundwater within the Region, therefore greatly increasing water supply reliability for the Region. Through efficient groundwater management of the Region's basins (as proposed under Task 2-1), the Region will be better prepared for drought, climate change, or other conditions that may impact water supply reliability.
- *Climate Change Response Actions:* Task 2-4 will include work to address DWR's Climate Change Requirement included within the 2010 Guidelines. Specifically, Task 2-3 will include climate change analyses that will allow the Region to assess its climate change vulnerabilities, and produce potential climate change adaptation strategies that can be used to address (and potentially adapt to) the identified vulnerabilities.
- *Expand Environmental Stewardship:* Three plans included within Task 2 (Task 2-2, Task 2-3, and Task 2-4) includes elements that promote, improve, and expand environmental stewardship by aiming to assess, protect and enhance (as feasible) the Region's environmental integrity. Task 2 includes work that will assess how water management issues such as groundwater supply and quality, climate change, and flooding will impact the Region's environmental integrity, and analyze what can be done to reduce water management-related environmental integrity impacts.
- *Practice Integrated Flood Management:* Task 2-4 will include work to address the Region's flooding issues, including developing flood control strategies that will increase flood protection and more sustainably manage the Region's flood issues to reduce flood-related damages. This task will integrate flood management with climate change planning in order to assess existing flood management as well as future flood impacts that may occur when considering climate change.
- *Protect Surface Water and Groundwater Quality:* Task 2-3 specifically addresses the Region's groundwater quality by developing forecasts that analyze potential water quality impacts that may arise as the Region's groundwater tables are lowered. It is currently unknown what will occur to groundwater quality as the Region's groundwater is dewatered, but it is possible that dewatering will impact water quality and require costly treatment efforts. As such, Task 2-3 will help the region assess potential groundwater quality impacts to allow the region to pursue future efforts that will protect and possibly restore groundwater quality to safeguard public health and environmental health.
- *Ensure Equitable Distribution of Benefits:* All of the planning studies included within Task 2 are regional projects that will provide multiple benefits to the entire Region. Due to the fact that almost the entire Region qualifies as a DAC, Task 2 will include multi-benefit projects (Regional Water Resources Plans) that consider affected DACs and vulnerable populations.

***Task 3: Updating the ABD IRWM Plan***

As indicated within Table 6-3, Task 3 will directly or indirectly address every Statewide Priority for the IRWM Grant Program per the 2010 Guidelines:

- *Drought Preparedness:* Work included within Task 3 will ensure that the drought-preparedness aspects of Task 2 (see the preceding section for more information) are incorporated into the ABD IRWM Plan. Work completed under Task 3 will ensure that the IRWM Plan includes an

evaluation of how the Region's water managers will manage available groundwater supplies during both normal and dry periods.

- *Use and Reuse Water More Efficiently:* Work included within Task 3 will include an assessment of Resource Management Strategies (RMS) as required by DWR within the 2010 Guidelines. Therefore, Task 3 will include a consideration of RMS relating to water use efficiency such as agricultural water use efficiency, urban water use efficiency, and water recycling. While specific projects that will be included within the IRWM Plan are not known at this time, due to the consideration of the aforementioned RMS, it is possible that the IRWM Plan will include projects that implement water use efficiency measures.
- *Climate Change Response Actions:* Work included within Task 3 will ensure that the climate change analysis included within Task 2-4 (see the preceding section for more information) is incorporated into the IRWM Plan. Work completed under Task 3 will ensure that the IRWM Plan meets the Climate Change Standard Requirements listed within the 2010 Guidelines, including an assessment of water management actions that will address key climate change issues.
- *Expand Environmental Stewardship:* Work included within Task 3 will ensure that the environmental integrity analyses included within Task 2 (see the preceding section for more information) are incorporated into the IRWM Plan. Work completed under Task 3 will ensure that the IRWM Plan includes a discussion of important ecological processes and environmental resources within the Region and the associated water demands to support environmental needs. While specific projects that will be included within the IRWM Plan are not known at this time, due to the importance of environmental integrity to the Region, it is likely that the Plan will include projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment.
- *Practice Integrated Flood Management:* Work included within Task 3 will ensure that the integrated flood analyses included within Task 2-4 (see the preceding section for more information) are incorporated into the IRWM Plan. While specific projects that will be included within the IRWM Plan are not known at this time, due to the importance of flood control to the Region, it is likely that the Plan will include projects that promote and practice integrated flood management to provide multiple benefits.
- *Protect Surface Water and Groundwater Quality:* Work included within Task 3 will ensure that the groundwater quality analyses included within Task 2-3 (see the preceding section for more information) are incorporated into the IRWM Plan. Work completed under Task 3 will ensure that the IRWM Plan includes a discussion of the importance of protecting and restoring groundwater quality to safeguard public and environmental health and secure water supplies for beneficial uses.
- *Improve Tribal Water and Natural Resources:* Work included within Task 3 will ensure that the IRWM Plan section articulating DAC and Tribal water-related issues and their respective water management needs included within Task 1-1 are incorporated into the IRWM Plan. In addition, work completed under Task 3 will potentially position Tribal entities for access to funding for water programs and projects to better sustain Tribal water and natural resources.
- *Ensure Equitable Distribution of Benefits:* Work included within Task 3 will ensure that the IRWM Plan section articulating DAC and Tribal water-related issues and their respective water management needs included within Task 1-1 are incorporated into the IRWM Plan. In addition, work completed under Task 3 will address critical water supply or water quality needs of DACs within the Region. Because almost the entire Region qualifies as a DAC, the IRWM Plan will contain projects that address safe drinking water and wastewater treatment needs of DACs.

**Anza Borrego Desert Integrated Regional  
Water Management  
Planning Grant Proposal**  
*AB 1420 and Water Meter Compliance*

Attachment 7 consists of the following items:

✓ **AB 1420 Self Certification Statement Tables 1 and 2**

The Borrego Water District, who will be administering the proposed Planning Grant funding, is not required to submit AB 1420 Self-Certification Tables 1 and 2.

✓ **Water Meter Compliance Certification Form**

The Borrego Water District is not required to submit the self certification form for compliance with water metering requirements for funding applications.

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The Borrego Water District (BWD), who is the responsible applicant submitting this Planning Grant Proposal to the California Department of Water Resources, does not qualify as an urban water supplier in accordance with the Section 10617 of the California Water Code. Currently, BWD serves potable water through 2,000 water meters and provided approximately 2,800 acre-feet per year (AFY) of water in 2010 and 2,600 AFY in 2011. Therefore, BWD does not meet the criteria of an urban water supplier by providing water to more than 3,000 customers and supplying more than 3,000 AF of water annually. Therefore, this Planning Grant Proposal does not contain AB 1420 or Water Meter Compliance information.

