

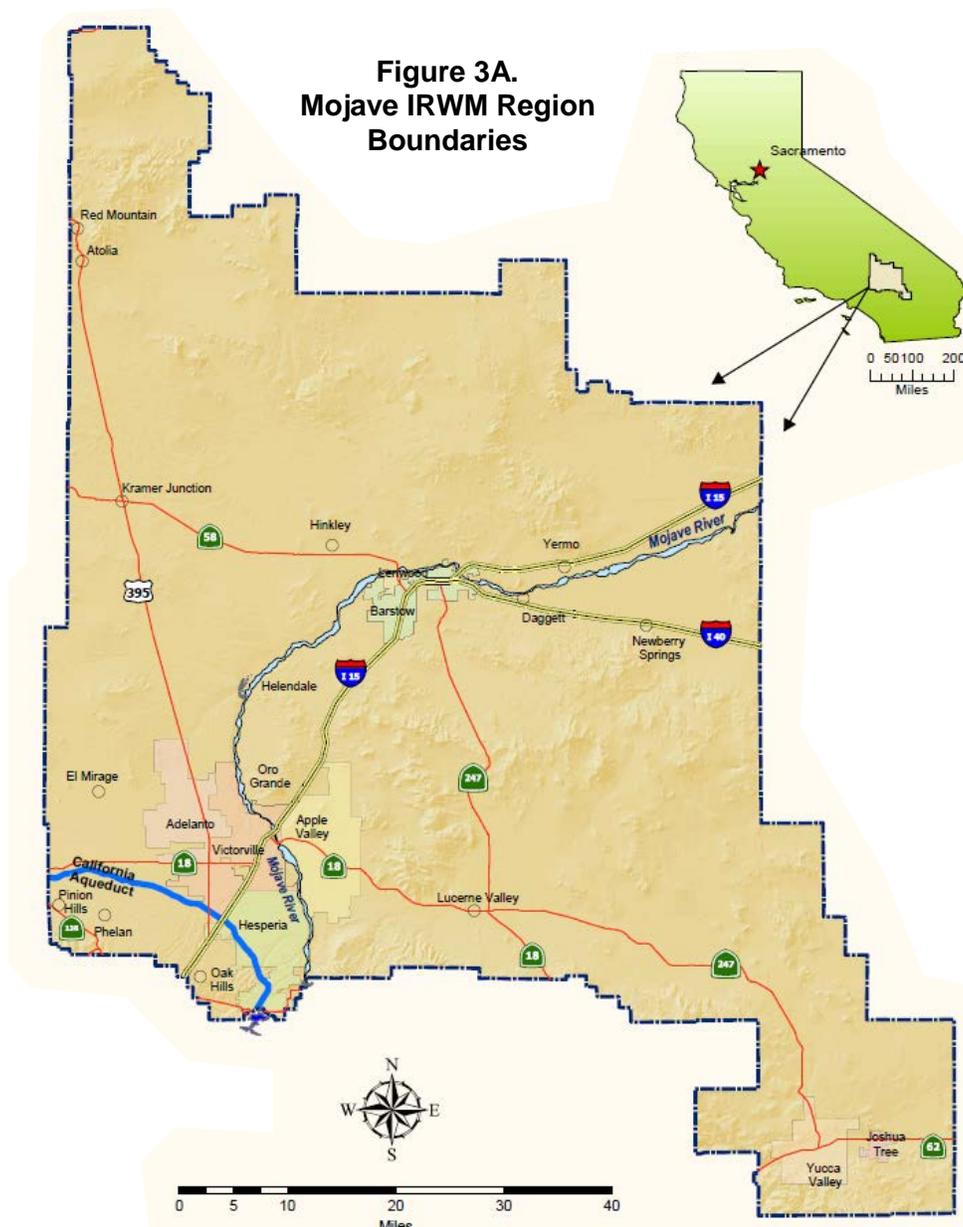
## Attachment 3: Work Plan

### Mojave Water Agency Integrated Regional Water Management Plan Proposition 84 Round 2 Planning Grant Application

#### BACKGROUND

##### The Mojave IRWM Region

The Mojave Integrated Regional Water Management (IRWM) Region, ID No. 18, was approved by the Department of Water Resources (DWR) through the Region Acceptance Process (RAP) in 2009. The Region is located within the Trans-Colorado-Lahontan Funding Area, and follows Mojave Water Agency's (MWA) boundaries. MWA serves as the Regional Water Management Group (RWMG) for the Mojave IRWM Region. The Region covers approximately 4,900 square miles within the High Desert portion of San Bernardino County. See Figure 3A, below.

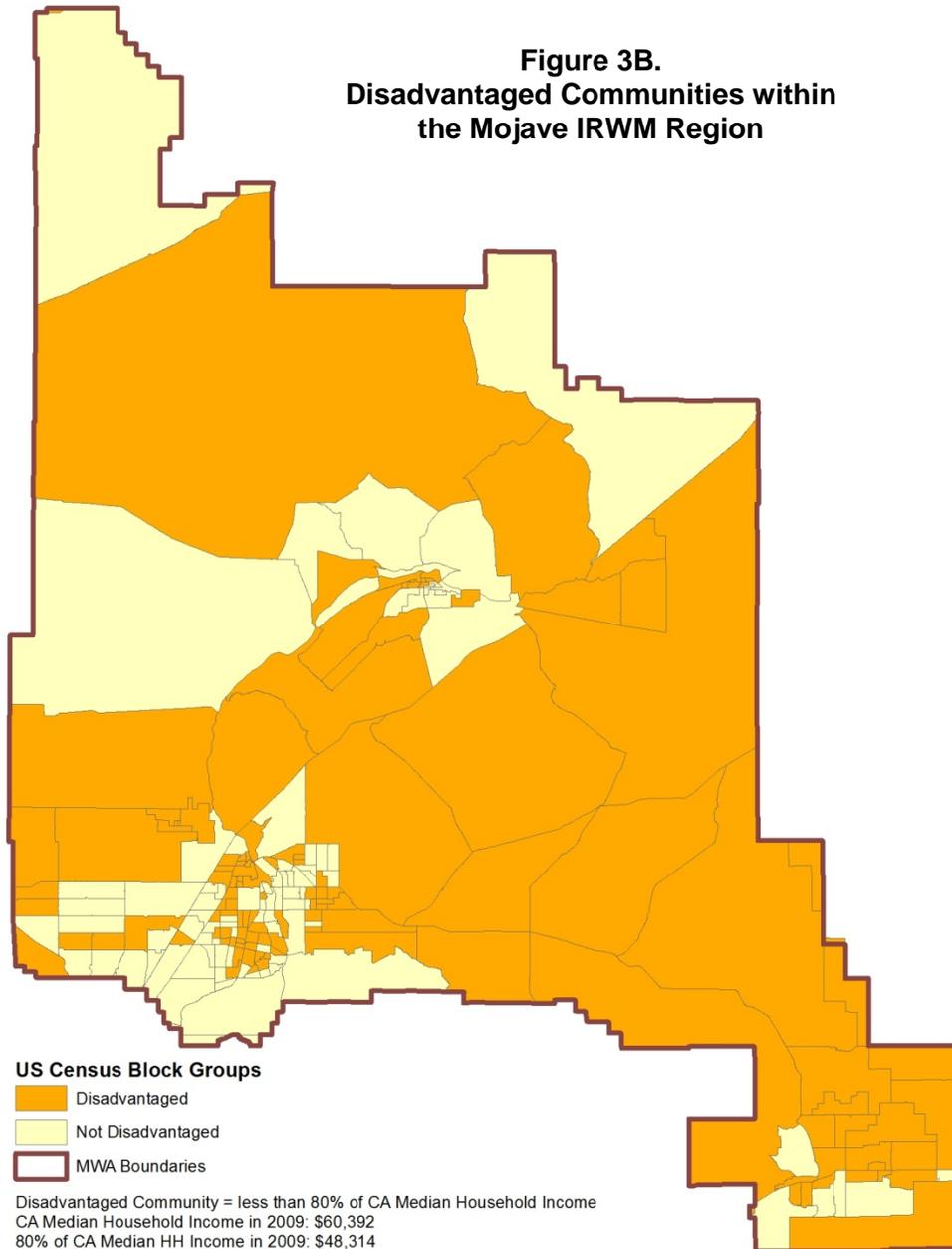


About 450,000 people live within the Region per 2010 Census data. Six incorporated cities are located within the region:

- City of Adelanto
- Town of Apple Valley
- City of Barstow
- City of Hesperia
- City of Victorville
- Town of Yucca Valley.

Slightly more than half of the Census Block Groups located within the Region (125 out of 220) were disadvantaged in 2009, according to U.S. Census data. See Figure 3B, below:

**Figure 3B.  
Disadvantaged Communities within  
the Mojave IRWM Region**



Ten urban water suppliers are located within the region, all of whom are served indirectly by water supplies managed by MWA, and all of whom prepared and submitted 2010 Urban Water Management Plans (UWMP) to DWR:

- City of Adelanto
- Apple Valley Ranchos Water Company
- Golden State Water Company
- Hesperia Water District
- Hi-Desert Water District
- Joshua Basin Water District
- Phelan Piñon Hills Community Services District
- San Bernardino County Service Area 64
- San Bernardino County Service Area 70J
- Victorville Water District

## **The Regional Water Management Group**

Mojave Water Agency was approved by DWR as the Regional Water Management Group (RWMG) for the Mojave IRWM Region. MWA is a wholesale water supplier, a State Water Contractor, and also serves as the Watermaster for the adjudicated Mojave Basin Area. A total of 46 retail water districts are located within the MWA boundary, along with roughly 7,500 private well owners.

As the RWMG for the region, MWA seeks broad stakeholder involvement in its planning efforts. The most widely recognized stakeholder body is the Technical Advisory Committee (TAC) to the MWA, whose participants include representatives from retail water agencies, wastewater agencies, regulators, cities, farmers, private well owners, environmental organizations, and others. A majority of the region's large water and wastewater entities are represented at the TAC. Additionally, "Subarea Advisory Committee" meetings are held where representatives discuss issues related to their respective subareas (sub-units of the Mojave River watershed).

During development of the 2004 IRWMP, the TAC was used as the primary source of input for development, evaluation, and prioritization of regional water management projects and programs. Several priority projects identified by the TAC in the 2004 Plan have been implemented, constructed or are currently under construction. Most of those projects received State and/or Federal funding assistance. We intend to utilize input from the TAC in a similar manner during this update to the IRWMP, along with seeking broader stakeholder outreach as required by California law.

## **CURRENT STATUS IN MEETING IRWM PLAN STANDARDS**

### **Overview**

MWA last updated its IRWMP in 2004. The IRWMP met State requirements at the time it was completed, and included an Urban Water Management Plan (UWMP) and a Groundwater Management Plan (GWMP). General areas that need to be addressed in this update to make the plan standards-compliant include:

- Climate Change and Greenhouse Gas (GHG) evaluation
- Integrated Flood Management
- Expanded stakeholder outreach, including Disadvantaged Communities (DACs)
- Water supply needs of DACs
- Resource Management Strategies in the California Water Plan

In addition to the above-mentioned new elements for this IRWMP update, many existing elements of the Plan will be updated with current information, particularly elements related to projects, programs and management actions that will be identified and evaluated during this Plan update process.

## Compliance with Specific Standards

The need to update the IRWMP to comply with current standards is further described below, following the 16 IRWM Plan Standards outlined in DWR's August 2010 IRWM Guidelines.

### 1. Governance

Chapter 2 in the current IRWMP describes the MWA and stakeholder background. It will be updated to describe MWA's approval as the RWMG for the Mojave IRWM Region, along with the governance structure, decision-making process, and coordination efforts associated with the IRWMP update (*Task 3.3*). In the RAP approval, DWR recommended expanding the IRWM region boundaries to include the upper-most and lower-most portions of the watershed, and some additional outlying areas. A specific task has been included in this work plan to consider expansion of the IRWM Region boundaries (*Task 3.1*).

### 2. Region Description

Much of the information required for the region description is currently included in Chapters 3-5 of the existing IRWMP. The region boundaries may change, and will be updated if appropriate. Water supplies and demands need to be updated with information recently prepared for MWA's Urban Water Management Plan (*Tasks 3.5 and 3.6*).

### 3. Objectives

The 2004 IRWMP included two broad objectives, under which more focused objectives were developed:

1. Balance future water demands with available supplies
2. Maximize the overall beneficial use of water throughout MWA

The objectives set early on in the planning process set the stage for evaluation criteria used in the project review process. In this update to the Plan, the objectives will be re-examined and will again be used to set the tone of the plan and evaluate projects (see *Task 3.13*).

### 4. Resource Management Strategies

The Plan will need to be updated to include the Resource Management Strategies. These strategies will be evaluated as part of the overall water management programs evaluation included in *Task 3.13*. The Plan will identify which strategies will be implemented, and will explain which ones, if any, were not included and why.

### 5. Integration

Integration of stakeholders, governance, and project selection within the IRWM planning process was very important during development of the 2004 IRWMP, and will be critical to this Plan update. The TAC will serve as the primary forum where integration can occur, because many stakeholders representing a broad range of interests will be brought together to discuss their concerns, review objectives of the plan, and evaluate water management programs and projects (see *Task 1.1*, also *Task 3.13*). In order to foster effective integration, a facilitator will be brought in to help TAC meetings be productive and to help identify common themes among stakeholders (*Task 1.5*).

### 6. Project Review Process

The last IRWMP update included specific criteria for evaluating and prioritizing projects. The criteria mainly tiered off of the objectives set early on during Plan development, and also included things such as technical and financial feasibility, work already completed, etc. The review process during this Plan update will be updated based upon input from the TAC and other stakeholders, and the following criteria will also need to be added, based upon DWR's IRWM guidelines:

- Relationship to Resource Management Strategies
- Benefits to DAC water issues
- Environmental Justice (EJ) considerations
- Contribution toward adaptation to climate change
- Greenhouse Gas emissions of the project

The project review process will take place in *Task 3.13* of the work plan.

## 7. Impact and Benefit

The last IRWMP included a Programmatic Environmental Impact Report (PEIR) detailing impacts of projects proposed in the Plan. We do not plan on doing a PEIR for this plan update, but will evaluate impacts as part of the overall project review process. One of the criteria that will be used in the review process will be the relative regional benefit, or multiple benefits, of a project. New considerations will include impacts and benefits for DACs, EJ concerns, and Native American tribes.

## 8. Plan Performance and Monitoring

Performance measures from the 2004 IRWMP update will be revisited to ensure objectives of the current Plan update are met when evaluating this round of proposed projects and management actions. This will occur as part of the Basin Management Objectives and Alternatives task (see *Subtask 3.13.1*)

## 9. Data Management

Collection of data from stakeholders and distribution to stakeholders will be carried out primarily in *Task 1* and will be described in Chapter 8 (*Task 3.12*). Data will be submitted to the State as required.

## 10. Finance

The finance plan and implementation schedule for projects and programs identified in the IRWMP will be updated to reflect projects identified, and will include capital and O&M costs, funding sources, and funding mechanisms (see *Task 3.14*).

## 11. Technical Analysis

The technical analyses supporting the IRWMP update will be documented as appropriate. A number of technical studies will need to be included as a part of this IRWMP update, including:

- Modeling for the Salt/Nutrient Management Plan (*Task 2*)
- Water quality data (*Tasks 3.4 & 3.8*)
- Water demand and supply projections (*Tasks 3.5 and 3.6*)
- Climate change and greenhouse gas (GHG) analysis (*Task 3.9*)
- Water conservation program options and program evaluation (*Task 3.10*)
- Integrated Flood Management planning (*Task 3.11*)
- Project review and evaluation process (*Task 3.13*)

## 12. Relation to Local Water Planning

A high degree of coordination occurs between local and regional water planning efforts. Most of the retail water suppliers participate in the regional water planning efforts, as was the case during the 2004 IRWMP update and the 2010 UWMP update. Retailers rely on MWA's regional water supply projections as the basis for their own projections. Additionally, MWA reviews retailers' planning documents for inclusion in the IRWMP, particularly their UWMPs. A description of retailers' UWMPs will be included in Chapter 2 (*Task 3.3*) and Chapter 6 (*Task 3.8*).

## 13. Relation to Local Land Use Planning

Water demand projects will be based primarily off of growth projections by the regional government agencies (San Bernardino Associated Governments and Southern California Association of Governments) which tier off of growth projections by local land use authorities (cities and the county). By doing this, water supply needs identified in the IRWMP are based in actual anticipated population and economic growth by the local land use authorities (will be included in *Task 3.6*). Additionally, as part of the stakeholder outreach, local governments will be included. This will likely occur through participation in the TAC.

## 14. Stakeholder Involvement

We have dedicated a large portion of the project budget to stakeholder outreach—\$246,000 or almost 20% of the total project budget. MWA will outreach to all the stakeholder groups required by the State (*Tasks 1.1 and 1.2*), but we have also included specific scoping items for outreach to certain stakeholder groups:

- Disadvantaged Communities (*Task 1.4*)
- Wastewater agencies (*Task 2.1*; as part of the Salt/Nutrient Management Plan effort)
- Flood Control agencies (*Task 3.11*)

Most of the water and wastewater-related agencies, and other organizations with particular interested in the IRWMP, will participate through the TAC. In order to encourage broader community involvement, we will also hold community meetings/public workshops (*Task 1.2*). Some stakeholders who in the past have not been involved in water planning efforts within the MWA boundary and will be outreached to during this Plan update include: electrical corporations, Native American tribes, environmental stewardship organizations, and DACs.

### **15. Coordination**

As mentioned in #14, above, stakeholder coordination will be a large portion of the effort to update MWA's IRWMP. One of the purposes of *Tasks 3.13* and *3.14* will be to develop regional projects and management actions that serve multiple benefits and take advantage of efficiencies through coordinated efforts between stakeholders. The process of identifying and refining potential projects to serve the most benefit among stakeholders will be guided by a facilitator with extensive experience in facilitating this type of stakeholder participation (*Task 1.5*). One area not addressed in the current IRWMP is inter-regional coordination, and will be addressed through TAC meetings in *Task 1.2*.

### **16. Climate Change**

Climate change is a new topic that was not addressed in the 2004 IRWMP. We will add a new chapter to the Plan that includes an evaluation of the potential effects of climate change on the region, vulnerability to climate change and adaptation measures, as well as an assessment of the GHG emissions of current and proposed projects (see *Task 3.9*). At a minimum, the climate change section will include:

- A vulnerability assessment of the region using the checklist assessment in the *Climate Change Handbook for Regional Water Planning*.
- A list of prioritized vulnerabilities based on the checklist assessment.
- A plan for data gathering/analyzing the prioritized vulnerabilities.

## **Salt/Nutrient Management Planning**

We plan to use this IRWMP update as an opportunity to prepare a Salt/Nutrient Management Plan (SMP) in accordance with the State Water Resources Control Board's Recycled Water Policy adopted February 3, 2009 (SWRCB Resolution No. 2009-0011). We believe the IRWMP is an appropriate venue for the region's stakeholders to participate in a SMP, because the IRWMP sets the framework for water management in the region, brings stakeholders together to collaborate and integrate water management solutions, and has substantial areas of overlap with the elements needed for completion of a SMP. We have worked with the Lahontan and Colorado River Regional Water Quality Control Boards to prepare the scoping items included in the SMP portion of the Work Plan (see *Task 2*).

## **Participation by U.S. Bureau of Reclamation**

MWA has applied for assistance from the U.S. Bureau of Reclamation (Reclamation) for the preparation of certain tasks within the IRWMP update. Reclamation's assistance, if granted to MWA, will come in the form of a funding amount made available for Reclamation's staff to work on portions of the IRWMP update. MWA has requested that Reclamation staff work specifically on the following Tasks:

- Task 3.9: Climate Change Analysis
- Task 3.10: Water Conservation and Demand Management Measures
- Task 3.11: Integrated Flood Management

These, along with the other tasks to be included in the IRWMP update, are described in the Work Plan below.

## GRANT WORK PLAN CONTENT

### Work Plan Overview

The Work Plan is divided into three major task groupings:

1. Meetings & Stakeholder Outreach
2. Salt/Nutrient Management Plan
3. Plan Update

Task 1 describes the level of effort needed to outreach to stakeholders during the IRWMP update process, including stakeholder meetings and MWA Board meetings.

Task 2 consists of a Salt/Nutrient Management Plan (SMP) appendix to the IRWMP, and specific tasks to complete the work. MWA intends to prepare a SMP for the Mojave Region as part of this plan update, pursuant to the State Water Resources Control Board's Recycled Water Policy adopted February 3, 2009 (Resolution No. 2009-0011).

Task 3 follows the outline of the 2004 IRWMP, and describes updates that will be made to existing chapters and new chapters to be added to the Plan where needed.

<b>WORK PLAN OUTLINE</b>
<b>Task 1: Meetings &amp; Stakeholder Outreach</b>
1.1: Technical Advisory Committee
1.2: Public Workshops
1.3: MWA Board of Directors
1.4: Disadvantaged Communities (DACs)
1.5: Facilitator for Stakeholder Groups
1.6: Meetings with MWA Staff
<b>Task 2: Salt/Nutrient Management Plan</b>
2.1: Stakeholder Participation
2.2: Review/Assemble Data & Research
2.3: Update and Run Water Quality Model
2.4: Salt/Nutrient Characterization
2.5: Monitoring & Reporting Plan
2.6: Implementation Measures
2.7: Recycled Water & Stormwater Use/Recharge
2.8: Preliminary CEQA Analysis
2.9: Prepare Plan for Submittal to Water Boards
<b>Task 3: Plan Update</b>
3.1: Evaluate Expanding the IRWM Planning Area Boundaries
3.2: Update Chapter 1, Introduction
3.3: Update Chapter 2, Agency and Stakeholder Background
3.4: Update Chapter 3, Physical Setting
3.5: Update Chapter 4, Water Supply
3.6: Update Chapter 5, Water Demand
3.7: New Chapter, Water-Related Needs of Disadvantaged Communities
3.8: Update Chapter 6, Water Shortage Contingency Planning
3.9: New Chapter, Climate Change Analysis
3.10: Update Chapter 7, Water Conservation and Demand Management Measures

3.11: New Chapter, Integrated Flood Management
3.12: Update Chapter 8, Stakeholder Assessment and Public Outreach
3.13: Update Chapter 9, Basin Management Objectives and Alternatives
3.14: Update Chapter 10, Management Actions
3.15: Update Appendices to the IRWMP
3.16: Multimedia Executive Summary

## Task 1: Meetings & Stakeholder Outreach

The ongoing outreach process is critical to an update of the Mojave IRWM Plan. Keeping the Technical Advisory Committee, Disadvantaged Communities, and other stakeholder involved in the process will ensure the update to the IRWM Plan will be successful.

### Task 1.1: Technical Advisory Committee

The Technical Advisory Committee (TAC) to the Mojave Water Agency is a regional stakeholder advisory group to the MWA, consisting of retail water providers, local and regional government agencies, private well owners, environmental organizations, and other community groups. The TAC played a key role in the development of the region's last (2004) IRWMP and will be involved throughout the development of this IRWMP update. The TAC will be particularly involved in the identification and evaluation of regional water management programs and projects (*Task 3.13* in the Work Plan). In addition to local stakeholders, representatives from adjacent IRWM regions will be invited to participate in TAC meetings, to facilitate improved coordination between regions.

#### **Deliverable:**

- Hold up to eighteen (18) meetings with the TAC throughout development of the IRWMP update.

### Task 1.2: Public Workshops

In addition to TAC meetings, in order to encourage broader public participation the MWA intends to hold public workshops throughout the Mojave IRWM Region to present the IRWMP and receive comments on the IRWMP. It is preliminarily anticipated these workshops would be held in:

- Apple Valley (MWA headquarters)
- Barstow
- Yucca Valley

This task is intended to provide broad stakeholder outreach, as required in the IRWMP Act, including outreach to (as applicable):

- Wholesale and retail water purveyors
- Wastewater agencies
- Flood control agencies
- Municipal and county governments and special districts
- Electrical corporations
- Native American tribes
- Self-supplied water users
- Environmental stewardship organizations
- Community organizations
- Industry organizations
- State, federal, and regional agencies or universities
- Disadvantaged community members (see *Task 1.4*)
- Any other interested group as appropriate to the region

#### **Deliverables:**

- Hold three (3) public workshops to receive public input.

- Compile the input received at the workshops into meaningful articulation of their water management needs and incorporate into development of the IRWMP.

### **Task 1.3 MWA Board of Directors**

During development of the plan, workshops and public meetings for adoption of the IRWMP will be held during the MWA Board of Directors meetings. Additionally, meetings will be held at the Planning, Resources & Technology (PRT) Committee of the MWA Board.

#### ***Deliverables:***

- Hold up to three (3) workshops at MWA Board meetings, and up to two (2) additional public meetings for adoption of the IRWMP update.
- Hold up to five (5) meetings or workshops at the PRT committee.

### **Task 1.4: Disadvantaged Communities Outreach**

The goal of Disadvantaged Communities (DAC) outreach is to identify additional groups and obtain input that may be otherwise lacking from the IRWM planning and implementation efforts due to financial constraints. Communities targeted as part of the DAC outreach are groups that have historically been disproportionately impacted with respect to the development, implementation, or enforcement of environmental laws, regulations, and policies due to race, culture, and/or income. Over half of the households in the IRWM Region fall within DACs as of 2009.<sup>1</sup> Some of the more rural outlying areas within the Region have a higher portion of DACs.

#### ***Deliverables:***

- Prepare a comprehensive list of DAC community groups and contacts
- Conduct three (3) workshops for DACs to inform them of the IRWM process and seek their input
- Compile the input received at the DAC workshops into meaningful articulation of their water management needs and include in a section of the IRWMP.

### **Task 1.5: Facilitator for Stakeholder Groups**

The goal for the facilitator is to promote stakeholder participation through each step in the process of developing the IRWMP. In particular, the facilitator will guide discussions regarding regional water supply projects and management actions, find common themes in the needs expressed and ideas conveyed, and distill input into meaningful projects or programs.

The facilitator should have a proven track record with extensive experience in facilitating public meetings for discussion and prioritization of projects similar to those which would potentially be included in MWA's IRWMP (public facilities, water supply facilities, conservation programs, management actions, and similar projects).

#### ***Deliverable:***

- Facilitate up to eighteen (18) Technical Advisory Committee (TAC) meetings, three (3) DAC workshops, and three (3) additional public workshops.

### **Task 1.6: Meetings with MWA Staff**

Throughout development of the plan, MWA project management staff will hold routine meetings with the consultant. Most of these meetings will probably be via conference call. During plan development, conference calls with project staff will be held as frequently as once every two weeks.

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<sup>1</sup> Census Block Groups with median household income below \$48,314 in 2009 (80% of CA median household income in 2009). U.S. Census American Community Survey 2005-09 data.

**Deliverable:**

- Hold bi-weekly conference calls with MWA staff (up to 52 calls)

<b>SUMMARY OF MEETINGS</b>				
<b>Meeting Type</b>	<b># of Meetings</b>	<b>Anticipated Staffing at Meetings</b>		
		<b>Principal</b>	<b>Proj. Mgr.</b>	<b>Facilitator</b>
Technical Advisory Committee	18	✓	✓	✓
Public Workshops	3	✓	✓	✓
Board of Directors	5	✓	✓	
PRT Committee	5	✓	✓	
DAC Outreach Workshops	3	✓	✓	✓
Conference Calls	52	✓	✓	

**Task 2: Salt/Nutrient Management Plan**

**Purpose**

The purpose of this task is to develop a regional Salt/Nutrient Management Plan (SMP) for the Mojave Water Agency Integrated Regional Water Management (IRWM) Region that will identify and manage, on a regional basis, salts and nutrients from sources within the region, for the purpose of maintaining regional water quality objectives and supporting beneficial uses. The intention is to involve surface water users, groundwater users and wastewater dischargers in the Mojave IRWM Region, as appropriate, to participate in efforts to protect these waters from accumulating concentrations of salt and nutrients that would degrade the quality of water supplies in the Mojave IRWM Region to the extent that it may limit their use.

The SMP area boundaries will include the MWA service area and its basins, as well as any contributors to salts and nutrients that occur outside the SMP area boundaries (sources of imported water supplies, discharges to the basins from upstream water uses, and headwaters to the Mojave River). The discreteness of the plan will depend on the amount and detail of water quality and land use data available.

**Background**

On February 3, 2009, the State Water Resources Control Board (SWRCB) adopted a Recycled Water Policy (Policy) that addresses the concern for protecting the quality of California’s groundwater basins. In response to this Policy, the Mojave Water Agency (MWA) and Victor Valley Wastewater Reclamation Authority (VWVRA), with support from Lahontan Regional Water Quality Control Board (Lahontan Water Board) and Colorado River Regional Water Quality Control Board (Colorado Water Board) staff, initiated efforts to organize a group to develop a regional SMP for the Mojave IRWM Region.

Per the Policy, the SMP shall be completed and proposed to the Lahontan and Colorado Water Boards by May 14, 2014. If the Water Boards find that the stakeholders are making substantial progress toward completion of the plan, the deadline, at the discretion of the Water Boards may extend the deadline till May 14, 2016. In no case shall the period for the completion of the plan exceed seven years from the date of the Policy.

**Goals**

- Manage salts and nutrients on a regional basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses.
- Prepare a Salt/Nutrient Management Plan, in a collaborative effort with stakeholders, which meets the requirements for a SMP as described in the SWRCB Policy.
- Identify agencies responsible for managing current and future anthropogenic loads, solicit participation by these agencies in the development of the SMP, including identification of

management actions, and agencies responsible for carrying out those management actions, to achieve the water quality levels specified in the plan.

- Audit and leverage existing information and studies conducted within the Mojave IRWM Region in order to avoid duplication of efforts in preparing the SMP.
- Develop the Plan to be consistent with and incorporated into the IRWMP ultimately adopted by the MWA.

### **Task 2.1: Stakeholder Participation**

Collaborate with Lahontan and Colorado Water Board staff and other stakeholders, receive and review stakeholder input. It is anticipated that most of the stakeholder participation will occur during meetings of the Technical Advisory Committee to the MWA, in the context of the IRWMP update. A primary initial outcome of this task will be to reach consensus regarding the stakeholder participants appropriate for this planning effort and to identify ways to effectively involve as many of those stakeholders with the TAC as is practical.

#### ***Deliverable:***

- Compile input from stakeholders and incorporate into development of the SMP

### **Task 2.2: Review/Assemble Existing Data & Research**

Evaluate existing data and previously completed water quality management efforts to prepare an adequate SMP. An extensive amount of research and data collection has already occurred with respect to salts and nutrients in the Mojave IRWM Region. A Groundwater Quality Analysis<sup>2</sup> and associated STELLA Model was developed in 2007 that identified contributors to salt (specifically, TDS) within the Region, evaluated current and past trends in water quality, and modeled potential changes over time due to loading from various existing and anticipated sources under different scenarios. Existing information and research may need to be updated, but to the extent possible, new research should be minimized and existing information should be leveraged for inclusion within the SMP. At a minimum, the following sources should be reviewed:

- The 2007 Groundwater Quality Analysis
- Groundwater Quality Planning Model (STELLA Model) developed for the 2007 Groundwater Quality Analysis
- MWA's groundwater monitoring program and associated water quality database
- Site-specific monitoring data from GeoTracker or other data provided by the Water Boards, as appropriate
- MWA's 2004 RWMP, which includes a Groundwater Management Planning component, and associated EIR
- Potential for Ground-Water Contamination from Movement of Wastewater Through the Unsaturated Zone, Upper Mojave River Basin, California, 1993
- Technical Study to Evaluate a Long-Term Water Management Program Between MWA and Metropolitan Water District, and associated EIR, December 2005
- July 29, 2004 Memorandum Of Understanding between MWA, Lahontan Regional Water Quality Control Board, and High Desert Power Project, LLC.
- Antidegradation Studies for Discharges to Surface and Groundwater, Victor Valley Wastewater Reclamation Authority (VWVRA) 2009
- Mojave River Characterization Study, VWVRA 2010
- Cumulative Impact Analysis, VWVRA 2011
- Various U.S. Geological Survey studies

#### ***Deliverable:***

- Prepare a brief memorandum summarizing the adequacy of existing data and information, and what additional work will need to be done to complete the SMP

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<sup>2</sup> Groundwater Quality Analysis Technical Memorandum/Phase 1 Between Mojave Water Agency and Schlumberger Water Services. May 7, 2007

### **Task 2.3: Update and Run Water Quality Model**

This task will be completed by Schlumberger Water Services (SWS) using the existing STELLA model SWS developed for Mojave Water Agency in 2007. The model will be updated to include TDS data acquired since the original model run in 2007. Also, the model will be modified and run for Nitrate data. Data identified in *Task 2.2* that is appropriate to the model runs should be included. Planning scenarios and timeframes to be included in the model runs will be identified during the SMP development process.

#### ***Deliverables:***

- Update STELLA Model with most recent available TDS data, Nitrate data, and appropriate planning scenarios based upon available planning information.
- Run the model to produce new outputs based upon data updates.

### **Task 2.4: Salt/Nutrient Characterization**

Characterize salt and nutrients within the Mojave IRWM Region and groundwater basins, utilizing the model runs conducted in *Task 2.3*. The Salt & Nutrient Characterization will include TDS and Nitrate, and will evaluate the following:

- Existing and background water quality.
- Current and projected sources of salts/nutrients. Review/update existing planning scenarios, including a map and database of current land uses contributing to salt/nutrients. Identify the quality and quantity of existing and projected wastewater/recycled water discharges to basins, imported water recharge, septic discharges, return flow from applied agricultural and dairy water, and other sources of salt/nutrients.
- The basins' assimilative capacity of salts/nutrients, to the extent possible with the current body of knowledge.
- The regional effects and loading estimates of salt/nutrients from existing and projected land uses and water management practices identified, to the extent possible with the current body of knowledge.
- Existing locations/areas of concern that present potential threats to the beneficial use of water resources within the study area (e.g. GIS maps)
- Potential short and long-term regional water quality impacts associated with implementing projects identified in the accompanying IRWMP consistent with the State Antidegradation Policy (Resolution No. 68-16).

#### ***Deliverables:***

- Prepare a draft report for the stakeholders including data collected and results found in the salt/nutrient characterization.
- Prepare maps showing the results of data evaluation and modeling results.

### **Task 2.5: Monitoring & Reporting Plan**

Review existing monitoring programs, identify data gaps, and recommend changes if needed, in order to comply with SMP requirements. Include in the SMP a Monitoring Plan that provides a reasonable means of determining whether the concentrations of salts, nutrients, and other constituents of concern are consistent with applicable water quality objectives. The monitoring plan should be designed to evaluate the long-term regional impacts to groundwater quality resulting from current and future land uses, as well as localized impacts in critical areas where appropriate, and should include the following:

- Recommendations for additional appropriate monitoring locations and frequencies that collectively would represent the regional-level water quality and changes in water quality for basins within the SMP. In addition, the monitoring program should identify critical localized areas where additional monitoring should be concentrated near water supply wells and areas proximate to large water recycling projects and groundwater recharge projects.
- Include a provision for identifying and monitoring Constituents of Emerging Concern.
- List stakeholders responsible for development of new monitoring sites/facilities, conducting, compiling, and reporting the monitoring data.
- Determine the cost of additional monitoring and possible funding sources.

- Data from the Monitoring Plan will be reported to the Lahontan and Colorado Water Boards every three (3) years by the appropriate collecting parties.

***Deliverables:***

- Identify stakeholders responsible for monitoring
- Draft monitoring plan

**Task 2.6: Implementation Measures**

Identify and recommend methods and regional Best Management Practices (BMP's) to manage salt and nutrient loadings on a sustainable basis. Development of implementation measure recommendations and BMP's should be of a regional nature and through a collaborative process with the stakeholders.

***Deliverable:***

- Figures, tables, and write-up summarizing implementation measures and agencies responsible for implementation

**Task 2.7: Recycled Water & Storm Water Use/Recharge**

Identify recycled water and storm water use/recharge goals and objectives.

***Deliverable:***

- Draft recycled water & storm water use/recharge section

**Task 2.8: Preliminary CEQA Analysis**

Prepare an Initial Study for the SMP pursuant to California Environmental Quality Act (CEQA) guidelines.

***Deliverable***

- Initial Study pursuant to CEQA guidelines

**Task 2.9: Prepare Plan for Submittal to Water Boards**

The SMP shall be completed and proposed to the Lahontan and Colorado Water Boards by May 14, 2014, unless the Water Boards find that the stakeholders are making substantial progress toward completion of the plan. In no case shall the period for the completion of the plan exceed seven years.

***Deliverables:***

- Draft Salt/Nutrient Management Plan
- Conduct up to four (4) meetings with Regional Water Boards to present the SMP
- Final Salt/Nutrient Management Plan

**Task 3: Plan Update**

This task describes the updates and new information needed to be included in the document to bring it up-to-date and make it compliant with current IRWMP standards. The tasks and sub-tasks included here follow the outline of the existing 2004 IRWMP, with more detail where needed to describe updates or new information to be added into the document. The Table of Contents from the 2004 has been included as an attachment to this Work Plan, with the text color-coded to indicate the amount of work needed:

- Black text indicates the section is current and needs no updating.
- Green text indicates sections needing to be updated.
- Red text indicates a new section to be added to the plan.

Where text is Green or Red, specific information is included in this Work Plan to give clear direction as to the work that is needed.

**Task 3.1: Evaluate Expanding the IRWM Planning Area Boundaries**

Evaluate inclusion of areas outside the current Mojave IRWM Planning Region per DWR's recommendations in their September 2009 Region Acceptance Process (RAP) Decision. In the RAP

decision, DWR approved the Mojave IRWM Planning Region as submitted (currently coincides with MWA boundaries); however they recommended expanding the planning area to include and/or address the following:

- Include the lower portion of the watershed (Afton Canyon northeast of the region)
- Include the upper portion of the watershed (Lake Arrowhead area south of the region)
- Include the Twentynine Palms area
- Address minor areas of overlap with the Antelope Valley IRWM Region

Early in the development of the IRWMP, through a collaborative process with the TAC and stakeholders in the areas identified, prepare an evaluation of inclusion of these areas. The evaluation should consider the technical and political hurdles of including these areas, as well as an assessment of the benefits of including these areas. A summary of the evaluation process will be included in Chapters 1 or 2 of the IRWMP, as appropriate, and other sections of the IRWMP should be updated to reflect any changes to the IRWM Planning Area that result.

***Deliverables:***

- Prepare summary of technical and political feasibility and hurdles of including the new areas recommended in DWR's RAP approval.
- Present summary to TAC, review TAC's input, and prepare final decision for inclusion in Chapters 1 or 2 of the IRWMP.
- Update information in the IRWMP, as needed to reflect the change, if any, in the IRWM Planning Area boundary.

**Task 3.2: Update Chapter 1, Introduction**

The introduction describes the purpose of the IRWMP, approach, legal basis for the Plan, and contains checklists for the Integrated Regional Water Management Planning, Urban Water Management Planning and Groundwater Management Planning components. The IRWMP checklist should be updated to reflect current State law and the 16 IRWM Plan Standards included in DWR's August 2010 IRWM Guidelines. The introduction will need to be updated as appropriate to reflect current information.

***Deliverables:***

- Update introduction text as appropriate to reflect current information
- Update the IRWM, UWMP and GWMP checklists

**Task 3.3: Update Chapter 2, Agency and Stakeholder Background**

Chapter 2 describes formation of MWA, legal authority of MWA, adjudications of groundwater basins within the Agency boundaries, summarizes the 1994 IRWMP, and describes major stakeholders. Much of the Agency background information has not changed; however, the Stakeholder information will need to be updated as appropriate.

***Deliverables:***

- Change the summary of the 1994 IRWMP to a summary of the 2004 IRWMP
- Update the Stakeholder information to reflect any changes in the stakeholders already listed, and list new Stakeholders as identified in IRWM Planning law (Section 10540 of the Water Code)
- Update other portions of Chapter 2 as appropriate

**Task 3.4: Update Chapter 3, Physical Setting**

Chapter 3 describes the physical setting of the Mojave IRWM Region, including information on geology, groundwater, surface water, and wastewater. Most of the information in this chapter has not changed except for the Wastewater section. A detailed update to regional wastewater information is contained in the 2010 UWMP (Section 4, Recycled Water), including current wastewater entities, wastewater flows,

flow projections, and plans for future wastewater treatment plants or plant expansions. The information in the 2010 UWMP should be sufficient to update the wastewater portion of Chapter 3 in the IRWMP.

***Deliverable:***

- Update the Wastewater portion of Chapter 3 with information from the 2010 UWMP, and other updates if appropriate.

**Task 3.5: Update Chapter 4, Water Supply**

Chapter 4 describes all sources of water supply to MWA, including local sources and imported water from the State Water Project (SWP), as well as single- and multiple-dry year supplies. Much of the base information contained in Chapter 4 is still relevant (types and descriptions of supplies), but numbers will need to be updated to reflect current data. Much of the updated numbers are contained within the 2010 UWMP; however some of the more detailed information on hydrology is not. Two new categories of supply were included in the 2010 UWMP that were not included in the 2004 IRWMP: return flows to groundwater (from recycled wastewater and septic tanks) and agricultural depletion from storage. These should be included and are described in detail in the 2010 UWMP (Section 3). Chapter 4 may need to be reorganized to make sense with the additional information. Single- and multiple-dry year supplies are also included in the 2010 UWMP (Sections 3 and 6), and can be used to update that portion of Chapter 4.

***Deliverables:***

- Update water supply data in Chapter 4, including new information from the 2010 UWMP.
- Update single- and multiple-dry year supply information.

**Task 3.6: Update Chapter 5, Water Demand**

Update Chapter 5 with current and projected water demand information from the UWMP. Demand information from the 2010 UWMP should need very little re-work to be incorporated into the IRWMP update. Water demand projections are included in Section 2 of the 2010 UWMP; water supply and demand balance is evaluated in Section 3 of the 2010 UWMP; single- and multiple-dry year water balance is in Section 6 of the 2010 UWMP. Some changes may be made to the water supply or demand numbers currently contained in the 2010 UWMP based upon research being done by MWA's Watermaster Engineer. This information will be provided by MWA staff utilizing an existing water demand forecasting model that was prepared in conjunction with the 2010 UWMP.

***Deliverable:***

- Update water demand projection information, supply and demand balances, and single-and multiple-dry year water balances in Chapter 5.

**Task 3.7: New Chapter, Water-Related Needs of Disadvantaged Communities**

The goal of this task is to identify drinking water needs of disadvantaged communities (DACs) within the Mojave IRWM Region. Needs might include deficient infrastructure or water quality issues that limit drinking water supplies to DACs. Input from DAC community members and from other stakeholder groups (see *Task 1.4: Disadvantaged Community Outreach*) will be compiled, and specific needs identified and listed in the IRWMP. The DAC water supply needs will be utilized to identify potential projects to include within the projects and management actions evaluation in *Task 3.13*.

***Deliverables:***

- Identify drinking water needs of DACs
- Develop potential projects and/or programs to address those needs
- Evaluate projects and programs within the broader evaluation in *Task 3.13*.
- Document DAC participation, needs evaluation, and project identification/evaluation in a new chapter of the IRWMP.

### **Task 3.8: Update Chapter 6, Water Shortage Contingency Planning**

Much of this update has been done in Section 8 of the 2010 UWMP. Information should mostly just be copied into Chapter 6. However, the IRWMP also summarizes the water shortage contingency plans of other retail Urban Water Suppliers within the region, which will need to be updated as appropriate.

***Deliverables:***

- Update MWA water shortage contingency planning information.
- Update retail urban water suppliers' water shortage contingency planning information.

### **Task 3.9: New Chapter, Climate Change Analysis**

The 2004 IRWMP does not include a discussion on the potential for and impacts of climate change in the Mojave IRWM Region. A climate change analysis will be conducted based on State climate change guidance (DWR's IRWM documentation; the *Climate Change handbook for Regional Water Management*, December 1, 2011; and other documentation as applicable). The Work Plan anticipates preparation of an evaluation of the effects of climate change on the region's water supplies, and adaptability to climate change of infrastructure, water management strategies and flood control within the Region. The analysis will also include a Greenhouse Gas (GHG) inventory of existing and proposed water management projects to be included in the evaluation of potential projects in *Task 3.13*.

***Deliverables:***

- Effects of climate change on regional water supplies.
- Adaptability to climate change of infrastructure, water management strategies, and flood control.
- GHG inventory of existing and proposed water management projects. Proposed water management projects include the alternatives identified in *Task 3.13*.

### **Task 3.10: Update Chapter 7, Water Conservation and Demand Management Measures**

Chapter 7 in the 2004 IRWMP was written before regional water conservation programs were being implemented. This chapter will need to be updated to describe current conservation efforts. Much of this information is contained in the 2010 UWMP, but some updates will need to be done to reflect the current status of conservation programs. In addition to current conservation programs, this task anticipates the development of new options and recommendations for conservation activities through a collaborative effort with the TAC. If appropriate, this task may include the preparation of a Long-Term Water Conservation Plan for MWA.

***Deliverables:***

- Update the water conservation and demand management measures information.
- Prepare a Long-Term Conservation Plan, in coordination with the Alliance for Water Awareness and Conservation (AWAC) and MWA staff.

### **Task 3.11: New Chapter, Integrated Flood Management**

The goal of an integrated flood management component within the IRWMP update is to promote and practice integrated flood management and collaboratively develop regional flood management practices and projects, consistent with statewide integrated flood management guidelines.

Enhanced integration of flood management issues would benefit the Mojave IRWM Region. The Region receives an average of only five to seven inches of rainfall per year, but flooding can still cause damage due to infrequent but intense storms. The boundaries of the region include almost exclusively desert climate, with occasional flash floods occurring on the desert floor. Additionally, flooding can occur within the Mojave River, where most flows originate in San Bernardino Mountains and drainage areas contributing to flows receive around 40 inches of rainfall per year.

The primary flood control agency within the Mojave IRWM Region is the San Bernardino County Flood Control District. However, the Mojave River Dam, which regulates flood water flows in the Mojave River, is maintained by the US Army Corps of Engineers. Additionally, cities and emergency management agencies within the Region respond to flooding incidents as they occur.

***Subtask 3.11.1 Review/Compile Existing Flood Management Plans & Activities***

The purpose of this task is to identify the existing framework in which flood management currently occurs within the Mojave IRWM region. Compile information as appropriate, including identifying agencies that participate in flood management or flood response activities, existing flood management plans and programs, existing flood control facilities, historical rainfall and flood data, and a description of the current level of coordination between agencies. Identify appropriate stakeholders that should participate in the integrated flood management planning process.

***Deliverable:***

- Prepare a brief memo identifying stakeholders, existing flood management plans & activities, and existing flood management infrastructure.

***Subtask 3.11.2 Identify Flood Protection Needs***

In coordination with the stakeholders, identify flood protection needs. To facilitate discussion, information gathered in *Subtask 3.11.1* should be assembled and presented to the stakeholders. Develop a draft and final matrix of flood management needs.

***Deliverable:***

- Compile and prepare a comprehensive list of flood management needs identified.

***Subtask 3.11.3 Develop & Prioritize Flood Protection Projects & Management Actions***

Based upon the needs identified in *Subtask 3.11.2*, identify flood management projects and management actions. Provide examples to the stakeholders of projects and Best Management Practices (BMPs) that have been implemented in other IRWM areas or that have been identified by the State (e.g., the California Water Plan). Potential projects and management actions might accomplish the following:

- Better emergency preparedness and response
- Improved flood protection
- Integration of flood control and water supply infrastructure
- Enhanced floodplain ecosystems
- Low Impact Development techniques that store and infiltrate runoff while protecting groundwater
- Coordination between flood management agencies

Develop criteria for evaluating and prioritizing projects. Criteria might include feasibility, maximum benefit for the least cost, and provision of multiple benefits. Projects should be prioritized through a collaborative process with the stakeholders. Priority projects will be included for further evaluation in the broader water management project evaluations in *Task 3.13*.

***Deliverables:***

- Prepare flood protection projects & management actions
- Develop evaluation criteria, and evaluate/prioritize project & management actions.

***Subtask 3.11.4 Prepare Flood Management Component of the IRWMP***

Document the process undertaken in *Subtasks 3.11.1-3.11.3*, and compile an Integrated Flood Management Plan for the Mojave IRWM Region. This comprehensive plan will lay out the current level of flood management planning, describe existing flood control facilities and programs, identify flood protection needs, and develop and prioritize flood protection projects and management actions, including project funding priorities. Incorporate the Flood Management Plan into the overall IRWMP update.

***Deliverable:***

- Prepare flood management component of the IRWMP

### **Subtask 3.11.5 Stakeholder Coordination**

Development of flood management projects and management actions should occur, to the extent feasible, within the context of development of water management projects and management actions in the overall IRWMP update (see *Task 3.13*). It is anticipated that the Technical Advisory Committee (TAC) to the MWA will serve as a venue for most of the stakeholder participation.

#### **Deliverables:**

- Coordinate with stakeholders on the flood management component during TAC and other stakeholder meetings.
- If needed, conduct meetings with flood management agencies to receive further input and recommendations.

### **Task 3.12: Update Chapter 8, Stakeholder Assessment and Public Outreach**

The purpose of this task is to describe the stakeholder outreach conducted during the IRWMP update. Chapter 8 summarizes stakeholder issues, issues common among stakeholders, key water management issues, coordination with other agencies, methods for public participation, and lists major stakeholder groups. Much of an update to this chapter will consist of a description of the outreach conducted under *Task 1* of the Work Plan.

#### **Deliverable:**

- Update the stakeholder assessment and public outreach information.

### **Task 3.13: Update Chapter 9, Basin Management Objectives and Alternatives**

The purpose of this task is to develop, in coordination with local stakeholders, a diverse portfolio of potential regional water management programs and projects. This is a critical part of the IRWMP update, as it provides a planning foundation for moving forward with new water supply enhancement projects. Due to the fact that many of the high priority projects identified in the 2004 IRWMP have been completed, this section will need a major overhaul, including an evaluation of projects included in the 2004 IRWMP that have not been completed, as well as identification of new projects per input from the stakeholders.

#### **Background**

During development of the 2004 IRWMP, with stakeholder input (primarily the TAC), two overarching Basin Management Objectives (BMOs) were developed:

- Balance future water demands with available supplies
- Maximize the overall beneficial use of water throughout MWA

With the BMO's as a foundation, projects and management alternatives were developed and evaluated, and included within Chapter 9. This component of the 2004 IRWMP provided a framework for prioritization of funding and efforts toward the development of several regional water supply enhancement and conservation projects that were recently completed or are currently being constructed.

This task will rely heavily upon input from the TAC, as was done during the previous IRWMP cycle. The meeting facilitator (*Task 1.5*) will be crucial for the success and productivity of stakeholder input for this task. Development and evaluation of project alternatives should occur in three phases, anticipated at a maximum duration of 6 months each:

- Phase 1: Needs assessment/identify potential Projects & Management Alternatives.
- Phase 2: Evaluate & Prioritize Projects & Management Alternatives
- Phase 3: Incorporate final project priorities into the IRWMP and document the Project & Program evaluation process.

#### **Subtask 3.13.1: Needs Assessment/Identify Potential Projects & Management Actions (Phase 1)**

During the first 6 months of the IRWMP process, the TAC will meet to revisit the BMOs, conduct a needs assessment, and identify/solicit suggested projects and management alternatives from stakeholders. The

facilitator will play a key role in identifying common themes among suggestions and isolating similar needs and related project suggestions. In addition to projects identified by the TAC, the following projects should be included in the list to be evaluated in *Subtask 3.13.1*:

- Resource Management Strategies in the most recent version of the California Water Plan.
- Critical DAC water supply projects identified in *Task 3.7*.
- Integrated Flood Management projects & management actions identified in *Task 3.11*.
- Salt/Nutrient Management Plan Implementation Measures identified in *Task 2.6*.

***Deliverables:***

- Work with the TAC to revise or reaffirm the BMOs. Basin Management Objectives should include consideration of objectives contained in the appropriate Basin Plans (Lahontan and Colorado Water Boards), as required in the IRWMP Act.
- Identify and document specific problems and water management issues that must be addressed in the Update. Prepare a list and assessment of water management needs based upon stakeholder input.
- Work with the TAC to revise or reaffirm performance measures for evaluating potential projects including specific criteria to compare the relative merits of projects and management actions. Evaluation criteria should be based upon relative water supply benefit, contribution toward MWA's and the TAC's objectives, and feasibility including technical, environmental, economic, institutional, social, and legal feasibility. Additionally, the performance measures should consider the greenhouse gas (GHG) emissions of projects as evaluated in *Task 3.9*.
- Conduct an initial review of projects and management alternatives with input from the TAC. Identify and group suggested projects and management alternatives into a comprehensive list for evaluation. Identify basic information for each project (rough capital and O&M cost estimates, project capacity, location, etc.)

***Subtask 3.13.2: Evaluate & Prioritize Water Management Projects & Management Actions (Phase 2)***

This task will consist of grouping and evaluating projects and management alternatives identified in *Subtask 3.13.1*. Utilizing the performance measures established in Phase 1, develop a screening model, or modify and use the existing STELLA screening model used in the 2004 IRWMP update, to evaluate and prioritize projects and management alternatives. Present the screening model to the TAC and MWA's Planning, Resources and Technology (PRT) Committee for review. Run the model to develop alternative combinations of projects and present alternatives and recommendations to the TAC, PRT, and the MWA Board.

***Deliverables:***

- Develop screening model.
- Through a transparent process with the TAC, evaluate projects based upon the performance measures identified in *Subtask 3.13.1*. The evaluation process is anticipated to identify projects as feasible or infeasible, and further group feasible projects into first, second, and third priorities.

***Subtask 3.13.3. Incorporate Final Project Priorities into the IRWMP and Document the Evaluation Process (Phase 3)***

This task is intended to document the process utilized to identify, evaluate, and prioritize projects and management actions. Stakeholder input, BMO's, description of problems and issues identified, performance measures/evaluation criteria, initial project list, screening model, screening model results, and final project priorities should be included in Chapter 9 of the IRWMP. Most of the framework for this information is already included in the existing IRWMP; however it will need to be updated to reflect new information that comes out of the current process.

***Deliverable:***

- Incorporate final project priorities into the IRWMP and document the Project and Program evaluation process

### **Task 3.14: Update Chapter 10, Management Actions**

Chapter 10 of the IRWMP identifies actions to implement the projects and management alternatives identified in Chapter 9. This task should occur concurrently with *Subtask 3.13.3*. Identifying management actions will involve input from the TAC as with *Task 3.13*. It is anticipated that many of the management actions will remain in place, with minor changes where appropriate, because they are currently ongoing (such as monitoring, long-range planning, and water conservation). New management actions should be included, and existing information should be updated as appropriate. This section will also include a financing plan and implementation schedule for projects.

#### ***Deliverables:***

- Work with the TAC and MWA staff to determine appropriate updates or changes to management actions, revise Chapter 10 as needed.
- Update the financing plan
- Update the implementation schedule.

### **Task 3.15: Update Existing Appendices to the IRWMP**

This task is to ensure appendices to the IRWMP are up-to-date and new supplemental information is included as needed. Some of the existing appendices remain unchanged and do not need to be updated. Some will need to be updated with current information. Additionally, the following new appendices will be added, along with any other supplemental information identified during the IRWMP update process:

- California DWR Region Acceptance Process (RAP) Mojave IRWM Region Approval, September 2009
- California Integrated Regional Water Management Planning Act
- Proposition 84 - The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006

#### ***Deliverable:***

- Update/add appendices to the IRWMP, as needed.

### **Task 3.16: Multimedia Executive Summary**

For the purpose of public education after the IRWMP is developed, MWA intends to create a video presentation that gives an overview of the development, objectives, and planned implementation of the IRWMP. The video should be concise, communicate high-level ideas, and visually aesthetic.

#### ***Deliverables:***

- Draft and final IRWMP summary video