VOLUME 2: IRWM PLAN APPENDICES

# 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan

FINAL
DECEMBER 2018

**Plan Prepared by:**
Coachella Valley Regional Water Management Group
In Collaboration with the Planning Partners

City of Coachella

# Appendix VI-A.1: IRWM Plan Standards Review

This appendix includes the Coachella Valley Regional Water Management Group's (CVRWMG's) self-assessment of the IRWM component of the2018 Coachella Valley IRWM/SWR Plan, based on the IRWM Plan Standards Review Form provided by DWR in Volume 2, Section V of the *2016 IRWM Program Guidelines*.

## 1 IRWM Plan Review Process

The IRWM Plan Review Process detailed in the *2016 IRWM Program Guidelines* Volume 2, Section V provides IRWM regions with guidelines on the IRWM Plan assessment process that will be implemented by DWR prior to the first round of Proposition 1 Implementation Grant funding. This guidance document explains when to submit IRWM Plans, what should be submitted, how regions can submit their IRWM Plans to DWR, and DWR's IRWM Plan review efforts.

### 1.1 When to Submit

IRWM Plans should be submitted to DWR for review and confirmation that plans are consistent with the standards put forth by DWR in the *2016 IRWM Program Guidelines*. IRWM Plans must be submitted and pass review to establish eligibility for future Proposition 1 Implementation Grant funding, or if a Region has received past Proposition 84 Implementation grant funding that included an IRWM Plan update as a condition of the grant. IRWM Plans may be submitted for other reasons, and other, future opportunities may require confirmation of an IRWM Plan consistent with DWR Guidelines. RWMGs are encouraged to submit plans for review as early as possible, to allow time for review and resolution of any deficiencies in the plan. Plans must be submitted prior to the Proposition 1 Implementation Grant - Round 1. Note that the review process does not extend the deadline for Plan submittal as part of an existing grant agreement.

### 1.2 What to Submit

IRWM Plans should be submitted in their entirety (including appendices) along with a transmittal letter from the RWMG or Grantee. DWR encourages inclusion of an optional "road map" that provides references to specific pages and plan sections for required plan elements. Details on what must be included in the transmittal letter are provided in Volume 2, Section IV of the *2016 IRWM Program Guidelines*.

## 1.3 How to Submit

Only electronic copies of the IRWM Plan and transmittal letter will be accepted (CD/DVD preferred, email accepted). Details on how to submit the Plan are provided in Volume 2, Section IV of the *2016 IRWM Program Guidelines*.

## 1.4 Plan Review

The Plan Review Process will use the Plan Standards Review Form discussed in Volume 2, Section V of the *2016 IRWM Program Guidelines*. Plans will be reviewed on a Pass/Fail basis, and each standard must be passed by meeting 1 (of 1), 2 (of 2 or 3), 3 (of 4 or 5), or 70% (of more than 5) requirements within each standard. Following DWR review of the Plan, a draft review will be provided to the RWMG, who will have an opportunity to comment. Draft Plan Reviews will be open for a 30-day public comment period, and posted on the 1st and 15th of each month. RWMGs will be allowed to follow-up the comment period with revisions if the Final Review finds the IRWM Plan inconsistent with Plan Standards. Adequate revisions will be accepted without immediate re-adoption of the IRWM Plan, if insufficient, further revisions may be made by the RWMG in subsequent follow-ups to DWR.

## 1.5 Plan Standards Review Tool

The Plan Standards Review Form provided by DWR has been adapted by the CVRWMG for use as Appendix VI-A.1 in the 2018 IRWM/SWR Plan Update. This tool, seen in the table on the following pages, provides the standards included in the 2016 IRWM Program Guidelines, as well as the requirements that make up each standard. The table includes information on requirements (Requirements from *IRWM 2016 Guidelines*), where this requirement is described in the Guidelines (*IRWM 2016 Guidelines* Page Number), where this information is contained in the 2018 IRWM/SWR Plan (Evidence of Sufficiency/Location of Standard in Grantee IRWM Plan), and a description of how this requirement was met (Evidence of Plan Sufficiency/Brief Qualitative Evaluation).

# Appendix VI-A.2: SWRP Checklist and Self-Certification

This appendix includes the Coachella Valley Regional Water Management Group's (CVRWMG's) self-assessment of the SWRP component of the 2018 Coachella Valley IRWM/SWR Plan, based on the Checklist and Self-Certification provided by the SWRCB in Appendix A of the *2015 SWRP Guidelines*.

## 2 SWRP Review Process

In order for a SWRP to be deemed consistent with section 10560 et seq. of the Water Code, SWRPs must address all mandatory elements in the *2015 SWRP Guidelines*, following the guidance provided in Section V through VI of the *2015 SWRP Guidelines*. Appendix A of the Guidelines provides a Checklist and Self-Certification form for agencies to verify that all required elements of the Water Code are being met and that other elements of the SWRCB's SWRP Guidelines are addressed. Entities preparing and submitting a SWRP to the SWRCB must fill out and sign the self-certification checklist. The checklist is used to identify the specific areas of the SWRP or functionally equivalent collection of documents that meet the requirements in the Water Code and SWRCB Guidelines. In cases where multiple documents are being used to create a functional equivalent SWRP, a cover letter explaining how the documents work together to address the SWRP Guidelines is also required. Entities submitting a SWRP will self-certify the SWRP complies with the requirements using the checklist, but the SWRCB must also review the SWRP to confirm the requirements are met.

A SWRP is not a compliance document but is required for any stormwater and dry weather runoff capture projects to receive funding under any bond measure approved by voters after January 2014. The SWRP and signed self-certification checklist must be reviewed by the SWRCB in order to confirm eligibility to receive funding under these grant programs.

**2018 Coachella Valley IRWM/SWR Plan**
**IRWM Plan Standards Review**

| Requirement | | Included | | Evidence of Plan Sufficiency | | Sufficient |
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| **From IRWM 2016 Guidelines** | **IRWM 2016 Guidelines Page Number** | **y/n - Present/Not Present in the IRWM Plan. If y/n/q, qualitative evaluation needed.** | | **Location of Standard in Grantee IRWM Plan** | **Brief Qualitative Evaluation** | **y/n** |
| **IRWM Plan Standard: Governance** | | | | | **Overall Standard Sufficient** | **Yes** |
| The RWMG and individual project proponents who adopted the Plan" | 37 | **y/n** | y | Section 1.3.1 Region Acceptance Process and Formation of the CVRWMG; Section 7.1 Establishment of the IRWM Program and SWR Planning Process, Section 7.2.1 Group Membership and Participation; Section 7.7 IRWM/SWR Plan Adoption | *Chapter 1, Section 1.3.1 and Chapter 7, Section 7.1* discuss adoption of the IRWM Plan by the CVRWMG members as is required by the MOU that formalizes their partnership. *Chapter 7, Section 7.2.1* states that eligible entities (including tribes) may join the CVRWMG and the required process to do so, and describes the requirement that all project proponents that are selected for IRWM grant funding must adopt the IRWM Plan. *Chapter 7, Section 7.7* describes Plan adoption and lists the dates the CVRWMG members adopted the 2018 IRWM/SWR Plan | y |
| A description of the IRWM governance structure including a discussion of whether or how Native American tribes will participate in the RWMG. | 37 | **y/n** | y | Section 7.2 Structure and Organization; Section 7.6 Tribal Outreach and Coordination | *Section 7.2* describes the governance structure of the Region including the CVRWMG, Planning Partners, Issues Groups, and stakeholders. The Native American Tribes Issues Group allows for input from tribal communities and is convened when the tribes deem necessary. The tribal communities are also part of the Planning Partners and are encouraged by the CVRWMG to participate in Planning Partners meetings. *Section 7.6* describes tribal outreach and coordination that occurred for plan development. | y |
| A description of how the chosen form of governance addresses and insures: | | | | | | |
| Public outreach and involvement processes | 37 | **y/n/q** | y | Section 7.2.1 Group Membership and Participation | As described in *Section 7.2.1*, the CVRWMG has conducted outreach to increase public involvement. All stakeholders are invited to participate in Issues Groups, Planning Partners meeting, and public workshops. | y |

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| Effective decision making | 37 | **y/n/q** | y | Section 7.2 Structure and Organization; Section 7.3 Effective Decision-Making | *Chapter 7, Stakeholder Involvement, Section 7.2* describes the governance structure and how each group within this structure provides feedback and input to the CVRWMG, who ultimately make all final decisions. The decision making process is further described in *Section 7.3*. | y |
| Balanced access and opportunity for participation in the IRWM process | 37 | **y/n/q** | y | Section 7.4 Balanced Access and Opportunity for Participation; Section 7.2.1 Group Membership and Participation; Section 7.5 Disadvantaged Communities Outreach; Section 7.6 Tribal Outreach and Coordination | The governance structure as described in *Chapter 7, Stakeholder Involvement* invites all stakeholders to participate on an equal level to provide input to the CVRWMG. Outreach activities have been undertaken by the CVRWMG to ensure participation of typically underrepresented groups such as DACs and tribes. *Section 7.4* describes how this structure allows for balanced access and opportunities for participation, while *Sections 7.2.1, 7.5, and 7.6* detail how these efforts have been implemented, with an emphasis on traditionally underrepresented groups. | y |
| Effective communication – both internal and external to the IRWM region | 37 | **y/n/q** | y | Section 7.4.2 Effective Communication – Both Internal and External to Region | *Chapter 7, Stakeholder Involvement, Section 7.4.2* describes communication efforts within the Region. Such communication occurs through meetings, email, website announcements, and workshops, and notifications of opportunities to communicate with the CVRWMG are provided to all stakeholders, neighboring RWMGs, and relevant government agencies. | y |
| Long term implementation of the IRWM Plan | 37 | **y/n/q** | y | Section 7.8 Long-Term Implementation of IRWM Plan | *Chapter 7, Section 7.8 Long-Term Implementation of IRWM/SWR Plan* describes the foundation for long-term implementation of the Plan. The MOU between CVRWMG agencies acknowledges and allows for continued and ongoing coordination efforts (see Appendix VI-C). IRWM Program efforts that contribute to long-term implementation include IRWM grant funding for projects and planning, DAC Outreach Program, and other planning efforts and programs. | y |

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| Coordination with neighboring IRWM efforts and State and federal agencies | 37 | **y/n/q** | y | Section 7.4.2 Effective Communication – Both Internal and External to Region;<br>Section 10.1.2 Neighboring and/or Overlapping IRWM Efforts;<br>Section 10.1.3 Coordination with Tribal, Federal, State, and Local Agencies | *Chapter 7, Section 7.4.2 Effective Communication – Both Internal and External to Region* describes how communication with neighboring RWMGs and Government Agencies provide opportunities to consider common issues and to coordinate on activities. *Chapter 10, Agency Coordination, Section 10.1.2 and Section 10.1.3* describe coordination efforts with organizations and agencies outside the Region. Neighboring RWMGs are distinct from the CVRWMG and the Region, so communication remains open but there is no active coordination (*Section 7.4.1; 10.1.2*). State, federal, and local agencies are invited to participate in the Region, and outreach has and will be conducted to key agencies (*Section 10.1.3*). | y |
| The collaborative process(es) used to establish plan objectives | 38 | **y/n/q** | y | Section 6.1.1 Determining Objectives | The Plan objectives process is described in *Chapter 6, Section 6.1.1. Issues groups* developed the list of issues that led to the identified objectives. Public workshops and meetings were held for broader stakeholder input, and Planning Partners verified the final list of Objectives. | y |
| How interim changes and formal changes to the IRWM Plan will be performed | 38 | **y/n/q** | y | Section 7.8.1 Updating or Amending the IRWM Plan | Changes to the plan can be made following the guidance in *Chapter 7, Section 7.8.1 Updating or Amending the IRWM Plan*. Changes may require Planning Partners, Issues Groups, or stakeholder consensus (depending on type of change) and final approval by the CVRWMG. | y |
| Updating or amending the IRWM Plan | 38 | **y/n/q** | y | Section 7.8.1 Updating or Amending the IRWM Plan | Changes to the plan can be made following the guidance in *Chapter 7, Stakeholder Involvement, Section 7.8.1*. Changes may require Planning Partners, Issues Groups, or stakeholder consensus (depending on type of change) and final approval by the CVRWMG. | y |
| **IRWM Plan Standard: Region Description** | | | | | **Overall Standard Sufficient** | **Yes** |
| If applicable, describe and explain how the plan will help reduce dependence on the Delta supply regionally. | 38 | **y/n** | y | Section 6.1.1 Determining Objectives:<br>• Objective A<br>• Objective C<br>• Objective D<br>• Objective I | Objectives A, C, D, and I described in *Chapter 6, Objectives, Section 6.1.1* will each contribute to potentially reducing future additional demand for imported water from the SWP through local solutions to increase reliability, securing reliable non-SWP imported supplies or water transfers that potentially reduce future additional dependence on Delta supplies, increasing local supply opportunities, and improving efficiency through conjunctive use. | y |

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| Describe watersheds and water systems | 38 | **y/n** | y | Section 2.2 Watershed and Water Systems | Watersheds and water systems are described in detail in *Chapter 2, Region Description, Section 2.2*. The Whitewater River Watershed is described in *Section 2.2.1* and water systems are described in *Sections 2.2* through *2.8*. | y |
| Describe internal boundaries | 38 | **y/n** | y | Section 2.3 Internal Boundaries | Internal boundaries are described in *Chapter 2, Region Description, Section 2.3*, as well as shown in **Figures 1-2**, **2-3**, **2-5**, **2-6**, **2-8**, and **2-10**. | y |
| Describe water supplies and demands for minimum 20 year planning horizon | 38 | **y/n** | y | Section 2.4 Water Supply and Demands | Agency water supplies and demands are based on projections from CVRWMG agencies' 2015 UWMPs and project 20 years from those plans (until 2035). Projected supplies and demands are presented in *Chapter 2, Region Description, Section 2.4* and summarized in **Tables 2-8**, **2-9**, **2-10**, **2-11**, **2-12**, **2-13**, **2-14**, and **2-15**. | y |
| Describe social and cultural makeup, including specific information on DACs and tribal communities in the region and their water challenges. | 38 | **y/n/q** | y | Section 2.6 Social and Cultural Make-up; Chapter 4, Disadvantaged Communities; Chapter 5, Tribal Water Resources | *Chapter 2, Region Description, Section 2.6* describes the social and cultural make-up of the Region. Population and demographics data, as well as economic information are provided. Detailed information related to DACs and tribal communities is provided in *Chapters 4* and *5*, respectively. More information on DACs is provided in **Volume II** of the IRWM/SWR Plan. | y |
| Describe major water related objectives and conflicts **(1)**. | 38 | **y/n/q** | y | Section 2.7 Major Water-Related Conflicts; Section 6.1.1 Determining Objectives; Section 11.1.3, Benefits and Impacts of Plan Implementation | An overview of major water-related conflicts is presented in *Chapter 2, Region Description, Section 2.7*, while objectives are located in *Chapter 6, Objectives, Section 6.1.1*. Challenges to Plan implementation are described in *Chapter 11, Section 11.1.3*. | y |
| Explain how IRWM regional boundary was determined and why region is an appropriate area for IRWM planning. | 38 | **y/n/q** | y | Section 2.1 Selection of Regional Boundary; Section 10.1.2 Neighboring and/or Overlapping IRWM Efforts | The Coachella Valley IRWM Region's boundaries are described in *Chapter 2, Region Description, Section 2.1*. This section also presents an overview of the logic of the selected boundary. *Chapter 10, Agency Coordination, Section 10.1.2* provides more detail on the justification used to set the Region's boundary. | y |
| Describe neighboring and/or overlapping IRWM efforts | 38 | **y/n** | y | Section 10.1.2 Neighboring and/or Overlapping IRWM Efforts | *Chapter 10, Agency Coordination, Section 10.1.2* describes neighboring IRWM efforts: Anza-Borrego Desert, Imperial Valley, Mojave, and San Gorgonio IRWM Regions, and the Santa Ana Funding Area IRWM efforts. | y |

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| Explain how opportunities are maximized (e.g. people at the table, natural features, infrastructure)for integration of water management activities | 38 | **y/n** | y | Section 9.2.2 Project Review and Prioritization Process; Section 8.1 IRWM Integration Approach | *Chapter 9, Project Evaluation and Prioritization, Section 9.2.2* notes that the CVRWMG will assess opportunities for integration during the project review process. *Chapter 8, Resource Management Strategies, Section 8.1* describes integration between stakeholders/institutions, resources, projects, and strategies. | y |
| Describe water quality conditions. If the IRWM region has areas of nitrate, arsenic, perchlorate, or hexavalent chromium contamination, the Plan must include a description of location, extent, and impacts of the contamination; actions undertaken to address the contamination, and a description of any additional actions needed to address the contamination **(2)**. | 38 | **y/n** | y | Section 2.5 Water Quality; Section 3.1.5 Water Quality; Section 4.3.5 DAC Water Quality Evaluation; Section 8.4.4 Improve Water Quality; Section 9.1 IRWM Regional Priorities | *Chapter 2, Region Description, Section 2.5* provides a description of water quality for all water resources in the Region, including arsenic and hexavalent chromium contamination.<br>*Chapter 3, Issues and Needs, Section 3.1.5* further discusses the issues caused by water quality contaminants, contaminant concentrations, and location and extent of contamination. *Chapter 4, Disadvantaged Communities, Section 4.3.5* discusses these issues in the context of DACs in the Region.<br>*Section 8.4.4* describes management strategies to address water quality issues in the Region and provides specific examples of efforts in the Region that address water quality issues.<br>*Section 9.1* describes the Region's priorities related to improving water quality | y |
| Describe likely Climate Change impacts on their region as determined from the vulnerability assessment. | 38 | **y/n** | y | Section 2.8 Climate Change; Section 3.2 Climate Change Issues and Needs; Section 3.2.3 Vulnerability Analysis; Section 8.4 Overview of Resources Management Strategies; Section 8.5 Adapting Resource Management Strategies to Climate Change | *Chapter 2, Section 2.8 Climate Change* describes climate change impacts on the Region.<br>*Chapter 3, Section 3.2 Climate Change Issues and Needs* and *Section 3.2.3 Vulnerability Analysis* provide discussions of climate change issues and needs, impacts and effects, and the vulnerability assessment.<br>*Chapter 8, Resource Management Strategies, Section 8.4* and *Section 8.5* outline the resource management strategies considered for the Region in the context of climate change. | y |
| **IRWM Plan Standard: Plan Objectives** | | | | | **Overall Standard Sufficient** | **Yes** |
| Through the objectives or other areas of the plan, the 7 items on pg 49 of GL are addressed **(1)**. | 49 | **y/n** | y | Section 6.1.1 | Objectives are described in detail in *Chapter 6, Objectives, Section 6.1.1*. The objectives listed here under the "Location of Standard in Grantee IRWMP" column clearly address, either directly or indirectly, the listed requirements. | y |

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| 1. Protection and improvement of water supply reliability | 49 | **y/n** | y | Section 6.1.1<br>Objective A<br>Objective B<br>Objective C<br>Objective D<br>Objective E<br>Objective I | | y |
| 2. Identification and consideration of drinking water quality | 49 | **y/n** | y | Section 6.1.1<br>Objective B<br>Objective E<br>Objective K<br>Objective L | | y |
| 3. Protection and improvement of water quality consistent with basin plan | 49 | **y/n** | y | Section 6.1.1 All objectives | | y |
| 4. Protection, restoration, improvement of aquatic, riparian, and watershed resources | 49 | **y/n** | y | Section 6.1.1 Objective E<br>Objective F<br>Objective G | | y |
| 5. Identification of threats to groundwater from overdraft | 49 | **y/n** | y | Section 6.1.1 Objective B | | y |
| 6. Protection of groundwater resources from contamination | 49 | **y/n** | y | Section 6.1.1 Objective B<br>Objective E<br>Objective K<br>Objective L | | y |
| 7. Identification and consideration of water-related needs of DACs | 49 | **y/n** | y | Section 6.1.1 Objective L<br>Objective M | | y |

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| Describe the collaborative process and tools used to establish objectives:<br>- How the objectives were developed<br>- What information was considered (i.e., water management or local land use plans, etc.)<br>- What groups were involved in the process<br>- How the final decision was made and accepted by the IRWM effort | 48 - 50 | **y/n** | y | Section 6.1.2 Describing the Process | *Chapter 6, Objectives, Section 6.1.2* describes how the objectives were identified and developed, what was used in the process, how stakeholders were involved in development of the objective, and how the final list of objectives was chosen consistent with the IRWM Program's governance structure and decision-making process. | y |
| Identify quantitative or qualitative metrics and measurable objectives: Objectives must be measurable - there must be some metric the IRWM region can use to determine if the objective is being met as the IRWM Plan is implemented. Neither quantitative nor qualitative metrics are considered inherently better **(2)**. | 49 | **y/n/q** | y | Section 6.1.3 Goals, Objectives, and the Planning Hierarchy | **Table 6-1** in *Chapter 6, Objectives, Section 6.1.3* provides both qualitative and quantitative targets and measurements for each objective and their associated goals. These targets and measurements can be used to assess progress towards achieving the Plan goals and objectives. | y |
| Explain how objectives are prioritized or reason why the objectives are not prioritized | 50 | **y/n/q** | y | Section 6.2 Prioritizing Objectives | The Plan objectives have been prioritized by the CVRWMG and stakeholders. *Chapter 6, Objectives, Section 6.2* describes the prioritization of the objectives with stakeholder involvement and through the governance structures described in *Chapter 7, Stakeholder Involvement*. | y |

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| Reference specific overall goals for the region: RWMGs may choose to use goals as an additional layer for organizing and prioritizing objectives, or they may choose to not use the term at all. | 50 | **y/n** | y | Section 6.1 Goals and Objectives | *Chapter 6, Objectives, Section 6.1* presents the five goals of the IRWM Plan:<br>1. Optimize water supply reliability<br>2. Protect or improve water quality<br>3. Provide stewardship of water-related natural resources<br>4. Coordinate and integrate water resource management<br>5. Ensure cultural, social, and economic sustainability of water in the Coachella Valley | y |
| Address adapting to changes in the amount, intensity, timing, quality and variability of runoff and recharge. | 39 | **y/n** | y | Section 2.8 Climate Change | *Chapter 2, Section 2.8 Climate Change* discusses the implications of climate change on the Region including changes in precipitation and runoff patterns. | y |
| Consider the effects of sea level rise (SLR) on water supply conditions and identify suitable adaptation measures. | 39 | **y/n** | y | Section 3.2.2 Identification of Climate Change Vulnerabilities | As shown in Chapter 3, *Section 3.2.2 Identification of Climate Change Vulnerabilities* **Table 3-4**, sea level rise is not applicable to the Coachella Valley IRWM Region. | y |
| Reducing energy consumption, especially the energy embedded in water use, and ultimately reducing GHG emissions. | 39 | **y/n** | y | Section 6.1.1 Goals and Objectives; Section 8.5, Adapting Resource Management Strategies to Climate Change | *Chapter 6, Section 6.1.1 Goals and Objectives describes the Plan objectives, including how achieving the objectives would contribute to reducing energy consumption and GHGs.*<br>*Chapter 8, Section 8.5* and **Table 8-3** distinguish which management strategies help to adapt to climate change and help to mitigate GHG emissions. | y |
| In evaluating different ways to meet IRWM plan objectives, where practical, consider the strategies adopted by CARB in its AB 32 Scoping Plan1. | 39 | **y/n** | y | Section 6.1 Goals and Objectives | *Chapter 6, Section 6.1 Goals and Objectives* and **Table 6-1** address climate change requirements and CARB goals. | y |
| Consider options for carbon sequestration and using renewable energy where such options are integrally tied to supporting IRWM Plan objectives. | 39 | **y/n** | y | Section 6.1.1 Determining Objectives, Section 8.5, Table 8-3 | *Chapter 6, Section 6.1.1, Determining Objectives (Objective D)* states that local supply opportunities that utilize renewable energy will be prioritized.<br>Chapter 8, *Section 8.5 Adapting Resource Management Strategies to Climate Change,* **Table 8-3** lists increase use of renewable energy sources as a climate change management strategy. | y |

| **IRWM Plan Standard: Resource Management Strategies (RMS)** | | | | | **Overall Standard Sufficient** | **Yes** |
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| Address which RMS will be implemented in achieving IRWM Plan Objectives **(1)**. | 39 | **y/n** | y | Section 8.2.2 Objectives Assessment | *Chapter 8, Resource Management Strategies, Section 8.2.2* describes how each RMS will contribute to each Plan objective (**Table 8-2**: Resource Management Strategies that Achieve IRWM Plan Objectives). | y |
| Identify RMS incorporated in the IRWM Plan:<br>Consider all California Water Plan (CWP)RMS criteria (29) listed in Table 3 from the CWP Update 2013 | 39 | **y/n** | y | Section 8.2 Resource Management Strategies; Section 8.4 Overview of Resource Management Strategies | *Chapter 8, Resource Management Strategies, Section 8.2* describes the RMS considered when developing the 2018 Plan. **Table 8-1** presents all 29 RMS from the 2013 CWP Update, and indicates which ones were ultimately included and considered relevant. *Section 8.4* describes each RMS in detail. | y |
| Consideration of climate change effects on the IRWM region must be factored into RMS. Identify and implement, using vulnerability assessments and tools such as those provided in the Climate Change Handbook, RMS and adaptation strategies that address region-specific climate change impacts.<br>-Demonstrate how the effects of climate change on its region are factored into its RMS.<br>-Reducing energy consumption, especially the energy embedded in water use, and ultimately reducing GHG emissions.<br>-An evaluation of RMS and other adaptation strategies and ability of such strategies to eliminate or | 39 | **y/n** | y | Section 8.4 Overview of Resource Management Strategies;<br>Section 8.5 Adapting Resource Management Strategies to Climate Change | *Chapter 8, Resource Management Strategies, Section 8.5* details which RMS will contribute to climate change adaptation and how, summarized in **Table 8-3**. Individual RMS descriptions (*Section 8.4 Overview of Resource Management Strategies*) indicate the relationship between the RMS and the potential impacts of climate change in the Region. | y |

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| minimize those vulnerabilities, especially those impacting water infrastructure systems **(2)**. | | | | | | |
| **IRWM Plan Standard: Integration** | | | | | **Overall Standard Sufficient** | **Yes** |
| Contains structure and processes for developing and fostering integration[1]:<br>- Stakeholder/institutional<br>- Resource<br>- Project implementation<br><br>*1. If not included as an individual section use Governance, Project Review Process, and Data Management Standards per 2016 IRWM Guidelines, p. 52.* | 39 | **y/n/q** | y | Section 9.2.2 Project Review and Prioritization Process;<br>Section 8.1 IRWM Integration Approach | As described in *Chapter 9, Project Evaluation and Prioritization, Section 9.2.2*, during the project review process, the CVRWMG identifies opportunities for integration and informs project proponents of such opportunities to maximize resources. *Chapter 8, Resource Management Strategies, Section 8.1* describes integration between stakeholders/institutions, resources, projects, and strategies. | y |
| **IRWM Plan Standard: Project Review Process** | | | | | **Overall Standard Sufficient** | **Yes** |
| Process for projects included in IRWM plan must address 3 components:<br>- procedures for submitting projects<br>- procedures for reviewing projects<br>- procedures for communicating lists of selected projects | 39 - 40 | **y/n** | y | | See below. | y |
| procedures for submitting projects | 39 - 40 | | y | Section 9.2.1 Project Submittal Process | *Chapter 9, Project Evaluation and Prioritization, Section 9.2.1* describes how project proponents can submit projects via the online project database to be considered for inclusion in the IRWM Plan and/or IRWM grant opportunities | y |

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| procedures for reviewing projects | 39 - 40 | | y | Section 9.2.2 Project Review and Prioritization Process | *Chapter 9, Project Evaluation and Prioritization, Section 9.2.2* describes how projects that have been submitted to the online project database are evaluated and prioritized for inclusion in the IRWM Plan and/or for funding opportunities. **Table 9-3** is the project scoring guide used when evaluating projects. | y |
| procedures for communicating lists of selected projects | 39 - 40 | | y | Section 9.3 List of Selected Projects | *Chapter 9, Project Evaluation and Prioritization, Section 9.3* states that the current project list is available through the online project database, and that stakeholders will be notified of projects selected for inclusion in IRWM grant applications via email and at a Planning Partners meeting. | y |
| Does the project review process in the plan incorporate the following factors: | | | y | Section 9.2.3 Project Selection Factors | *Chapter 9, Project Evaluation and Prioritization, Section 9.2* describes the Project Selection Process, while *Section 9.2.3* details the Project Selection Factors. Each of these project review standards are included either directly or indirectly in **Table 9-2** (Project Prioritization Criteria and Relationship to IRWM Goals and Objectives) and **Table 9-3** (Project Scoring Guide) | y |
| How a project contributes to plan objectives | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Contribution to IRWM Plan Objectives | | y |
| How a project is related to Resource Management Strategies identified in the plan. | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Relationship to RMS | | y |
| The technical feasibility of a project. | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Technical Feasibility | | y |
| A projects specific benefits to a DAC water issue. | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Critical Issues in DACs | | y |
| Environmental Justice considerations. | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Environmental Justice Considerations | | y |
| Project costs and financing | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Project Costs and Financing | | y |

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| Address economic feasibility | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Economic Feasibility | | y |
| Project status | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Project Status | | y |
| Strategic implementation of plan and project merit | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Strategic Considerations | | y |
| Status of the Project Proponent's IRWM plan adoption | 40 | **y/n** | y | Section 7.2.1 Group Membership and Participation | Chapter 7, Stakeholder Involvement, Section 7.2.1 details the requirement that organizations whose projects have been included in an IRWM grant application are required to adopt the current IRWM Plan. | y |
| Project's contribution to reducing dependence on Delta supply (for IRWM regions receiving water from the Delta). | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors; Section 6.1.1 Determining Objectives | *Chapter 9, Project Evaluation and Prioritization, Section 9.2.3* explains the project selection factors, including contribution to IRWM Plan Objectives. As noted in *Chapter 6, Objectives, Section 6.1.1*, four of the objectives (A, C, D, and I) have the potential to reduce future additional imported water demands, including Delta supplies. | y |
| Project's contribution to climate change adaptation.<br>-Include potential effects of Climate Change on the region and consider if adaptations to the water management system are necessary **(1)**.<br>-Consider the contribution of the project to adapting to identified system vulnerabilities to climate change effects on the region.<br>-Consider changes in the amount, intensity, timing, quality and variability of runoff and recharge.<br>-Consider the effects of | 40 | **y/n** | y | Section 3.2.2 Identification of Climate Change Vulnerabilities; Section 8.5 Adapting Resource Management Strategies to Climate Change; Section 9.2.3 Project Selection Factors: Climate Change Adaptation; Section 9.2.3 Project Selection Factors: Climate Change Mitigation | *Chapter 8, Section 8.5 Adapting Resource Management Strategies to Climate Change* describes the potential impacts of climate change and presents how the RMS contribute to climate change mitigation and adaptation strategies.<br>*Chapter 9, Section 9.2.3 IRWM Project Selection Factors* explains the project selection factors, including consideration of the contribution of projects to climate change vulnerabilities adaptation. Also, in *Section 9.2.3*, subsection *Climate Change Adaptation* expands on how climate change concerns are acknowledged and incorporated into long-term planning related to water supply, water quality, and flood management in the Coachella Valley.<br>As shown in *Section 3.2.2 Identification of Climate Change Vulnerabilities* **Table 3-4**, sea level rise is not applicable to the Coachella Valley IRWM Region. | y |

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| SLR on water supply conditions and identify suitable adaptation measures. | | | | | | |
| Contribution of project in reducing GHGs compared to project alternatives.<br>-Consider the contribution of the project in reducing GHG emissions as compared to project alternatives<br>-Consider a project's ability to help the IRWM region reduce GHG emissions as new projects are implemented over the 20-year planning horizon.<br>-Reducing energy consumption, especially the energy embedded in water use, and ultimately reducing GHG emissions. | 40 | **y/n** | y | Section 9.2.3 Project Selection Factors: Climate Change Adaptation; Section 9.2.3 Project Selection Factors: Climate Change Mitigation | *Chapter 9, Project Evaluation and Prioritization, Section 9.2.3* explains the project selection factors, including consideration of the contribution of projects climate change vulnerabilities adaptation and mitigation of GHGs. Specifically, subsection *Climate Change Mitigation* describes how consideration is given to projects in the project selection process that incorporate GHG emissions reductions strategies. | y |
| Specific benefits to critical water issues for Native American tribal communities. | 53 | **y/n** | y | Section 9.2.3 Project Selection Factors: Critical Issues on Tribal Lands | *Chapter 9, Project Evaluation and Prioritization, Section 9.2.3* describes the project selection factors, including consideration of critical water issues for Native American tribes in the Region. | y |
| **IRWM Plan Standard: Impact and Benefit** | | | | | **Overall Standard Sufficient** | **Yes** |
| Discuss potential impacts and benefits of plan implementation within IRWM region, between regions, with DAC/EJ concerns and Native American Tribal communities | 40 | **y/n** | y | Section 11.1 Impacts and Benefits | Potential impacts of project implementation are discussed in *Chapter 11, Framework for Implementation, Section 11.1.2* and summarized in **Table 11-2**. Potential benefits of project implementation are described in *Section 11.1.1* and summarized in **Table 11-1**. Impacts and Benefits of Plan implementation are described in *Section 11.1.3*. Potential impacts and benefits affecting DACs/EJs and tribes are described in each section. | y |

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| State when a more detailed project-specific impact and benefit analysis will occur (prior to any implementation activity) | 55 | **y/n** | y | Section 11.1.1 Overview of Benefits;<br>11.1.2 Overview of Impacts | Potential benefits may be evaluated in greater detail if required in future IRWM grant applications, as described in *Chapter 11, Framework for Implementation, Section 11.1.1*. Potential impacts will be evaluated in greater detail if CEQA and/or NEPA compliance is required, as described in *Section 11.1.2*. | y |
| Review and update the impacts and benefits section of the plan as part of the normal plan management activities | 55 - 56 | **y/n** | y | Section 11.1 Impacts and Benefits | *Chapter 11, Framework for Implementation, Section 11.1* states that impacts and benefits will be reevaluated during Plan updates. | y |
| **IRWM Plan Standard: Plan Performance and Monitoring** | | | | | **Overall Standard Sufficient** | **Yes** |
| Contain performance measures and monitoring methods to ensure that IRWM objectives are met **(1)**. | 40 | **y/n** | y | 6.1.3 Goals, Objectives, and the Planning Hierarchy | **Table 6-1** in *Chapter 6, Objectives, Section 6.1.3* presents the targets and measures that will be used to evaluate progress towards achieving Plan objectives. | y |
| Contain a methodology that the RWMG will use to oversee and evaluate implementation of projects. | 40 | **y/n** | y | 11.4 Plan Performance and Monitoring | As described in *Chapter 11, Framework for Implementation, Section 11.4*, Plan performance will be evaluated by how well its goals and objectives are been addressed (see **Table 6-1**), as well as its progress towards priorities in *Chapter 9, Project Evaluation and Prioritization*. Projects will be evaluated based on project specific monitoring plans. | y |
| Each project in the IRWM Plan is monitored to comply with all applicable rules, laws, and permit requirements. | 58 | **y/n** | y | 11.4.2 Project-Specific Monitoring Plans | As stated in *Section 11.4.2, Project-Specific Monitoring Plans*, all projects shall be monitored to comply with applicable regulations, laws, and permit requirements such as statutory requirements of the CEQA, which mandates an assessment of project-level impacts. | y |
| Contain policies and procedures that promote adaptive management and, as more effects of Climate Change manifest, new tools are developed, and new information becomes available, adjust IRWM plans accordingly. | 40 | **y/n** | y | 11.4.1 Plan Performance | *Section 11.4.1, Plan Performance*, describes that the CVRWMG may further develop the thresholds of success for the performance parameters as part of an adaptive management process. | y |

| **IRWM Plan Standard: Data Management** | | | | | **Overall Standard Sufficient** | **Yes** |
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| Describe data needs within the IRWM region | 59 - 60 | **y/n** | y | 11.3.1 Overview of Data Needs | *Chapter 11, Framework for Implementation, Section 11.3.1* describes the types of data that have been used to develop the 2014 IRWM Plan, as well as data gaps. | y |
| Describe typical data collection techniques | 59 - 60 | **y/n** | y | 11.3.2 Data Collection Techniques | As described in *Chapter 11, Framework for Implementation, Section 11.3.2*, all data collected for use in the plans and studies are presumed to be collected in a defensible manner consistent with typical or standard collection techniques. | y |
| Describe stakeholder contributions of data to a data management system | 59 - 60 | **y/n** | y | 11.3.3 Stakeholder Contributions | *Chapter 11, Framework for Implementation, Section 11.3.3* describes how stakeholders contributed data to the IRWM Program through outreach efforts, participation in public workshops and Planning Partners meetings, and the DAC Outreach Program's survey. | y |
| Describe the entity responsible for maintaining data in the data management system | 59 - 60 | **y/n** | y | 11.3.4 Responsible Entity | *Chapter 11, Framework for Implementation, Section 11.3.4* explains that the CVRWMG is responsible for the Region's data management system (DMS) and has a designated person in charge of maintaining the program library, though all agencies are responsible for uploading data to the CVRWMG file sharing site. | y |
| Describe the QA/QC measures for data | 59 - 60 | **y/n** | y | 11.3.5 Quality Assurance/Quality Control (QA/QC) Measures | *Chapter 11, Framework for Implementation, Section 11.3.5* states that the CVRWMG will vet data collected for regional planning that is unregulated by State or federal agencies but will not conduct additional QA/QC for data required by State or federal agencies. | y |
| Explain how data collected will be transferred or shared between members of the RWMG and other interested parties throughout the IRWM region, including local, State, and federal agencies **(1)**. | 59 - 60 | **y/n** | y | 11.3.6 Regional Data Sharing; 11.3.7 Statewide Data Sharing | *Chapter 11, Framework for Implementation, Section 11.3.6* and *Section 11.3.7* explain that data is shared regionally through a file sharing website amongst CVRWMG agencies, and with stakeholders through the online Library, available at www.cvrwmg.org. Data submitted to statewide databases are available to the public via those databases. | y |
| Explain how the Data Management System supports the RWMG's | 59 - 60 | **y/n** | y | 11.3.6 Regional Data Sharing | *Chapter 11, Framework for Implementation, Section 11.3.6* explains that the CVRWMG has used a file sharing site to share data during IRWM planning activities, and that | y |

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| efforts to share collected data | | | | | stakeholders may also access data through the online data library available on www.cvrwmg.org. | |
| Outline how data saved in the data management system will be distributed and remain compatible with State databases including CEDEN, Water Data Library (WDL), CASGEM, California Environmental Information Catalog (CEIC), and the California Environmental Resources Evaluation System (CERES). | 59 - 60 | **y/n** | y | 11.3.7 Statewide Data Sharing | *Chapter 11, Framework for Implementation, Section 11.3.7* describes the statewide databases to which IRWM projects may be required to submit applicable data, and states that it is presumed such data will be compatible with the appropriate state systems, as required. | y |
| **IRWM Plan Standard: Finance** | | | | | **Overall Standard Sufficient** | **Yes** |
| Include a programmatic level (i.e. general) plan for implementation and financing of identified projects and programs **(1)** including the following: | 41 | **y/n** | y | See below. | This requirement is met by meeting the other requirements in this Standard. | y |
| List known, as well as, possible funding sources, programs, and grant opportunities for the development and ongoing funding of the IRWM Plan. | 41 | **y/n** | y | 11.5.1 Sources and Certainty of Funding | **Table 11-4** in *Chapter 11, Framework for Implementation, Section 11.5.1* summarizes the potential funding sources available for IRWM program activities that are currently known by the CVRWMG. These funding sources are also described in *Section 11.5.1, Sources and Certainty of Funding: Funding Sources*. | y |
| List the funding mechanisms, including water enterprise funds, rate structures, and private financing options, for projects that implement the IRWM Plan. | 41 | **y/n** | y | 11.5.1 Sources and Certainty of Funding | **Table 11-4** in *Chapter 11, Framework for Implementation, Section 11.5.1* summarizes the potential funding mechanisms available for IRWM projects that are currently known by the CVRWMG. These funding mechanisms are also described in *Section 11.5.1, Sources and Certainty of Funding: Funding Sources*. | y |

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| An explanation of the certainty and longevity of known or potential funding for the IRWM Plan and projects that implement the Plan. | 41 | **y/n** | y | 11.5.1 Sources and Certainty of Funding | **Table 11-4** in *Chapter 11, Framework for Implementation, Section 11.5.1* summarizes the certainty and longevity of potential funding sources available for IRWM projects and program activities that are currently known by the CVRWMG. The certainty and longevity of these funding sources are also described in *Section 11.5.1, Sources and Certainty of Funding: Funding Sources*. | y |
| An explanation of how operation and maintenance (O&M) costs for projects that implement the IRWM Plan would be covered and the certainty of operation and maintenance funding. | 41 | **y/n** | y | 11.5.1 Sources and Certainty of Funding | **Table 11-4** in *Chapter 11, Framework for Implementation, Section 11.5.1* notes which potential funding sources may allow funding for O&M. This is also noted in the funding source descriptions in *Section 11.5.1, Sources and Certainty of Funding: Funding Sources*. **Appendix VII-C** and **Appendix VII-H** include potential for individual user fees to cover the costs of O&M for on-site water treatment systems and new or retrofitted septic systems, respectively. | y |
| **IRWM Plan Standard: Technical Analysis** | | | | | **Overall Standard Sufficient** | **Yes** |
| Document the data and technical analyses that were used in the development of the plan **(1)**. | 41 | **y/n** | y | Section 3.6 Technical Analysis; Appendix VI-B Data and Technical Sources, Analysis, and Use in 2018 IRWM/SWR Plan; Chapter 12 References | *Chapter 3, Issues and Need, Section 3.6* describes how the technical information was used in the development of the Plan. The technical analyses and data used are listed in *Chapter 12, References*, and throughout the Plan in appropriate chapters where referenced. **Appendix VI-B** contains a detailed description of the data and technical analysis used in the development of the IRWM Plan. | y |
| **IRWM Plan Standard: Relation to Local Water Planning** | | | | | **Overall Standard Sufficient** | **Yes** |
| Identify a list of local water plans used in the IRWM plan | 41 | **y/n** | y | 10.2 Relation to Local Water Planning | *Chapter 10, Agency Coordination, Section 10.2* describes the major water plans used to develop the 2018 IRWM/SWR Plan: CVRWMG agency UWMPs, Coachella Valley WMP, Mission Creek – Garnet Hill WMP, IWA's Water Resources Development Plan, the Whitewater River Watershed Municipal Stormwater Program Stormwater Management Plan, and the Coachella Valley Basin GSPs - Alternative GSP Bridge Documents for the Indio and Mission Creek Subbasins. | y |

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| Describe the dynamics between the IRWM plan and other planning documents | 41 | **y/n** | y | 10.2 Relation to Local Water Planning | The description of plans used to develop the IRWM Plan in *Chapter 10, Agency Coordination, Section 10.2* explains the dynamics between the IRWM Plan and these other planning documents | y |
| Describe how the RWMG will coordinate its water mgmt planning activities | 41 | **y/n** | y | 10.2 Relation to Local Water Planning | *Chapter 10, Agency Coordination, Section 10.2* describes how the CVRWMG agencies coordinate with one another through Joint Board meetings, CVRWMG business meetings, and other specialized efforts. | y |
| Discuss how the plan relates to these other planning documents and programs. Same as 2012 GL with the following addition: "It should be noted that Water Code § 10562 (b)(7) requires the development of a stormwater resource plan and compliance with these provisions to receive grants for stormwater and dry weather runoff capture projects. Upon development of the stormwater resource plan, the RWMG shall incorporate it into IRWM plan. The IRWM Plan should discuss the processes that it will use to incorporate such plans." Minor wording differences - e.g. Groundwater Sustainability Plan example in the 2016 Guidelines instead of Groundwater Management Plan in the 2012 Guidelines. | 63 - 64 | **y/n** | y | 10.2 Relation to Local Water Planning | The description of plans used to develop the 2018 IRWM/SWR Plan in *Chapter 10, Agency Coordination, Section 10.2* explains the relationship the IRWM Plan has to these other planning documents.<br>As discussed throughout the Plan, this 2018 IRWM/SWR Plan serves as a SWRP functional equivalent, thus the SWRP is fully incorporated into the IRWM Plan. | y |

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| Consider and incorporate water management issues and climate change adaptation and mitigation strategies from local plans into the IRWM Plan. | 63 - 64 | **y/n** | y | 10.2.3 Planning Efforts to Offset Climate Change Impacts to Water Supply; 10.3.1 Linkages between Water Management and Land Use Planning | *Section 10.2.3 Planning Efforts to Offset Climate Change Impacts to Water Supply*, and *Section 10.3.1 Linkages between Water Management and Land Use Planning* includes a discussion of Climate Action Plans and Sustainability Plans | y |
| **IRWM Plan Standard: Relation to Local Land Use Planning** | | | | | **Overall Standard Sufficient** | **Yes** |
| Document current relationship between local land use planning, regional water issues, and water management objectives | 41 | **y/n** | y | 10.3.2 Current Relationships between Water Managers and Land Use Planners | *Chapter 10, Agency Coordination, Section 10.3.2* describes the existing relationship between water managers and land use planners. These relationships vary by agency, though Planning Partners meetings provide a forum for land use planners to interact with water managers. | y |
| Document future plans to further a collaborative, proactive relationship between land use planners and water managers | 41 | **y/n** | y | 10.3.3 Future Efforts to Establish Proactive Relationships | *Chapter 10, Agency Coordination, Section 10.3.3* outlines five ways to address coordination related to land use planning:<br>1. CVRWMG is committed to coordination with land use planning agencies in Region<br>2. Important for water planners to be involved in General Plan updates<br>3. Important for water planners to be involved early in development of Specific Plans<br>4. Coordination with water planners during development approval to ensure adequate water services<br>5. Review and approval by local utilities during CEQA | y |
| Demonstrate information sharing and collaboration with regional land use planning in order to manage multiple water demands throughout the state, adapt water management systems to climate change, and potentially offset climate change impacts to water supply in California. | 41 | **y/n** | y | 10.1.1 Coordination of Activities within IRWM Region; 10.1.3 Coordination with Tribal, Federal, State, and Local Agencies; 10.3 Relation to Local Land Use Planning | *Chapter 10, Section 10.1.1 Coordination of Activities within IRWM Region* describes the coordination efforts for the Coachella Valley IRWM Program including with land use agencies. Three of the CVRWMG agencies are land use agencies (City of Coachella and City of Indio), while others work closely with the land use agencies that have overlapping jurisdictions with their service areas.; *Section 10.1.3 Coordination with Tribal, Federal, State, and Local Agencies* describes the various agencies, including land use entities, that the CVRWMG has coordinated with for IRWM planning efforts. *Section 10.3 Relation to Local Land Use Planning* discusses linkages between water management and land use planning, current relationships between water | y |

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| | | | | | managers and land use planners, and future efforts to establish proactive relationships with land use planners. | |
| **IRWM Plan Standard: Stakeholder Involvement** | | | | | **Overall Standard Sufficient** | **Yes** |
| Discuss involvement of DACs and tribal communities in the IRWM planning effort | 41 - 42 | **y/n** | y | 7.2.1 Group Membership and Participation; 7.5 Disadvantaged Communities Outreach; 7.6 Tribal Outreach and Coordination; Chapter 4, Disadvantaged Communities; Volume II | The CVRWMG has conducted targeted outreach efforts to DACs and area tribes, as described in *Chapter 7, Stakeholder Involvement, Section 7.5* and *7.6*. DAC outreach is further described in *Chapter 4, Disadvantaged Communities*. As described in *Section 7.2.1 Group Membership and Participation*, future Planning Partners meetings may be held, as needed. **Volume II** of the IRWM/SWR Plan describes the efforts made to involve DACs and the challenges to DAC participation in the IRWM Program. | y |
| Describe decision-making process and roles that stakeholders can occupy | 41 - 42 | **y/n** | y | 7.3 Effective Decision-Making | *Chapter 7, Stakeholder Involvement, Section 7.3* describes the decision making process for the Region. Planning Partners provide input and help to develop the Plan and implementation, while the CVRWMG makes all final decision and provides the Planning Partners with direction. Any stakeholder may participate as a Planning Partner, Issues Group member, or through public workshops and meetings. | y |
| Discuss how stakeholders are necessary to address objectives and RMS | 41 - 42 | **y/n** | y | 9.2.3 Project Selection Factors; 8.2.2 Objectives Assessment | *Chapter 9, Project Evaluation and Prioritization, Section 9.2.3* describes how the implementation of projects by stakeholders uses RMS to achieve objectives. **Table 8-2** in *Chapter 8, Resource Management Strategies, Section 8.2.2* shows which RMS will contribute towards achieving IRWM Plan objectives. Further, *Chapter 8* highlights projects and activities implemented by stakeholders that use RMS. | y |
| Discuss how a collaborative process will engage a balance in interest groups | 41 - 42 | **y/n** | y | 8.1.1 Stakeholder/Institutional Integration | *Chapter 8, Resource Management Strategies, Section 8.1.1* describes the collaborative efforts that involve diverse stakeholders and help to balance interest groups. Such efforts include public workshops, direct outreach with stakeholders, discussion of projects and integration opportunities with stakeholder, and stakeholder approval of key IRWM Program decisions. | y |

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| Contain a public process that provides outreach and opportunity to participate in the IRWM plan **(1)**. Per 2016 GL: "Native American tribes – It should be noted that tribes are sovereign nations, and as such coordination with tribes is on a government-to-government basis." | 41 - 42 | **y/n** | y | 7.2.1 Group Membership and Participation; 7.4 Balanced Access and Opportunity for Participation; 7.5 Disadvantaged Communities Outreach; 7.6 Tribal Outreach and Coordination | *Chapter 7, Stakeholder Involvement* describes how stakeholders participate in the IRWM Program, as well as who may participate. The CVRWMG invites all stakeholders to participate, as described in *Section 7.2.1*, and conducts outreach (general and targeted) during IRWM Program milestone activities (grant opportunities, Plan updates, etc.) as described in *Section 7.4, 7.5*, and *7.6*. *Section 7.6* states that that tribes are sovereign nations, and as such coordination with tribes is on a government-to-government basis. | y |
| Identify process to involve and facilitate stakeholders during development and implementation of IRWM plan regardless of ability to pay; include description of any barriers to involvement **(2)**. "Stakeholder Involvement" in the 2012 GL is referred to "Native American Tribe and Stakeholder Involvement" in the 2016 GL and Tribes are referred to specifically. | 41 - 42 | **y/n** | y | 7.4 Balanced Access and Opportunity for Participation; 7.6 Tribal Outreach and Coordination; Appendix VII-D | *Chapter 7, Stakeholder Involvement, Section 7.4* and *Section 7.6* describe how the CVRWMG encourages participation of stakeholders in IRWM Plan and Program activities. **Appendix VII-D** documents the challenges to participation by DACs in the IRWM Program, Plan, and grants. | y |
| **IRWM Plan Standard: Coordination** | | | | | **Overall Standard Sufficient** | **Yes** |
| Identify the process to coordinate water management projects and activities of participating local agencies and stakeholders to avoid conflicts and take advantage of efficiencies **(1)**. | 42 | **y/n** | y | 10.1.1 Coordination of Activities within IRWM Region; 9.2.2 Project Review and Prioritization Process | The IRWM Program provides a forum for coordination amongst water management projects. *Chapter 10, Agency Coordination, Section 10.1.1* describes the coordination opportunities provided through the IRWM Program. *Chapter 9, Project Evaluation and Prioritization, Section 9.2.2* describes how opportunities for integration are identified during the Project Review Process, and project proponents informed of the potential for improved project efficiencies. | y |

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| Identify neighboring IRWM efforts and ways to cooperate or coordinate, and a discussion of any ongoing water management conflicts with adjacent IRWM efforts | 42 | **y/n** | y | 10.1.2 Neighboring and/or Overlapping IRWM Efforts | *Chapter 10, Agency Coordination, Section 10.1.2* explains that while nearby IRWM Regions did meet to discuss potential collaboration, ultimately it was decided that the regions were too distinct for significant coordination to be efficient or effective. | y |
| Identify areas where a state agency or other agencies may be able to assist in communication or cooperation, or implementation of IRWM Plan components, processes, and projects, or where State or federal regulatory decisions are required before implementing the projects. | 42 | **y/n** | y | 10.1.3 Coordination with Tribal, Federal, State, and Local Agencies | As described in *Chapter 10, Agency Coordination, Section 10.1.3*, the Plan has identified state agencies that can assist in cooperation and communication related to IRWM Program activities and projects. A meeting was also held with the Regional Board to discuss the 2014 IRWM Plan Update. The agencies listed in *Section 10.1.3* have been invited to participate through inclusion on the stakeholder email list or their participation in IRWM projects. | y |
| **IRWM Plan Standard: Climate Change** | | | | | **Overall Standard Sufficient** | **Yes** |
| Contain a plan, program, or methodology for further data gathering and analysis of prioritized vulnerabilities. | 42 - 44 | **y/n** | y | 8.5 Adapting Resource Management Strategies to Climate Change | Through the RMS described in *Section 8.5*, more data collection and analysis of climate change vulnerabilities will occur, especially for projects that implement adaptive management as recommended. | y |
| Include climate change as part of the project review process. | 42 - 44 | **y/n** | y | 9.2.3 Project Selection Factors;<br>8.5 Adapting Resource Management Strategies to Climate Change | *Chapter 9, Project Evaluation and Prioritization, Section 9.2.3* describes the relationship of projects to RMS, and how RMS are a project selection factor. **Table 8-3** in *Chapter 8, Resource Management Strategies, Section 8.5* shows which RMS are also climate change management strategies. | y |

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| Evaluate IRWM region's vulnerabilities to climate change and potential adaptation responses based on vulnerabilities assessment in the DWR Climate Change Handbook for Regional Water Planning **(1)**. Addition in 2016 GL - "At a minimum, the vulnerability evaluation must be equivalent to the vulnerability assessment contained in the Climate Change Handbook for Regional Water Planning, Section 4 and Appendix B." | 42 - 44 | **y/n** | y | 3.4 Identification of Climate Change Vulnerabilities;<br>8.5 Adapting Resource Management Strategies to Climate Change | *Chapter 3, Issues and Needs, Section 3.4* describes and prioritizes the climate change vulnerabilities of the Region. *Chapter 8, Resource Management Strategies, Section 8.5* describes how the RMS will help the Region adapt to or mitigate the effects of climate change. | y |
| Provide a process that considers GHG emissions when choosing between project alternatives **(1)**. Addition in 2016 GL - "At a minimum, that process must determine a project's ability to help the IRWM region reduce GHG emissions as new projects are implemented over a 20-year planning horizon and consider energy efficiency and reduction of GHG emissions when choosing between project alternatives." | 42 - 44 | **y/n** | y | 9.2.3 Project Selection Factors;<br>8.5 Adapting Resource Management Strategies to Climate Change | *Chapter 9, Project Evaluation and Prioritization, Section 9.2.3* describes the relationship of projects to RMS, and how RMS are a project selection factor. **Table 8-3** in *Chapter 8, Resource Management Strategies, Section 8.5* shows which RMS will help mitigate GHGs. | y |

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| Include a list of prioritized vulnerabilities based on the vulnerability assessment and the IRWM's decision making process. Addition in 2016 GL - "A list of prioritized vulnerabilities which includes a determination regarding the feasibility for the RWMG to address the priority vulnerabilities." | 42 - 44 | **y/n** | y | 3.4 Identification of Climate Change Vulnerabilities | *Chapter 3, Issues and Needs, Section 3.4* identifies and prioritizes 13 climate change vulnerabilities of the Region and describes how these vulnerabilities were identified and prioritized. | y |
| Address adapting to changes in the amount, intensity, timing, quality, and variability of runoff and recharge. | 42 - 44 | **y/n** | y | 2.8 Climate Change | *Chapter 2, Section 2.8* discusses the implications of climate change on the Region including changes in precipitation and runoff patterns. | y |
| Areas of the State that receive water imported from the Sacramento-San Joaquin River Delta, the area within the Delta, and areas served by coastal aquifers must also consider the effects of sea level rise (SLR) on water supply conditions and identify suitable adaptation measures. | 42 - 44 | **y/n** | y | Section 3.2.2 Identification of Climate Change Vulnerabilities | As shown in *Section 3.2.2 Identification of Climate Change Vulnerabilities* **Table 3-4**, sea level rise is not applicable to the Coachella Valley IRWM Region. | y |

IRWM Plan Standard Requirements for 2016 IRWM Guidelines in Addition to Previously Required 2012 IRWM Guideline Requirements. See Appendix H in IRWM 2016 Guidelines.

(1) Requirement must be addressed per CWC §10541 (e)(3).

(2) Requirement must be addressed per CWC §10541 (e)(14).

# Storm Water Resource Plan Checklist and Self-Certification

The following should be completed and submitted to the State Water Resources Control Board Division of Financial Assistance in support of a storm water resource plan /functionally equivalent plan. The documents submitted, including this checklist, will be used to determine State Water Board concurrence with the Storm Water Resource Plan Guidelines and statutory water code requirements.

When combining multiple documents to form a functionally equivalent Storm Water Resource Plan, submit a cover letter explaining the approach used to arrive at the functionally equivalent document. The cover letter should explain how the documents work together to address the Storm Water Resource Plan Guidelines.

| STORM WATER RESOURCE PLAN GENERAL CONTACT INFORMATION | |
|---|---|
| **Contact Info:**<br>**Name**<br>**Phone Number**<br>**Email** | <<Will update when implementing agency determined>> |
| **Date Submitted to State Water Resource Control Board:** | <<TBD>> |
| **Regional Water Quality Control Board:** | Colorado River RWQCB |
| **Title of attached documents (expand list as needed):** | 2018 Coachella Valley Integrated Regional Water Management (IRWM)/Stormwater Resource (SWR) Plan<br><br>• Date document was prepared: December 2018<br>• Document can be accessed at www.cvrwmg.org |

| STORM WATER RESOURCE PLAN INFORMATION | |
|---|---|
| **Storm Water Resource Plan Title:** | 2018 Coachella Valley IRWM/SWR Plan |
| **Date Plan Completed/Adopted:** | <<TBD>> |
| **Public Agency Preparer:** | Coachella Valley Regional Water Management Group (Coachella Valley Water District, Coachella Water Authority, Indio Water Authority, Desert Water Agency, Mission Springs Water District, and Valley Sanitary District) |
| **IRWM Submission:** | <<TBD>> |
| **Plan Description:** | The Coachella Valley IRWM/SWR Plan serves as a combined plan which addresses the requirements of the *California Department of Water Resources (DWR) Proposition 1 2016 IRWM Grant Program Guidelines* and the *State Water Resources Control Board (SWRCB) 2015 Stormwater Resource Plan (SWRP) Guidelines*. This plan serves |

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| | as a SWRP functional equivalent for the Coachella Valley. |

**Checklist Instructions:**

For **each element** listed below, review the applicable section in the Storm Water Resource Plan Guidelines and enter ALL of the following information**.** Be sure to provide a clear and thorough justification if a recommended element (non shaded) is not addressed by the Storm Water Resource Plan.

A. Mark the box if the Storm Water Resource Plan meets the provision

B. In the provided space labeled **References**, enter:
   1. Title of document(s) that contain the information (or the number of the document listed in the General Information table above);
   2. The chapter/section, **and page number(s)** where the information is located within the document(s);
   3. The entity(ies) that prepared the document(s) if different from plan preparer;
   4. The date the document(s) was prepared, and subsequent updates; and
   5. Where each document can be accessed[1] (website address or attached).

| STORM WATER RESOURCE PLAN CHECKLIST AND SELF-CERTIFICATION | | |
|---|---|---|
| Mandatory Required Elements per California Water Code are Shaded and Text is **Bold** | | |
| **Y/N** | **Plan Element** | **Water Code Section** |
| | **WATERSHED IDENTIFICATION (GUIDELINES SECTION VI.A)** | |
| **Y** | **1. Plan identifies watershed and subwatershed(s) for storm water resource planning.** | **10565(c) 10562(b)(1) 10565(c)** |
| References:<br>• **CV IRWM/SWR Plan, Section 1.1 Background** (pg 1-2)<br>• **CV IRWM/SWR Plan, Section 2.2.1 Watershed** (pg 2-5) | | |
| **Y** | 2. Plan is developed on a watershed basis, using boundaries as delineated by USGS, CalWater, USGS Hydrologic Unit designations, or an applicable integrated regional water management group, and includes a description and boundary map of each watershed and sub-watershed applicable to the Plan. | |
| References:<br>• **CV IRWM/SWR Plan, Section 1.1 Background** (pg 1-2, Figure 1-1 on pg 1-5)<br>• **CV IRWM/SWR Plan, Section 2.2.1 Watershed** (pg 2-5 to pg 2-7, Figure 2-2 on pg 2-7) | | |

[1] All documents referenced must include a website address. If a document is not accessible to the public electronically, the document must be attached in the form of an electronic file (e.g. pdf or Word 2013) on a compact disk or other electronic transmittal tool.

## WATERSHED IDENTIFICATION
## (GUIDELINES SECTION VI.A)

| | |
|---|---|
| **Y** | 3. Plan includes an explanation of why the watershed(s) and sub-watershed(s) are appropriate for storm water management with a multiple-benefit watershed approach; |

References:

- **CV IRWM/SWR Plan, Section 2.2.1 Watershed** (pg 2-5)
- **CV IRWM/SWR Plan, Section 2.2.7 Stormwater and Flood Management** (pg 2-35 to 2-36)

| | |
|---|---|
| **Y** | 4. Plan describes the internal boundaries within the watershed (boundaries of municipalities; service areas of individual water, wastewater, and land use agencies, including those not involved in the Plan; groundwater basin boundaries, etc.; preferably provided in a geographic information system shape file); |

References:

- **CV IRWM/SWR Plan, Section 1.2 Regional Water Management Group** (Figure 1-2 on pg 1-6)
- **CV IRWM/SWR Plan, Section 2.2.2 Water Systems and Distribution** (Figure 2-3 on pg 2-12)
- **CV IRWM/SWR Plan, Section 2.2.3 Wastewater** (Figure 2-5 on pg 2-21)
- **CV IRWM/SWR Plan, Section 2.2.7 Stormwater and Flood Management** (Figure 2-6 on pg 2-31)

| | |
|---|---|
| **Y** | 5. Plan describes the water quality priorities within the watershed based on, at a minimum, applicable TMDLs and consideration of water body-pollutant combinations listed on the State's Clean Water Act Section 303(d) list of water quality limited segments (a.k.a impaired waters list); |

References:

- **CV IRWM/SWR Plan, Section 2.5.3 Surface Water Quality** (pg 2-66 to 2-68)
- **CV IRWM/SWR Plan, Section 2.5.5 Stormwater Quality and Water Quality Compliance** (pg 2-68 to 2-74)
- **CV IRWM/SWR Plan, Section 2.5.6 Stormwater Quality Concerns and Priority Pollutants** (pg 2-75)

| | |
|---|---|
| **Y** | 6. Plan describes the general quality and identification of surface and ground water resources within the watershed (preferably provided in a geographic information system shape file); |

References:

- **CV IRWM/SWR Plan, Section 2.2.1 Watershed** (Identification of surface water resources in Figure 2-2 on pg 2-7)
- **CV IRWM/SWR Plan, Section 2.2.2 Water Systems and Distribution** (Identification of surface/groundwater resources in Figure 2-3 on pg 2-12, pg 2-19)
- **CV IRWM/SWR Plan, Section 2.5.1 Groundwater Quality** (pg 2-62 to pg 2-65)
- **CV IRWM/SWR Plan, Section 2.5.3 Surface Water Quality** (pg 2-66 to pg 2-68)
- **CV IRWM/SWR Plan, Section 2.5.5 Stormwater Quality and Water Quality Compliance** (p 2-68 to 2-74)
- **CV IRWM/SWR Plan, Section 2.5.6 Stormwater Quality Concerns and Priority Pollutants** (pg 2-75)

| | |
|---|---|
| **Y** | 7. Plan describes the local entity or entities that provide potable water supplies and the estimated volume of potable water provided by the water suppliers; |

References:

- **CV IRWM/SWR Plan, Section 1.2 Regional Management Group** (Water supply entities on pg 1-2 to 1-4)
- **CV IRWM/SWR Plan, Section 2.2.2 Water Systems and Distribution** (pg 2-10, Table 2-2, Table 2-3)
- **CV IRWM/SWR Plan, Section 2.4.1 Water Supply** (pg 2-47 to 2-49, Table 2-10)

| | |
|---|---|
| **Y** | 8. Plan includes map(s) showing location of native habitats, creeks, lakes, rivers, parks, and other natural or open space within the sub-watershed boundaries; and |

References:

- **CV IRWM/SWR Plan, Section 2.2.1 Watershed** (Figure 2-2 on pg 2-7)
- **CV IRWM/SWR Plan, Section 2.2.8 Natural Communities and Habitats** (Figure 2-7 on pg 2-41, Figure 2-8 on pg 2-42)
- **CV IRWM/SWR Plan, Section 2.3.1 Land Use Agencies** (Figure 2-10 on pg 2-46)

| | |
|---|---|
| Y | 9. Plan identifies (quantitative, if possible) the natural watershed processes that occur within the sub-watershed and a description of how those natural watershed processes have been disrupted within the sub-watershed (e.g., high levels of imperviousness convert the watershed processes of infiltration and interflow to surface runoff increasing runoff volumes; development commonly covers natural surfaces and often introduces non-native vegetation, preventing the natural supply of sediment from reaching receiving waters). |

References:

- **CV IRWM/SWR Plan, Section 2.2.1 Watershed** (pg 2-5 to 2-6)
- **CV IRWM/SWR Plan, Section 2.2.7 Stormwater and Flood Management** (pg 2-35)

## WATER QUALITY COMPLIANCE
## (GUIDELINES SECTION V)

| | | |
|---|---|---|
| Y | **10. Plan identifies activities that generate or contribute to the pollution of storm water or dry weather runoff, or that impair the effective beneficial use of storm water or dry weather runoff.** | **10562(d)(7)** |

References:

- **CV IRWM/SWR Plan, Section 2.5.5 Stormwater Quality** (pg 2-68 to pg 2-69)

| | | |
|---|---|---|
| Y | **11. Plan describes how it is consistent with and assists in, compliance with total maximum daily load implementation plans and applicable national pollutant discharge elimination system permits.** | **10562(b)(5)** |

References:

- **CV IRWM/SWR Plan, Section 2.5.5 Stormwater Quality** (pg 2-68 to pg 2-74)

| | | |
|---|---|---|
| Y | **12. Plan identifies applicable permits and describes how it meets all applicable waste discharge permit requirements.** | **10562(b)(6)** |

References:

- **CV IRWM/SWR Plan, Section 2.5.5 Stormwater Quality** (pg 2-69 to pg 2-74)

## ORGANIZATION, COORDINATION, COLLABORATION
## (GUIDELINES SECTION VI.B)

| | | |
|---|---|---|
| Y | **13. Local agencies and nongovernmental organizations were consulted in Plan development.** | **10565(a)** |

References:

- **CV IRWM/SWR Plan, Section 1.4.1 Stakeholder Coordination and Public Involvement** (pg 1-11)
- **CV IRWM/SWR Plan, Section 1.4.2 Planning Partners** (pg 1-11)
- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (pg 7-5 to pg 7-22, Table 7-1, Table 7-2, and Table 7-3)
- **CV IRWM/SWR Plan, Section 10.1.3 Coordination with Tribal, Federal, and Local Agencies** (pg 10-8 to 10-13)
- **CV IRWM/SWR Plan, Section 10.1.4 Coordination for the Stormwater Resources Plan** (pg 10-13 to 10-15, Table 10-1)

| | | |
|---|---|---|
| Y | **14. Community participation was provided for in Plan development.** | **10562(b)(4)** |

References:

- **CV IRWM/SWR Plan, Section 1.4.1 Stakeholder Coordination and Public Involvement** (pg 1-11)
- **CV IRWM/SWR Plan, Section 1.4.2 Planning Partners** (pg 1-11)
- **CV IRWM/SWR Plan, Section 1.4.3 DAC Outreach** (pg 1-12)
- **CV IRWM/SWR Plan, Section 1.4.4 Tribal Outreach** (pg 1-12 to 1-13)
- **CV IRWM/SWR Plan, Section 1.4.5 Public Outreach** (pg 1-13)
- **CV IRWM/SWR Plan, Section 4.2 DAC Outreach Program Activities** (pg 4-5 to 4-14)
- **CV IRWM/SWR Plan, Section 4.4 DAC Projects Developed Through Outreach Efforts** (pg 4-44 to 4-53)
- **CV IRWM/SWR Plan, Section 5.5.2 Coachella Valley IRWM Program** (pg 5-10 to 5-11)
- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (pg 7-5 to 7-22)
- **CV IRWM/SWR Plan, Section 7.4 Balanced Access and Opportunities** (pg 7-23 to 7-27)
- **CV IRWM/SWR Plan, Section 7.5 Disadvantaged Communities Outreach** (pg 7-27 to 7-30)
- **CV IRWM/SWR Plan, Section 7.6 Tribal Outreach and Coordination** (pg 7-30 to 7-31)
- **CV IRWM/SWR Plan, Section 10.1.4 Coordination for the Stormwater Resources Plan** (pg 10-14 to 10-15)

| | |
|---|---|
| **Y** | 15. Plan includes description of the existing integrated regional water management group(s) implementing an integrated regional water management plan. |

References:

- **CV IRWM/SWR Plan, Section 1.2 Regional Water Management Group** (pg 1-2 to 1-3)
- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (CVRWMG sub-section on pg 7-9 to 7-10)

## ORGANIZATION, COORDINATION, COLLABORATION
## (GUIDELINES SECTION VI.B)

| | |
|---|---|
| **Y** | 16. Plan includes identification of and coordination with agencies and organizations (including, but not limited to public agencies, nonprofit organizations, and privately owned water utilities) that need to participate and implement their own authorities and mandates in order to address the storm water and dry weather runoff management objectives of the Plan for the targeted watershed. |

References:

- **CV IRWM/SWR Plan, Section 1.4.1 Stakeholder Coordination and Public Involvement** (pg 1-11)
- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (pg 7-5 to 7-22)
- **CV IRWM/SWR Plan, Section 10.1.4 Coordination for the Stormwater Resources Plan** (pg 10-13 to 10-15; Table 10-1)

| | |
|---|---|
| **Y** | 17. Plan includes identification of nonprofit organizations working on storm water and dry weather resource planning or management in the watershed. |

References:

- **CV IRWM/SWR Plan, Section 1.4.1 Stakeholder Coordination and Public Involvement** (pg 1-11)
- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (pg 7-5 to 7-22)

| | |
|---|---|
| **Y** | 18. Plan includes identification and discussion of public engagement efforts and community participation in Plan development. |

References:

- **CV IRWM/SWR Plan, Section 1.4.1 Stakeholder Coordination and Public Involvement** (pg 1-11)
- **CV IRWM/SWR Plan, Section 1.4.2 Planning Partners** (pg 1-11)
- **CV IRWM/SWR Plan, Section 1.4.3 DAC Outreach** (pg 1-12)
- **CV IRWM/SWR Plan, Section 1.4.4 Tribal Outreach** (pg 1-12 to 1-13)
- **CV IRWM/SWR Plan, Section 1.4.5 Public Outreach** (pg 1-13)
- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (pg 7-5 to 7-22)
- **CV IRWM/SWR Plan, Section 7.4 Balanced Access and Opportunities** (pg 7-23 to 7-27)
- **CV IRWM/SWR Plan, Section 7.5 Disadvantaged Communities Outreach** (pg 7-27 to 7-30)
- **CV IRWM/SWR Plan, Section 7.6 Tribal Outreach and Coordination** (pg 7-30 to 7-31)
- **CV IRWM/SWR Plan, Section 10.1.4 Coordination for the Stormwater Resources Plan** (pg 10-13 to 10-15)

| | |
|---|---|
| **Y** | 19. Plan includes identification of required decisions that must be made by local, state or federal regulatory agencies for Plan implementation and coordinated watershed-based or regional monitoring and visualization |
| References:<br>• **CV IRWM/SWR Plan, Section 7.8 Long-Term Implementation of IRMW/SWR Plan** (pg 7-33 to 7-35)<br>• **CV IRWM/SWR Plan, Section 10.1.3 Coordination with Tribal, Federal, State and Local Agencies** (pg 10-8 to 10-13)<br>• **CV IRWM/SWR Plan, Section 11.6 SWRP Implementation** (pg 11-46 to 11-48) | |
| **Y** | 20. Plan describes planning and coordination of existing local governmental agencies, including where necessary new or altered governance structures to support collaboration among two or more lead local agencies responsible for plan implementation. |
| References:<br>• **CV IRWM/SWR Plan, Section 1.2 Regional Water Management Group** (Altered governance structure on pg 1-2 to 1-3)<br>• **CV IRWM/SWR Plan, Section 1.4.2 Planning Partners** (pg 1-11)<br>• **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (pg 7-5 to 7-22, CVRWMG sub-section on pg 7-9 to 7-10, Desert Task Force sub-section on pg 7-14)<br>• **CV IRWM/SWR Plan, Section 10.1.4 Coordination for the Stormwater Resources Plan** (pg 10-13 to 10-15) | |
| **Y** | 21. Plan describes the relationship of the Plan to other existing planning documents, ordinances, and programs established by local agencies. |
| References:<br>• **CV IRWM/SWR Plan, Section 10.2 Relation to Local Water Planning** (pg 10-15 to 10-40)<br>• **CV IRWM/SWR Plan, Section 10.3 Relation to Local Land Use Planning** (pg 10-41 to 10-47)<br>• **CV IRWM/SWR Plan, Section 10.2.5 Technical Evaluations for the 2014 IRWM/SWR Plan** (Integrated Flood Management Plan on pg 10-30 to 10-33) | |
| **Y** | 22. (If applicable) Plan explains why individual agency participation in various isolated efforts is appropriate. |
| References:<br>• **CV IRWM/SWR Plan, Section 10.2.6 Individual Planning Efforts by Agency** (pg 10-35 to 10-38) | |

## QUANTITATIVE METHODS
## (GUIDELINES SECTION VI.C)

| | |
|---|---|
| **Y** | 23. **For all analyses:**<br>Plan includes an integrated metrics-based analysis to demonstrate that the Plan's proposed storm water and dry weather capture projects and programs will satisfy the Plan's identified water management objectives and multiple benefits. |
| References:<br>• **CV IRWM/SWR Plan, Project List Appendix VI-H**<br>• **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits** (pg 9-33) | |
| **Y** | 24. **For water quality project analysis (section VI.C.2.a)**<br>Plan includes an analysis of how each project and program complies with or is consistent with an applicable NPDES permit. The analysis should simulate the proposed watershed-based outcomes using modeling, calculations, pollutant mass balances, water volume balances, and/or other methods of analysis. Describes how each project or program will contribute to the preservation, restoration, or enhancement of watershed processes (as described in Guidelines section VI.C.2.a) |

References:

- **CV IRWM/SWR Plan, Project List Appendix VI-H**
- **CV IRWM/SWR Plan, Section 6.1.3 Goals, Objectives, and the Planning Hierarchy** (Establishing metrics for analysis: Table 6-1, Objectives E and F on pg 6-16 to 19)
- **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits** (pg 9-37)

| | |
|---|---|
| **Y** | 25. **For storm water capture and use project analysis (section VI.C.2.b):** Plan includes an analysis of how collectively the projects and programs in the watershed will capture and use the proposed amount of storm water and dry weather runoff. |

References:

- **CV IRWM/SWR Plan, Project List Appendix VI-H**
- **CV IRWM/SWR Plan, Section 6.1.3 Goals, Objectives, and the Planning Hierarchy** (Establishing metrics for analysis: Table 6-1, Objective D, Target 3 on pg 6-15)
- **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits** (pg 9-44)

| | |
|---|---|
| **Y** | 26. **For water supply and flood management project analysis (section VI.C.2.c):** Plan includes an analysis of how each project and program will maximize and/or augment water supply. |

References:

- **CV IRWM/SWR Plan, Project List Appendix VI-H**
- **CV IRWM/SWR Plan, Section 6.1.3 Goals, Objectives, and the Planning Hierarchy** (Establishing metrics for analysis: Table 6-1, Objectives A, C, and D on pg 6-12 to 6-16)
- **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits** (pg 9-41 to 9-44)

| | |
|---|---|
| **Y** | 27. **For environmental and community benefit analysis (section VI.C.2.d):** Plan includes a narrative of how each project and program will benefit the environment and/or community, with some type of quantitative measurement. |

References:

- **CV IRWM/SWR Plan, Project List Appendix VI-H**
- **CV IRWM/SWR Plan, Section 6.1.3 Goals, Objectives, and the Planning Hierarchy** (Establishing metrics for analysis: Table 6-1, Objectives G, J, K, L and M on pg 6-18 to 6-25)
- **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits** (pg 9-47 to 9-50)

| | |
|---|---|
| **Y** | 28. **Data management (section VI.C.3):** Plan describes data collection and management, including: a) mechanisms by which data will be managed and stored; b) how data will be accessed by stakeholders and the public; c) how existing water quality and water quality monitoring will be assessed; d) frequency at which data will be updated; and e) how data gaps will be identified. |

References:

- **(a) CV IRWM/SWR Plan, Section 11.3.2 Data Collection Techniques** (pg 11-29)
- **(a) CV IRWM/SWR Plan, Section 11.3.4 Responsible Entity** (pg 11-29)
- **(b) CV IRWM/SWR Plan, Section 11.3.3 Stakeholder Contributions** (pg 11-29)
- **(b) CV IRWM/SWR Plan, Section 11.3.5 Regional Data Sharing** (pg 11-30)
- **(b) CV IRWM/SWR Plan, Section 11.3.6 Statewide Data Sharing** (pg 11-30 to pg 11-31)
- **(c,d) CV IRWM/SWR Plan, Section 11.3.1 Overview of Data Needs** (Stormwater Quality Data on pg 11-25)
- **(e) CV IRWM/SWR Plan, Section 11.3.1 Overview of Data Needs** (Data Gaps on pg 11-30 to 11-31)

## IDENTIFICATION AND PRIORITIZATION OF PROJECTS
### (GUIDELINES SECTION VI.D)

| | | |
|---|---|---|
| **Y** | **29. Plan identifies opportunities to augment local water supply through groundwater recharge or storage for beneficial use of storm water and dry weather runoff.** | **10562(d)(1)** |

References:

- **CV IRWM/SWR Plan, Section 8.4.3 Increase Water Supply** (Conjunctive Management and Groundwater Storage on pg 8-18 to 8-19)
- **CV IRWM/SWR Plan, Section 9.5.1 Stormwater Priorities** (pg 9-30 to 9-32 )
- **CV IRWM/SWR Plan, Section 9.5.2 Stormwater Multiple Benefits and Associated Metrics** (pg 9-32 to 9-34)
- **CV IRWM/SWR Plan, Section 9.5.3 Stormwater Resource Plan Project Prioritization Process** (pg 9-34 to 9-38)

| | | |
|---|---|---|
| **Y** | **30. Plan identifies opportunities for source control for both pollution and dry weather runoff volume, onsite and local infiltration, and use of storm water and dry weather runoff.** | **10562(d)(2)** |

References:

- **CV IRWM/SWR Plan, Section 8.4.4 Improve Water Quality** (Pollution Prevention on pg 8-29 to 8-30, Urban Runoff Management on pg 8-32 to 8-33)
- **CV IRWM/SWR Plan, Section 9.5.1 Stormwater Priorities** (pg 9-30 to 9-32 )
- **CV IRWM/SWR Plan, Section 9.5.2 Stormwater Multiple Benefits and Associated Metrics** (pg 9-32 to 9-34)
- **CV IRWM/SWR Plan, Section 9.5.3 Stormwater Resource Plan Project Prioritization Process** (pg 9-34 to 9-38)

| | | |
|---|---|---|
| **Y** | **31. Plan identifies projects that reestablish natural water drainage treatment and infiltration systems, or mimic natural system functions to the maximum extent feasible.** | **10562(d)(3)** |

References:

- **CV IRWM/SWR Plan, Section 8.4.4 Improve Water Quality** (Urban Runoff Management on pg 8-32 to 8-33)
- **CV IRWM/SWR Plan, Section 8.4.5 Improve Flood Management** (pg 8-33 to 8-34)
- **CV IRWM/SWR Plan, Section 9.5.1 Stormwater Priorities** (pg 9-30 to 9-32 )
- **CV IRWM/SWR Plan, Section 9.5.2 Stormwater Multiple Benefits and Associated Metrics** (pg 9-32 to 9-34)
- **CV IRWM/SWR Plan, Section 9.5.3 Stormwater Resource Plan Project Prioritization Process** (pg 9-34 to 9-38)

| | | |
|---|---|---|
| **Y** | **32. Plan identifies opportunities to develop, restore, or enhance habitat and open space through storm water and dry weather runoff management, including wetlands, riverside habitats, parkways, and parks.** | **10562(d)(4)** |

References:

- **CV IRWM/SWR Plan, Section 8.4.6 Practice Resource Stewardship** (pg 8-34 to 8-39)
- **CV IRWM/SWR Plan, Section 9.5.1 Stormwater Priorities** (pg 9-30 to 9-32 )
- **CV IRWM/SWR Plan, Section 9.5.2 Stormwater Multiple Benefits and Associated Metrics** (pg 9-32 to 9-34)
- **CV IRWM/SWR Plan, Section 9.5.3 Stormwater Resource Plan Project Prioritization Process** (pg 9-34 to 9-38)

| | | |
|---|---|---|
| **Y** | **33. Plan identifies opportunities to use existing publicly owned lands and gardens, farm and agricultural preserves, school sites, and government office buildings and complexes, to capture, offsite.offsite.clean, store, and use storm water and dry weather runoff either onsite or easements, including, but not limited to, parks, public open space, community** | **10562(d)(5) 10562(b)(8)** |

References:

- **CV IRWM/SWR Plan, Section 8.4.6 Practice Resource Stewardship** (Land Use Planning & Management on pg 8-37 to 8-38)
- **CV IRWM/SWR Plan, Section 9.5.1 Stormwater Priorities** (pg 9-30 to 9-32 )
- **CV IRWM/SWR Plan, Section 9.5.2 Stormwater Multiple Benefits and Associated Metrics** (pg 9-32 to 9-34)
- **CV IRWM/SWR Plan, Section 9.5.3 Stormwater Resource Plan Project Prioritization Process** (pg 9-34 to 9-38)

## IDENTIFICATION AND PRIORITIZATION OF PROJECTS
## (GUIDELINES SECTION VI.D)

| | |
|---|---|
| **Y** | **34. For new development and redevelopments (if applicable): Plan identifies design criteria and best management practices to prevent storm water and dry weather runoff pollution and increase effective storm water and dry weather runoff management for new and upgraded infrastructure and residential, commercial, industrial, and public development.** **10562(d)(6)** |

References:

- **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits** (Water Quality Projects Analysis on pg 9-43 to 9-44)

| | |
|---|---|
| **Y** | **35. Plan uses appropriate quantitative methods for prioritization of projects. (This should be accomplished by using a metrics-based and integrated evaluation and analysis of multiple benefits to maximize water supply, water quality, flood management, environmental, and other community benefits within the watershed.)** **10562(b)(2)** |

References:

- **CV IRWM/SWR Plan, Section 6.3 Stormwater Resource Plan Benefits Prioritization** (Prioritization of benefits that guide project prioritization on pg 6-29 to 6-32)
- **CV IRWM/SWR Plan, Section 9.5.2 Stormwater Multiple Benefits and Associated Metrics** (pg 9-32 to 9-34)
- **CV IRWM/SWR Plan, Section 9.5.3 Stormwater Resource Plan Project Prioritization Process** (pg 9-34 to 9-38)
- **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits** (pg 9-38 to 9-56)

| | |
|---|---|
| **Y** | 36. *Overall:* Plan prioritizes projects and programs using a metric-driven approach and a geospatial analysis of multiple benefits to maximize water supply, water quality, flood management, environmental, and community benefits within the watershed. |

References:

- **CV IRWM/SWR Plan, Section 6.3 Stormwater Resource Plan Benefits Prioritization** (Prioritization of benefits that guide project prioritization on pg 6-29 to 6-32)
- **CV IRWM/SWR Plan, Section 9.5.2 Stormwater Multiple Benefits and Associated Metrics** (pg 9-32 to 9-34)
- **CV IRWM/SWR Plan, Section 9.5.3 Stormwater Resource Plan Project Prioritization Process** (pg 9-34 to 9-38)
- **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits** (pg 9-38 to 9-56)

| | |
|---|---|
| **Y** | 37. *Multiple benefits:* Each project in accordance with the Plan contributes to at least two or more **Main Benefits** and the maximum number of **Additional Benefits** as listed in Table 4 of the Guidelines. (Benefits are not counted twice if they apply to more than one category.) |

References:

- **CV IRWM/SWR Plan, Section 9.5.3 Stormwater Resource Plan Project Prioritization Process** (Project Screening on pg 9-35, Table 9-6, Table 9-8)

## IMPLEMENTATION STRATEGY AND SCHEDULE
## (GUIDELINES SECTION VI.E)

| | |
|---|---|
| **Y** | 38. Plan identifies resources for Plan implementation, including: 1) projection of additional funding needs and sources for administration and implementation needs; and 2) schedule for arranging and securing Plan implementation financing. |

References:

- **(1) CV IRWM/SWR Plan, Section 11.5 Finance** (Stormwater Project Funding on pg 11-42, Table 11-5 on pg 11-43)
- **(2) CV IRWM/SWR Plan, Section 11.5 Finance** (Stormwater Project Funding, Table 11-6 on pg 11-44)

| | | |
|---|---|---|
| **Y** | **39. Plan projects and programs are identified to ensure the effective implementation of the storm water resource plan pursuant to this part and achieve multiple benefits.** | **10562(d)(8)** |

References:

- **CV IRWM/SWR Plan, Section 6.3 Stormwater Resource Plan Benefits Prioritization** (Prioritization of benefits that guide project prioritization on pg 6-29 to 6-32)
- **CV IRWM/SWR Plan, Section 9.5.2 Stormwater Multiple Benefits and Associated Metrics** (pg 9-32 to 9-34)9.5.3 Stormwater Resource Plan Project Prioritization Process (pg 9-34 to 9-38)
- **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits** (pg 9-38 to 9-56)
- **CV IRWM/SWR Plan, Project List Appendix VI-H**

| | | |
|---|---|---|
| **Y** | **40. The Plan identifies the development of appropriate decision support tools and the data necessary to use the decision support tools.** | **10562(d)(8)** |

References:

- **CV IRWM/SWR Plan, Section 6.3 Stormwater Resource Plan Benefits Prioritization (Prioritization of benefits that guide project prioritization on pg 6-29 to 6-32)**
- **CV IRWM/SWR Plan, Section 9.5.4 Integrated Metrics-Based Analysis of Project Benefits (pg 9-38 to 9-56)**
- **CV IRWM/SWR Plan, Section 11.3 Data Management (Data Management System as a decision support tool on pg 11-23)**

| | | |
|---|---|---|
| **Y** | 41. Plan describes implementation strategy, including:<br>a) Timeline for submitting Plan into existing plans, as applicable;<br>b) Specific actions by which Plan will be implemented;<br>c) All entities responsible for project implementation;<br>d) Description of community participation strategy;<br>e) Procedures to track status of each project;<br>f) Timelines for all active or planned projects;<br>g) Procedures for ongoing review, updates, and adaptive management of the Plan; and<br>h) A strategy and timeline for obtaining necessary federal, state, and local permits. | |

References:

- **(c, d) CV IRWM/SWR Plan, Section 7.2 Structure and Organization** (pg 7-3 to 7-22)
- **(a) CV IRWM/SWR Plan, Section 7.7 IRWM/SWR Plan Adoption** (pg 7-31 to 7-33, Figure 7-3 on pg 7-33)
- **(b, e, g) CV IRWM/SWR Plan, Section 7.8 Long-Term Implementation of IRMW/SWR Plan** (pg 7-33 to 7-35)
- **(e) CV IRWM/SWR Plan, Section 11.6 SWRP Implementation** (pg 11-45)
- **(e) CV IRWM/SWR Plan, Section 11.4.1 Plan Performance** (pg 11-32)
- **(f) CV IRWM/SWR Plan, Section 11.6 SWRP Implementation** (Figure 11-1 on pg 11-44)
- **(g) CV IRWM/SWR Plan, Section 11.6.1 Procedure for Updating the Plan** (pg 11-45)
- **(h) CV IRWM/SWR Plan, Section 11.6 SWRP Implementation** (pg 11-44 to 11-45)

| | | |
|---|---|---|
| **Y** | **42. Applicable IRWM plan:**<br>**The Plan will be submitted, upon development, to the applicable integrated regional water management (IRWM) group for incorporation into the IRWM plan.** | **10562(b)(7)** |

References:

- **CV IRWM/SWR Plan, Section 1.5 2018 IRWM/SWR Plan Development** (pg 1-15)
- **CV IRWM/SWR Plan, Section 7.7 IRWM/SWR Plan Adoption** (pg 7-31 to 7-33)

## IMPLEMENTATION STRATEGY AND SCHEDULE
## (GUIDELINES SECTION VI.E)

| | |
|---|---|
| **Y** | 43. Plan describes how implementation performance measures will be tracked. |

References:

- **CV IRWM/SWR Plan, Section 7.8 Long-Term Implementation of IRMW/SWR Plan** (Online Project Database Sub-section on pg 7-35)
- **CV RWM/SWR Plan, Section 11.6 SWRP Implementation** (pg 11-47)

## EDUCATION, OUTREACH, PUBLIC PARTICIPATION
## (GUIDELINES SECTION VI.F)

| | |
|---|---|
| **Y** | 44. **Outreach and Scoping: Community participation is provided for in Plan 10562(b)(4) implementation.** |

References:

- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (Desert Task Force on pg 7-14)
- **CV IRWM/SWR Plan, Section 7.4 Balanced Access and Opportunities** (pg 7-23 to 7-27)
- **CV IRWM/SWR Plan, Section 7.8 Long-Term Implementation of IRMW/SWR Plan** (pg 7-33 to 7-35)
- **CV IRWM/SWR Plan, Section 11.6 SWRP Implementation** (pg 11-46)

| | |
|---|---|
| **Y** | 45. Plan describes public education and public participation opportunities to engage the public when considering major technical and policy issues related to the development and |

References:

- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (Desert Task Force and Issues Groups on pg 7-14 to 7-19, Stakeholder Public Workshops on pg 7-19 to 7-22 )

| | |
|---|---|
| **Y** | 46. Plan describes mechanisms, processes, and milestones that have been or will be used to facilitate public participation and communication during development and implementation of the Plan. |

References:

- **CV IRWM/SWR Plan, Section 4.2.4 Outreach Mechanisms** (pg 4-9 to 4-12)
- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (pg 7-5 to 7-20)
- **CV IRWM/SWR Plan, Section 7.4 Balanced Access and Opportunities** (pg 7-23 to 7-27)
- **CV IRWM/SWR Plan, Section 7.5 Disadvantaged Communities Outreach** (pg 7-27 to 7-30)
- **CV IRWM/SWR Plan, Section 7.6 Tribal Outreach and Coordination** (pg 7-30 to 7-31)

| | |
|---|---|
| **Y** | 47. Plan describes mechanisms to engage communities in project design and implementation. |

References:

- **CV IRWM/SWR Plan, Section 7.2.1 Group Membership and Participation** (Desert Task Force on pg 7-14)
- **CV IRWM/SWR Plan, Section 7.8 Long-Term Implementation of IRMW/SWR Plan** (pg 7-33 to 7-35)
- **CV IRWM/SWR Plan, Section 11.6 SWRP Implementation** (pg 11-46)

| | |
|---|---|
| **Y** | 48. Plan identifies specific audiences including local ratepayers, developers, locally regulated commercial and industrial stakeholders, nonprofit organizations, and the general public. |

References:

- **CV IRWM/SWR Plan, Section Table 7-10** (pg 7-36 to 7-39)

## EDUCATION, OUTREACH, PUBLIC PARTICIPATION
### (GUIDELINES SECTION VI.F)

| | |
|---|---|
| **Y** | 49. Plan describes strategies to engage disadvantaged and climate vulnerable communities within the Plan boundaries and ongoing tracking of their involvement in the planning process. |

References:

- **CV IRWM/SWR Plan, Section 1.4.3 DAC Outreach** (pg 1-13 to 1-14)
- **CV IRWM/SWR Plan, Section 4.2 DAC Outreach Program Activities** (pg 4-5 to 4-14)
- **CV IRWM/SWR Plan, Section 4.4 DAC Projects Developed Through Outreach Efforts** (pg 4-44 to 4-53)
- **CV IRWM/SWR Plan, Section 7.5 Disadvantaged Communities Outreach** (pg 7-26 to 7-28)

| | |
|---|---|
| **Y** | 50. Plan describes efforts to identify and address environmental injustice needs and issues within the watershed. |

References:

- **CV IRWM/SWR Plan, Section 4.1.2 Previously Characterized Issues and Needs** (pg 4-3)
- **CV IRWM/SWR Plan, Section 4.1.3 Previously Identified Projects** (pg 4-3)
- **CV IRWM/SWR Plan, Section 4.2 DAC Outreach Program Activities** (pg 4-5 to 4-14)
- **CV IRWM/SWR Plan, Section 4.4 DAC Projects Developed Through Outreach Efforts** (pg 4-44 to 4-53)
- **CV IRWM/SWR Plan, Section 7.5 Disadvantaged Communities Outreach** (pg 7-25 to 7-26)

| | |
|---|---|
| **Y** | 51. Plan includes a schedule for initial public engagement and education. |

References:

- **CV IRWM/SWR Plan, Section 7.7 IRWM/SWR Plan Adoption** (pg 7-32 to 7-34)

## DECLARATION AND SIGNATURE

I declare under penalty of perjury that all information provided is true and correct to the best of my knowledge and belief.

| Authorized Signature | Title | Date |
|---|---|---|
| Authorized Signature | Title | Date |

Public Agency

# Appendix VI-B: Data and Technical Sources, Analysis, and Use in the 2018 Coachella Valley IRWM/SWR Plan Volume I

This appendix contains Table 6 from DWR's *2016 IRWM Program Guidelines*, documenting the technical analysis used in development of the 2018 Coachella Valley IRWM/SWR Plan. Complete source citations are provided following the table, and can also be found in *Chapter 12, References*.

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## Data and Technical Sources, Analysis, and Use in 2018 IRWM/SWR Plan

| Data or Study (full citation provided following table) | Analysis Method | Results/Derived Information | Use in IRWM Plan | Source Agency |
|---|---|---|---|---|
| Source: CVRWMG Agency Documents | | | | |
| Annual Economic Report (2012) | Economic data from cities and agencies in the Region. | Population and demographic data by city. Employment information by city and by industry. | Used to help characterize the Region's social/cultural make-up, economy, and economic drivers and concerns. | Coachella Valley Economic Partnership (CVEP) |
| Annual Review Water Quality Report (2009) | Reported agency data. | Average gross value per acre of cropland, and total value of crops in 2007. | Used to show the role of agriculture in Region economy. | CVWD |
| Coachella Valley Health Assessment | Regional health collaborative to address the public health needs of the residents of the Coachella Valley | 22 community health needs were identified, additional information included demographic specifics, community health indicators, and stakeholder input. | Used to provide information on the minority population within the Coachella Valley | CVHC |
| Coachella Valley Integrated Regional Water Management Plan (2014) | Provided basis for 2018 IRWM updated | Comprehensive overview of the Coachella Valley regions water supply, monitoring, quality, recycled and groundwater production and expansion | Used heavily for the 2018 IRWM structure and writing efforts | CVRWMG |
| Coachella Valley Multiple Species Habitat Conservation Plan (2007) | Scientific Advisory Committee (biologists from federal, State, and local agencies, and private sector groups). Population and land use projections. Scientific Advisory Committee-developed methodology for assessing relative biological value of land using best available science. Review of relevant scientific and planning documents. | Native habitat characterizations and native species of importance to the Region. Threats to native habitats and species. | Used to describe natural communities and habitats and discuss habitat conservation issues and needs. | CVAG |

| Data or Study (full citation provided following table) | Analysis Method | Results/Derived Information | Use in IRWM Plan | Source Agency |
|---|---|---|---|---|
| Coachella Valley Multiple Species Habitat Conservation Plan (2016) | Review updated 2007 plan. | Updated native habitat characterizations and native species of importance to the Region. Threats to native habitats and species. | Used to describe updated natural communities and habitats and discuss habitat conservation issues and needs. | CVAG |
| Coachella Valley Water Management Plan Update (2010) | Review and analysis of existing studies, planning efforts, legal decisions, and contracts/agreements. Evaluation of accomplishments stemming from 2002 WMP. Projections from the Riverside County Center for Demographic Research. Reported water supply, production, and use data. Monitoring data. | Volumes of water delivered, used, supplied. Water quality data. Population, land use, and water supply/demand projections. Groundwater levels and quality data. Characterization of water supply sources and related information. | Used to characterize the Region's groundwater basins, water supplies, and water demands. Also used to describe recharge volumes, groundwater levels and management efforts, status of groundwater, wastewater and recycled water capacity, potential for use of untreated canal water for irrigation, and the (low) potential for use of desalinated ocean water. | CVWD |
| Crafting Our Future | Economic analysis of Coachella Valley, potential development and opportunities | Comprehensive overview of the Coachella Valley economy, including population, housing, unemployment, stock market and exchange rates | Used to describe the general economic situation and prediction for future conditions within the Coachella Valley region | Coachella Valley Economic Partnership (CVEP) |
| DAC Outreach Program Study | Stakeholder input, DAC surveys, review of existing studies, spatial analysis. | Characterization of DACs and their issues/needs. | This program informed the development of Chapter 4, Disadvantaged Communities, as well as other discussions related to DACs. | CVRWMG |
| Domestic Water Quality Report (2012) | Water samples, federal and state regulations | Levels of constituents that require monitoring by state and federal regulations. | Used to describe constituents monitored in drinking water, and sources of constituents. | CVWD |

| Data or Study (full citation provided following table) | Analysis Method | Results/Derived Information | Use in IRWM Plan | Source Agency |
|---|---|---|---|---|
| Engineer's Report on Water Supply and Replenishment Assessment, Lower Whitewater River Subbasin Area of Benefit 2016-2017; Engineer's Report on Water Supply and Replenishment Assessment, Mission Creek Subbasin Area of Benefit 20136-2017; Engineer's Report on Water Supply and Replenishment Assessment, Upper Whitewater River Subbasin Area of Benefit 2016-2017 | Groundwater monitoring well data. | Groundwater elevations over time (ranging from 15-90 years of data). Groundwater storage changes. | Provides the baseline for measuring groundwater levels to meet Target under Goal 1, Objective B; Used to describe groundwater overdraft and demonstrate beneficial effects of groundwater overdraft reduction measures (based on increasing groundwater storage capacity). | CVWD |
| General Plan Environmental Impact Report | Environmental impact analysis of general plan land use and planning, transportation and circulation, air quality, noise, biological resources, cultural resources, public services and utilities, visual resources, hydrology and water quality, geology and soils, agriculture, hazards and hazardous materials, and mineral resources. | Projected population growth and impact of build out | Used to document unincorporated city population and density | City of Coachella |
| Integrated Flood Management Study | Stakeholder input, mapped flood zones overlaid with geologic, vegetation, soil-type, and land use to determine IFM opportunities. | Flood risks and maps, integrated flood management opportunities and locations. | Informed the discussion of flood issues in the Region, as well as possible opportunities for managing flooding. One of the key technical analyses completed in support of the 2014 IRWM Plan. | CVRWMG |
| Mission Creek and Garnet Hill Subbasins Water Management Plan | Existing studies and plans. Population, land use and socio-economic trends. Water demand and supply projections. Reported water supply, production, and use data. | Volumes of water delivered, used, supplied. Water quality data. Population, land use, and water supply/demand projections. Groundwater levels and quality data. Characterization of water supply sources and related information. | Used to document demand and projected future demand within the Mission Creek and Garnet Hill Sub-Basins and to describe issues pertaining to the sub-basin such as groundwater overdraft, potential impacts and solutions, and other water sources (recycled water). | CVWD, DWA, MSWD |
| Non-potable Water Operations Annual Report | Annual overview of groundwater pumping and recharge, residential conservation, recycled water program expansion, and water quality | Summary of water reclamation plant capacity | Used to compare CVWD recycled water production compared to the production from other Coachella Valley region agencies | CVWD |

| Data or Study (full citation provided following table) | Analysis Method | Results/Derived Information | Use in IRWM Plan | Source Agency |
|---|---|---|---|---|
| North Cathedral City and Thousand Palms Stormwater Management Plan: Thousand Palms and Morongo Wash Watersheds Alternatives Analysis Report | Review of existing flood hazards within the region and previous hydrologic studies of the watersheds | Flooding vulnerabilities and stormwater planning efforts in the Coachella Valley region | Used to provide detailed analysis for the Stormwater Master Plan | CVWD |
| Quality of Life and Place | Overview of the Coachella Valley in regard to number and type of jobs available | Coachella Valley region's economy centers around a certain type of jobs, as well as tourism and industry brought from attractions and festivals | Used to cite information on the region's job categories, as well as the region's attractions and festivals that produce jobs and tourism | Coachella Valley Economic Partnership (CVEP) |
| Region Acceptance Process (2009) | Review of existing planning documents and other technical data. | Hydrologic connectivity (or lack of) in and around the Coachella Valley. Recycled water use over time. | The 2009 RAP was used to describe the Region boundaries and reasons for coordination structure (informal structure) with neighboring IRWM Regions. Also used to describe internal boundaries and discuss recycled water use. | CVRWMG |
| Urban Water Management Plan (2005) | Agricultural Water Demand | Percent of total demand agricultural water accounted for. | Used to compare historical agricultural demand to current agricultural demand | CVWD |
| Urban Water Management Plans (2010) | Water meter data, agency financials, monitoring data. | Water supply and demand within service areas, population served, projected water supplies, demands, issues, water quality. | 2010 UWMPs were relied on heavily during development of the 2014 IRWM Plan. UWMPs were used to characterize the Region, describe the historical and projected water supplies and demand, document potential issues in the Region, describe water quality, and generally inform the description of the Region as a whole. | CWA, CVWD, DWA, IWA, MSWD |

| Data or Study (full citation provided following table) | Analysis Method | Results/Derived Information | Use in IRWM Plan | Source Agency |
|---|---|---|---|---|
| Urban Water Management Plans (2015) | Water meter data, agency financials, monitoring data. | Water supply and demand within service areas, population served, projected water supplies, demands, issues, water quality. | 2014 UWMPs were relied on heavily during development of the 2018 IRWM Plan. UWMPs were used to characterize the Region, describe the historical and projected water supplies and demand, document potential issues in the Region, describe water quality, and generally inform the description of the Region as a whole. | CWA, CVWD, DWA, IWA, MSWD |
| Wastewater Treatment Plant Improvements and Rate Study | City data on treatment plant capacity and state of repair. | Upgrades are necessary to outdated equipment/processes, but sizing is more than adequate. Capacity is 10.9 MGD. | Used to discuss wastewater treatment in the Region and the need to upgrade the City of Palm Springs Wastewater Treatment Plant. | City of Palm Springs |
| Source: Other Planning and Technical Documents | | | | |
| Annual Progress Report (2015-2016) | Reported water quality data. | Water quality data and exceedance incidents. | Used to inform the discussion on water quality concerns in the Region and water quality objectives. | Riverside County Flood Control and Water Conservation District (RCFCWCD) |
| Bulletin 118 –California's Groundwater Updated (2003) | Compilation of existing data from federal, State, and local agencies. | Groundwater basin delineation and characteristics. | Used to help define groundwater basins in the Region, describe characteristics of groundwater basins and their resources, inflow/outflow of basins, and justify Region boundaries. | DWR |
| California 303(d) Combined List Table (2010) | Water quality monitoring data. | Levels of constituents of concern in impaired waters. | Used to inform the discussion of surface water quality. | State Water Quality Control Board |
| California Climate Adaptation Strategy (2009) | Summary of best available science on climate change impacts in California. | Effects of climate change in California and identification of vulnerabilities. | Used to describe the potential impacts of Climate Change on the Region. | California Natural Resources Agency |
| California Climate Science and Data | Overview of climate change's effect on temperature, rain/snow trends, runoff timing, temperature/snowpack/rainfall projections, sea level rise, and predictions | Precipitation trends can vary over regions, potential stress on water systems from water cycle changes, current and future projected conditions | Used to help predict the region's water supply and reliability, how potential impacts can be protected against | DWR |
| California Water Plan Update (2009) | Review of Resource Management Strategies and water supply and quality data. | Potential climate change impacts on California's water resources, contamination of the Coachella Valley Stormwater Channel, challenges to SWP water supplies. | Used to illuminate the potential impacts of climate change on the Region, provide basis for Objective C (secure reliable imported water supply), characterize water quality issues in the Region, and describe Resource Management Strategies. | DWR |

| Data or Study (full citation provided following table) | Analysis Method | Results/Derived Information | Use in IRWM Plan | Source Agency |
|---|---|---|---|---|
| California Water Plan Update (2013) | Review of Resource Management Strategies and water supply and quality data. | Potential climate change impacts on California's water resources, contamination of the Coachella Valley Stormwater Channel, challenges to SWP water supplies. | Used to illuminate the potential impacts of climate change on the Region, provide basis for Objective C (secure reliable imported water supply), characterize water quality issues in the Region, and describe Resource Management Strategies. | DWR |
| Climate Change Annual Report (2011) | Field studies, planning/modeling/collection agencies, energy & greenhouse gas emissions, and public outreach associated with climate change impacts and projections | Potential impacts and effects climate change is projected to have on the region, including climate sensitivity, internal exposure, and adaptive capacity | Used to document key indicators of the region's potential vulnerability from climate change impacts | DWR |
| Coachella Valley Area Time Series: Farmland Mapping and Monitoring Program 1984 to 2008 | Farmland Mapping and Monitoring Program mapping results – maps use computer mapping system, aerial imagery, public review, and collection of field data. | Land use and conversion from farmland/agriculture to urbanization and other uses over 24 years. | Used to describe extent of agriculture and land use changes in the Region. | California Department of Conservation |
| Colorado River Basin Water Quality Control Board – Draft Agenda Item w/ Resolution. | Basin Plan amendment to reflect results of an early implementation monitoring program for bacterial indicators | Bacterial indicator TMDL for CVSC | Used to confirm that subsurface drain collectors serving agricultural lands have minimal effect on the bacterial impairment in the CVSC | SWRCB |
| Detection and Measurement of Land Subsidence Using Global Positioning System Surveying and Interferometric Synthetic Aperture Radar, Coachella Valley, California, 1996-2005. | Subsidence monitoring data collected using GPS surveys and radar. | Location and extent of inferred subsidence in the Region. | Used to describe where land subsidence is inferred and therefore a potential issue for the Region and describe the potential impacts of subsidence on infrastructure. | USGS |
| Integrated Regional Water Management Grant Program Guidelines (2016) | Review and integration of the 2016 IRWM Guidelines | General process, procedures, and criteria that DWR will use to implement the Proposition 1 IRWM Grant Program, and IRWM Plan Standards and related guidance, and the region acceptance and plan review procedures | Used to structure IRWM outreach, structure, development, and writing efforts | SWRCB |

| Data or Study (full citation provided following table) | Analysis Method | Results/Derived Information | Use in IRWM Plan | Source Agency |
|---|---|---|---|---|
| Integrated Regional Water Management Proposition 84 and 1E Guidelines (2012) | Guidelines for IRWM Implementation and Planning grants funded by Proposition 84 (The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coast Protection Bond Act of 2006), and Stormwater Flood Management grants funded by Proposition 1E (The Disaster Preparedness and Flood Prevention Bond Act of 2006) | The Coachella Valley Integrated Regional Water Management/Stormwater Resources Plan serves to address the requirements of these grant programs | Used to show how the IRWM region remains eligible for state grant funding. Development of the IRWM and several projects within the Coachella Valley were funded using Proposition 84 and 1E grants, | DWR |
| MS4 Permits (2008 and 2013) | Regulatory requirements and water quality testing. | Municipal separate stormwater system requirements for co-permittees. | Used to describe water quality requirements for stormwater and as a driving force behind some regional coordination and planning efforts. | Regional Board |
| NPDES Permit and Waste Discharge Requirements | Regulatory requirements and water quality testing. | Waste discharge requirements for co-permittees. | Provides foundation for additional water planning activities in Region and agency coordination. | Regional Board |
| Our Changing Planet (2010) | Review of research and observational elements of agency programs related to climate change. | Effects of increased greenhouse gases (GHGs) and GHG emissions. | Used to describe the potential impacts of Climate Change on the Region. | United States Global Change Research Program |
| Reconciling Projections of Colorado River Streamflow | High-resolution streamflow loss model for Colorado River. | Up to 20% reduction in Colorado River from Climate Change. Decreased flow in Colorado River Aqueduct. | Used to describe the potential impacts of Climate Change on the Region. | Hoerling, et al. |
| Report of Waste Discharge | Flood hazard and control characteristics of the Coachella valley and whitewater river and Coachella valley storm channel | Geology and soils of the region, bacterial and chemical impairment, permit regulations | Used to describe the impervious clay layer between the ground surface and main groundwater aquifer | RCFCWCD |
| Response of Vegetation Distribution, Ecosystem Productivity, and Fire to Climate Change Scenarios for California | MC1 Dynamic General Vegetation Model to determine response of vegetation distribution, carbon, and fire to three scenarios of future climate change. | Increased frequency of wildfires and related increased sedimentation and turbidity of surface water. Increased flash flooding. | Used to describe the potential impacts of Climate Change on the Region. | Lenihan et al. |
| Sewer System Management Plan (SSMP) | Agency data. | Salton Community Services District wastewater treatment plants and capacity. | Contributed to the discussion of the Region's wastewater treatment, and the potential for recycled water production in the future. | Salton Community Services District |
| Storm Water Resource Plan Guidelines | Review and integrated of the storm water resource plan guidelines | guidance for public agencies for the development of Storm Water Resource Plans consistent with Water Code sections 10560 et seq, | Used to ensure the Coachella IRWM/SWR Plan was adequately prepared in accordance with State Water Board and other bond-funding agencies | SWRCB |

| Data or Study (full citation provided following table) | Analysis Method | Results/Derived Information | Use in IRWM Plan | Source Agency |
|---|---|---|---|---|
| Tapestry Segmentation Database | ESRI Tapestry Segmentation methodology – 65 behavioral market segments for lifestyle demography. | Neighborhood characterizations. | Used to identify areas that likely represent more severe DAC characteristics in the Region. Contributes to the classification and understanding of DACs in the Region. | ESRI |
| U.S. Census (2016) | Census data collection and analysis. | Spatial demographic information. | Used during identification of DACs in the Region and provide population and demographic information. | U.S. Census Bureau |
| Use of Municipal Recycled Water | Agricultural water management and proper use to support the viability of agriculture, conserve water, and protect ecological integrity | Water chemical concentration and how application affects crops and seeps into groundwater | Used to detail how proper fertilizer use and irrigation practices can promote groundwater quality | California Agricultural Water Stewardship Initiative (CAWSI) |
| Watershed Management Initiative | Review and integration of existing federal, State, and local water-related programs, plans, and studies. | Nitrate concentrations in the groundwater basin, sources of nutrients in groundwater, and recommendations on possible strategies to reduce nitrate in drinking water supplies. | Used to discuss the issues and needs related to groundwater quality. | Regional Board |
| Water Quality Control Plan Colorado River Basin – Region 7 (Basin Plan) | Review of water quality testing data and reports, stakeholder input. | Water quality objectives for the Colorado River Basin. | Used to characterize the Whitewater Hydrologic Unit and describe the water quality and basin plan objectives that are the basis for water quality assessments and issues in the Region. | Regional Board |
| Whitewater River Region Monitoring Annual Report (2015-2016) | Stormwater long term trends, water quality data to analyze potential impacts | Water quality data and projected trends | Summary of parameters for each sampling site that exceeded Basin Plan WQOs | RCFCWCD |

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# Appendix VI-C: Memorandum of Understanding

This appendix includes the Memorandum of Understanding (MOU) between the six Coachella Valley Regional Water Management Group (CVRWMG) agencies (Coachella Valley Water District, Coachella Water Authority, Desert Water Agency, Indio Water Authority, Mission Springs Water District, and Valley Sanitary District) that established the CVRWMG and funding mechanisms. This appendix also includes all addendums, supplements, and amendments made to the original MOU.

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# MEMORANDUM OF UNDERSTANDING
## among
## CITY OF COACHELLA/COACHELLA WATER AUTHORITY, COACHELLA VALLEY WATER DISTRICT, DESERT WATER AGENCY, CITY OF INDIO/INDIO WATER AUTHORITY, AND MISSION SPRINGS WATER DISTRICT
## for
## DEVELOPMENT OF AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN

This Memorandum of Understanding (MOU) dated Sept. 9,2008 is entered into among the City of Coachella/Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, City of Indio/Indio Water Authority, and Mission Springs Water District (collectively known as Partners) for the purpose of coordinating water resources planning activities undertaken by the water agencies.

**WHEREAS,** each Partner has adopted a Resolution of commitment pledging to create an Integrated Regional Water Management Plan (IRWMP).

**WHEREAS,** it is in the interests of the signatory Partners and the region served by the Partners that these water resources are responsibly managed and conserved to the extent feasible; and

**WHEREAS,** the Partners wish to coordinate their long term water supply planning efforts in accordance with Section 10531 of the *Integrated Regional Water Management Planning Act of 2002* and Division 43 of the *Safe Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act* of 2006 (Acts); and

**WHEREAS,** the Partners anticipate the potential need for future agreements on specific projects or programs and with other affected agencies to further coordinate long term water supply planning.

**NOW, THEREFORE,** it is mutually understood and agreed as follows:

## SECTION 1:
## AUTHORITY OF PARTNERS

1.1 The Coachella Water Authority is a joint powers authority formed as a component of the City of Coachella and Redevelopment Agency of the City of Coachella and has statutory authority over water supply.

1.2 The Coachella Valley Water District is a public agency of the State of California organized and operating under County Water District Law, California Water Code section 30000, et seq, and Coachella District

Merger Law, Water Code section 33100, et seq. Coachella Valley Water District is a State Water Project Contractor and Colorado River Contractor empowered to import water supplies to its service area, and has statutory authority over water supply.

1.3 The Desert Water Agency is an independent special district created by a special act of the state legislature contained in chapter 100 of the appendix of the California Water Code. Desert Water Agency is also a State Water Project Contractor empowered to import water supplies to its service area, replenish local groundwater supplies, and collect assessments necessary to support a groundwater replenishment program as provided for in the Desert Water Agency Law and has statutory authority over water supply.

1.4 The Indio Water Authority is a joint powers authority formed as a component of the City of Indio and Redevelopment Agency of the City of Indio and has statutory authority over water supply.

1.5 Mission Springs Water District is a County Water District formed under Section 30000 et seq of the California Water Code and has statutory authority over water supply.

## SECTION 2: DEFINITIONS

The abbreviations and capitalized words and phrases used in this MOU shall have the following meanings:

2.1 Acts – mean Section 10531 of the Integrated Regional Water Management Planning Act of 2002 and California Water Code Division 43, known as the *Safe Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act* of 2006

2.2 Coachella Valley Region – the watershed bounded on the North by the San Bernardino Mountains, Little San Bernardino Mountains and Mecca Hills Area, on the East by Mortmar and Travertine Rock, on the South by the Santa Rosa Mountains and San Jacinto Mountains and on the West by Stubbe Canyon.

2.3 CVWD – Coachella Valley Water District

2.4 CVRWMG – Coachella Valley Regional Water Management Group

2.5 CWA – Coachella Water Authority

2.6 DWA – Desert Water Agency

2.7 IRWMP – Integrated Regional Water Management Plan

2.8 IWA – Indio Water Authority

2.9 MSWD – Mission Springs Water District

## SECTION 3:
## PURPOSES AND GOALS OF THIS MOU

3.1 **Purpose and Goals:**

3.1.1 This MOU is to memorialize the intent of the Partners to coordinate and share information concerning water supply planning programs and projects and other information, and to improve and maintain overall communication among the Partners involved. It is anticipated that coordination and information sharing among the Partners will assist the agencies in achieving their respective missions to the overall well-being of the region. Coordination and information sharing shall focus on issues of common interest in Section 3.2.

3.1.2 The execution of this MOU by the Partners shall constitute the formation of a Regional Water Management Group consisting of the Partners, in accordance with the Acts. The Regional Water Management Group shall be named the Coachella Valley Regional Water Management Group(CVRWMG).

3.1.3 It is the goal of the Partners to prepare and adopt an IRWMP for the Coachella Valley Region and to implement projects and programs individually or jointly in groups that address issues of common interest, as the group so identifies.

3.2 **Common Issues and Interest:**

3.2.1 Water supply programs and projects that may provide mutual benefits in improving water supply reliability and/or water quality.

3.2.2 Coordination of near-term and long-term water supply planning activities.

3.2.3 Development of regional approaches to problem-solving and issues resolution as well as to further common interest.

3.3 **Future Agreements By Partners:** The Partners acknowledge that by virtue of commitments and intentions stated within this MOU, the need for

certain other considerations that will facilitate the preparation of an IRWMP for the Coachella Valley Region will likely emerge. These include and are not limited to:

3.3.1 Developing a Scope of Work

3.3.2 Determining the cost sharing of projects

3.3.3 Establishing methods for project management

3.3.4 Establishing a project timeline

## SECTION 4:
## JOINT PLANNING FOR PROJECTS AND PROGRAMS

4.1 **Projects and Programs Covered by this MOU:** it is the intent of the Partners that they coordinate and collaborate to address the common issues identified. The Partners may develop and implement projects and programs individually or jointly in groupings of two or more, or enter into additional agreements in furthering those goals. Applicable projects and programs include, but are not limited to the following:

4.1.1 Water conservation programs and other demand management programs.

4.1.2 Water recycling, desalination, groundwater basin management, and water quality improvement programs and projects.

4.1.3 Water banking, conjunctive use and transfer arrangements.

4.1.4 Storage development to improve system reliability, efficiencies, and flexibility.

4.1.5 Project and program planning and development to solicit external funding.

4.1.6 Other meritorious projects or programs consistent with the purposes of this MOU.

4.2 **Communication and Coordination:** It is the intent of the Partners to meet on a monthly basis in order to carry out the purposes and goals of this MOU. The frequency and location of meetings are subject to the discretion of the Partners and may be changed when appropriate.

## SECTION 5:
## GENERAL PROVISIONS GOVERNING MOU

5.1 **Term:** The term of this MOU is indefinite. Any Partner may withdraw from the MOU by written notice given at least 45 days prior to the effective date.

5.2 **Construction of Terms:** This MOU is for the sole benefit of the Partners and shall not be construed as granting rights to any person other than the Partners or imposing obligations on a Partner to any person other than another Partner.

5.3 **Good Faith:** Each Partner shall use its best efforts and work wholeheartedly and in good faith for the expeditious completion of the objectives of this MOU and the satisfactory performance of its terms.

5.4 **Rights of the Partners and Constituencies:** This MOU does not contemplate the Partners taking any action that would:

5.4.1 Adversely affect the rights of any of the Partners; or

5.4.2 Adversely affect the customers or constituencies of any of the Partners.

5.5 This document and participation in this IRWMP are nonbinding, and in no way suggest that a Partner may not continue its own planning and undertake efforts to secure project funding from any source.

5.6 It is expected that Partners will contribute the personnel and financial resources necessary to develop the IRWMP.

**IN WITNESS WHEREOF,** the parties have executed this Memorandum of Understanding as of the day and year indicated on the first page of this MOU.

Tim Brown, City Manager
City of Coachella:

Tim Brown, Executive Director
Coachella Water Authority:

Steve Robbins, General Manager/Chief Engineer
Coachella Valley Water District:

Dave Luker, General Manager
Desert Water Agency:

Glenn Southard, City Manager
City of Indio:

Glenn Southard, Executive Director
Indio Water Authority:

Arden Wallum, General Manager
Mission Springs Water District:

# SUPPLEMENT TO MEMORANDUM OF UNDERSTANDING among CITY OF COACHELLA/COACHELLA WATER AUTHORITY, COACHELLA VALLEY WATER DISTRICT, DESERT WATER AGENCY, CITY OF INDIO/INDIO WATER AUTHORITY, AND MISSION SPRINGS WATER DISTRICT for DEVELOPMENT OF AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN

This Supplement dated April 29, 2010 is entered into among the City of Coachella/Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, City of Indio/Indio Water Authority, and Mission Springs Water District (collectively known as Partners) for the purpose of coordinating water resources planning activities undertaken by the water agencies.

**WHEREAS,** each Partner is a party to a Memorandum of Understanding (MOU) for Development of an Integrated Water Management Plan (IRWMP) dated September 9, 2008; and

**WHEREAS,** the Partners wish to supplement the MOU for the purpose of retaining a consultant to assist in preparing an IRWMP;

**NOW, THEREFORE,** it is mutually understood and agreed as follows:

## SECTION 1: RETENTION OF CONSULTANT

1.1 The consultant's scope of work, fees and contract terms shall be approved by the Partners.

1.2 Mission Springs Water District (MSWD) shall retain a consultant selected by the Partners and administer the consultant agreement as directed by the Partners.

## SECTION 2: PAYMENT

2.1 MSWD shall initially pay the consultant per the terms of the consulting agreement and as approved by the Partners, and then invoice each partner for reimbursement of one-fifth (1/5) of the payment that has been made to the consultant.

2.2 Each Partner shall pay the invoice within 14 days of receipt of invoice.

## SECTION 3:
## PARTICIPATION

3.1 Each Partner retains the right to withdraw its participation in the MOU, as stipulated by the MOU in Section 5.1.

3.2 A withdrawing Partner remains obligated for reimbursement of its share of consulting fees to be paid pursuant to agreement with the consultant executed prior to that Partner's withdrawal from participation.

## SECTION 4:
## MISCELLANEOUS

4.1 Abbreviations, capitalized words and phrases used in this supplement shall have the same meaning as in the MOU.

4.2 All terms of the MOU remain unchanged, except, as supplemented herein.

4.3 This Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF,** the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

Gene Rogers, Interim City Manager
City of Coachella

Gene Rogers, Executive Director
Coachella Water Authority

Steve Robbins, General Manager-Chief Engineer
Coachella Valley Water District

Dave Luker, General Manager
Desert Water Agency

Tara Lee Adams, City Manager
City of Indio

Tara Lee Adams, Executive Director
Indio Water Authority

Arden Wallum, General Manager
Mission Springs Water District

Gene Rogers, Interim City Manager
City of Coachella:

Gene Rogers, Executive Director
Coachella Water Authority:

Steve Robbins, General Manager-Chief Engineer
Coachella Valley Water District:

Dave Luker, General Manager
Desert Water Agency:

Tara Lee Adams, Interim City Manager
City of Indio:

Tara Lee Adams, Interim Executive Director
Indio Water Authority:

Arden Wallum, General Manager
Mission Springs Water District:

Gene Rogers, Interim City Manager
City of Coachella:

Gene Rogers, Executive Director
Coachella Water Authority:

Steve Robbins, General Manager-Chief Engineer
Coachella Valley Water District:

Dave Luker, General Manager
Desert Water Agency:

Tara Lee Adams, Interim City Manager
City of Indio:

Tara Lee Adams, Interim Executive Director
Indio Water Authority:

Arden Wallum, General Manager
Mission Springs Water District:

Gene Rogers, Interim City Manager
City of Coachella:

Gene Rogers, Executive Director
Coachella Water Authority:

Steve Robbins, General Manager-Chief Engineer
Coachella Valley Water District:

Dave Luker, General Manager
Desert Water Agency:

Tara Lee Adams, Interim City Manager
City of Indio:

Tara Lee Adams, Interim Executive Director
Indio Water Authority:

Arden Wallum, General Manager
Mission Springs Water District:

Gene Rogers, Interim City Manager
City of Coachella

Gene Rogers, Executive Director
Coachella Water Authority

Steve Robbins, General Manager-Chief Engineer
Coachella Valley Water District

Dave Luker, General Manager
Desert Water Agency

Tara Lee Adams, City Manager
City of Indio

Tara Lee Adams, Executive Director
Indio Water Authority

Arden Wallum, General Manager
Mission Springs Water District

SECOND SUPPLEMENT TO
MEMORANDUM OF UNDERSTANDING
among
CITY OF COACHELLA/COACHELLA WATER AUTHORITY, COACHELLA VALLEY WATER DISTRICT, DESERT WATER AGENCY, CITY OF INDIO/INDIO WATER AUTHORITY, and MISSION SPRINGS WATER DISTRICT
for
DEVELOPMENT OF AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN

This SECOND SUPPLEMENT dated March 13, 2012, is entered into among the City Of Coachella/Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, City Of Indio/Indio Water Authority, and Mission Springs Water District (collectively known as Partners) for the purpose of coordinating water resources planning activities undertaken by the water agencies.

**WHEREAS**, each Partner is a party to a Memorandum of Understanding (MOU) for Development of an Integrated Regional Water Management Plan (IRWMP) dated September 9, 2008; and

**WHEREAS**, each Partner is a party to a first Supplement to that MOU for the purpose of retaining a consultant to assist in preparing an IRWMP dated April 29, 2010; and

**WHEREAS**, each Partner wishes to supplement the MOU a second time for the purpose of retaining consultants and entering into grant funding contracts with the Department of Water Resources (State) for Proposition 84, Chapter 2 as follows:

A. Agreement Number 4600009468, for Disadvantaged Communities Outreach (DAC grant), in the amount of $500,000.
B. Agreement Number 4600009342, for updating the existing IRWMP (Planning grant), in the amount of $1,000,000.

**NOW, THEREFORE,** it is mutually understood and agreed as follows:

SECTION 1:
AGREEMENTS

1.1 The Coachella Valley Water District (CVWD), designated by the Partners as lead agency for the Coachella Valley IRWMP, shall have overall responsibility for executing and administering Proposition 84 grant agreements as directed by the Partners.
1.2 CVWD shall retain consultants selected by the Partners and administer consulting agreements as directed by the Partners.

1.3 Partners shall share equally with CVWD all necessary costs, risks, and obligations for satisfying the terms of the Proposition 84 grant agreements with the State.

## SECTION 2:
## DAC AND PLANNING GRANT INVOICING AND PAYMENT

2.1 CVWD will establish an escrow account, and, upon signing this amendment, each Partner will deposit $50,000 into that account for a total balance of $250,000 to ensure that outstanding invoices can be paid if the State fails to provide reimbursements.
2.2 CVWD will receive invoices from consultants on a monthly basis, and will pay invoices from the escrow account.
2.3 No less than quarterly, CVWD will invoice the State. CVWD will deposit funds received from the State into the escrow account for payment of invoices.
2.4 If outstanding invoices exceed $250,000 more than reimbursement from the State, the escrow account balance will drop to zero and the Partners will postpone grant work until State reimbursements are received.
2.5 CVWD will not be responsible for making payments which are neither backed by reimbursements from the State, nor by funds in the escrow account described in Section 2.1.
2.6 Upon completion of the Proposition 84 grant agreements, the funds remaining in the escrow account will be distributed equally to the Partners.
2.7 The sole purpose of escrow account funds is for paying consultant invoices for the DAC and planning grants after the invoices have been reviewed and approved by the Partners. The funds may not be used for any other purpose without the consensus of the Partners.

## SECTION 3:
## PARTICIPATION

3.1 Each Partner retains the right to withdraw its participation in the MOU as stipulated by the MOU in Section 5.1
3.2 A withdrawing Partner remains obligated for reimbursement of its share of costs to be paid pursuant to any agreements executed prior to that Partner's withdrawal from participation.

## SECTION 4:
## MISCELLANEOUS

4.1 Abbreviations, capitalized words and phrases used in this supplement shall have the same meaning as in the MOU.
4.2 All terms of the MOU remain unchanged, except, as supplemented herein.

4.3 This Second Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

COACHELLA VALLEY WATER DISTRICT

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DESERT WATER AGENCY

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CITY OF INDIO/INDIO WATER AUTHORITY

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MISSION SPRINGS WATER DISTRICT

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4.3 This Second Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

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COACHELLA VALLEY WATER DISTRICT

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DESERT WATER AGENCY

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CITY OF INDIO/INDIO WATER AUTHORITY

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MISSION SPRINGS WATER DISTRICT

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4.3 This Second Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

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COACHELLA VALLEY WATER DISTRICT

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DESERT WATER AGENCY

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David K. Luker
General Manager

CITY OF INDIO/INDIO WATER AUTHORITY

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MISSION SPRINGS WATER DISTRICT

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4.3 This Second Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

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COACHELLA VALLEY WATER DISTRICT

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DESERT WATER AGENCY

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CITY OF INDIO/INDIO WATER AUTHORITY

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MISSION SPRINGS WATER DISTRICT

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**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

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COACHELLA VALLEY WATER DISTRICT

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DESERT WATER AGENCY

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CITY OF INDIO/INDIO WATER AUTHORITY

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MISSION SPRINGS WATER DISTRICT

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THIRD SUPPLEMENT TO
MEMORANDUM OF UNDERSTANDING
among
CITY OF COACHELLA/COACHELLA WATER AUTHORITY, COACHELLA VALLEY WATER DISTRICT, DESERT WATER AGENCY, CITY OF INDIO/INDIO WATER AUTHORITY, and MISSION SPRINGS WATER DISTRICT
for
DEVELOPMENT OF AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN

This THIRD SUPPLEMENT dated August 8, 2012, is entered into among the City Of Coachella/Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, City Of Indio/Indio Water Authority, and Mission Springs Water District (collectively known as Partners) for the purpose of coordinating water resources planning activities undertaken by the water agencies.

**WHEREAS**, each Partner is a party to a Memorandum of Understanding (MOU) for Development of an Integrated Regional Water Management Plan (IRWMP) dated September 9, 2008; and

**WHEREAS**, each Partner is a party to a first Supplement to that MOU for the purpose of retaining a consultant to assist in preparing an IRWMP dated April 29, 2010; and

**WHEREAS,** Each Partner is a party to the second Supplement to that MOU for the purpose of retaining consultants and entering into grant funding contracts with the Department of Water Resources (State) for Proposition 84, Chapter 2 as follows:

A. Agreement Number 4600009468, for Disadvantaged Communities Outreach (DAC Grant), in the amount of $500,000.
B. Agreement Number 4600009342, for updating the existing IRWMP (Planning Grant), in the amount of $1,000,000.

**WHEREAS,** each partner wishes to supplement the MOU a third time for the purpose of entering into grant funding contracts with the Department of Water Resources (State) for Proposition 84, Chapter 2, Agreement Number 4600009560, for an IRWM Implementation Grant (Implementation Grant) in the amount of $4,000,000.

**NOW, THEREFORE,** it is mutually understood and agreed as follows:

## SECTION 1:
## AGREEMENTS

1.1 The Coachella Valley Water District (CVWD), designated by the Partners as lead agency for the Coachella Valley IRWMP, shall have overall responsibility for executing and administering this Implementation Grant as directed by the Partners.

1.2 The Grant administration costs reimbursed to CVWD shall be limited to $100,000 as described in EXHIBIT C, Table 1, Budget Category GA of the Implementation Grant Agreement.

1.3 The purpose of the Implementation Grant is to fund four individual projects, each of which has a Local Project Sponsor responsible for individual project management, oversight, compliance, and operations and maintenance. Local Project Sponsors are expected to act on behalf of CVWD in the fulfillment of Grantee responsibilities where specified in the Implementation Grant Agreement. The four individual projects and their Local Project Sponsors are listed in the Implementation Grant Agreement as follows:

- Regional Water Conservation Program — CVWD
- Short-Term Arsenic Treatment Project — Pueblo Unido Community Development
- Groundwater Quality Protection Program — Mission Springs Water District
- Groundwater Quality Protection Program — City of Cathedral City

1.4 The Regional Water Conservation Program equally benefits each of the five Partners.

## SECTION 2:
## REGIONAL WATER CONSERVATION PROGRAM
## INVOICING AND PAYMENT

2.1 Each Partner will pay their share of costs to implement programs and shall submit invoices to CVWD for reimbursement no less than quarterly.

2.2 No less than quarterly, CVWD will invoice the State. CVWD will distribute funds received from the State to the Partners based on invoices submitted by the Partners.

2.3 No Partner shall be expected to make payments for any project or program that are greater than their individual share of costs, without first receiving funds from each Partner sufficient to cover their individual share of the cost.

2.4 CVWD will not be responsible for making payments which are neither backed by reimbursements from the State, nor by funds from the Partners as described in section 2.3 above.

SECTION 3:
PARTICIPATION

3.1 Each Partner retains the right to withdraw its participation in the MOU as stipulated by the MOU in Section 5.1
3.2 A withdrawing Partner remains obligated for reimbursement of its share of costs to be paid pursuant to any agreements executed prior to that Partner's withdrawal from participation.

SECTION 4:
MISCELLANEOUS

4.1 Abbreviations, capitalized words and phrases used in this supplement shall have the same meaning as in the MOU.
4.2 All terms of the MOU remain unchanged, except, as supplemented herein.
4.3 This Second Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

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COACHELLA VALLEY WATER DISTRICT

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DESERT WATER AGENCY

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SECTION 3:
PARTICIPATION

3.1 Each Partner retains the right to withdraw its participation in the MOU as stipulated by the MOU in Section 5.1
3.2 A withdrawing Partner remains obligated for reimbursement of its share of costs to be paid pursuant to any agreements executed prior to that Partner's withdrawal from participation.

SECTION 4:
MISCELLANEOUS

4.1 Abbreviations, capitalized words and phrases used in this supplement shall have the same meaning as in the MOU.
4.2 All terms of the MOU remain unchanged, except, as supplemented herein.
4.3 This Second Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

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COACHELLA VALLEY WATER DISTRICT

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DESERT WATER AGENCY

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SECTION 3:
PARTICIPATION

3.1 Each Partner retains the right to withdraw its participation in the MOU as stipulated by the MOU in Section 5.1
3.2 A withdrawing Partner remains obligated for reimbursement of its share of costs to be paid pursuant to any agreements executed prior to that Partner's withdrawal from participation.

SECTION 4:
MISCELLANEOUS

4.1 Abbreviations, capitalized words and phrases used in this supplement shall have the same meaning as in the MOU.
4.2 All terms of the MOU remain unchanged, except, as supplemented herein.
4.3 This Second Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

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COACHELLA VALLEY WATER DISTRICT

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DESERT WATER AGENCY

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CITY OF INDIO/INDIO WATER AUTHORITY

Debra Y. Kaye

MISSION SPRINGS WATER DISTRICT

CITY OF INDIO/INDIO WATER AUTHORITY

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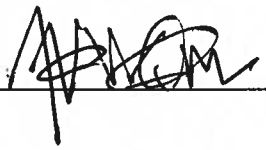
MISSION SPRINGS WATER DISTRICT



FOURTH SUPPLEMENT TO
MEMORANDUM OF UNDERSTANDING
among
CITY OF COACHELLA/COACHELLA WATER AUTHORITY, COACHELLA VALLEY WATER DISTRICT, DESERT WATER AGENCY, CITY OF INDIO/INDIO WATER AUTHORITY, and MISSION SPRINGS WATER DISTRICT
for
DEVELOPMENT OF AN INTEGRATED REGIONAL WATER MANAGEMENT PLAN

This FOURTH SUPPLEMENT dated February 22, 2013, is entered into among the City Of Coachella/Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, City Of Indio/Indio Water Authority, and Mission Springs Water District (collectively known as Partners) for the purpose of coordinating water resources planning activities undertaken by the water agencies.

**WHEREAS**, each Partner is a party to a Memorandum of Understanding (MOU) for Development of an Integrated Regional Water Management Plan (IRWMP) dated September 9, 2008; and

**WHEREAS**, each Partner is a party to a first Supplement to that MOU for the purpose of retaining a consultant to assist in preparing an IRWMP dated April 29, 2010; and

**WHEREAS,** Each Partner is a party to the second Supplement to that MOU for the purpose of retaining consultants and entering into grant funding contracts with the Department of Water Resources (State) for Proposition 84, Chapter 2 as follows:

A. Agreement Number 4600009468, for Disadvantaged Communities Outreach (DAC Grant), in the amount of $500,000.
B. Agreement Number 4600009342, for updating the existing IRWMP (Planning Grant), in the amount of $1,000,000.

**WHEREAS,** each Partner is a party to the third Supplement to the MOU for the purpose of entering into grant funding contracts with the Department of Water Resources (State) for Proposition 84, Chapter 2, Agreement Number 4600009560, for an IRWM Implementation Grant (Implementation Grant) in the amount of $4,000,000, and for the purpose of designating the Coachella Valley Water District (CVWD) as administrating agency of the Implementation Grant as directed by the Partners.

**WHEREAS,** The Partners wish to supplement the MOU for the purpose of retaining a consultant for *Subtask 9.1: Outreach* of the Implementation Grant.

**NOW, THEREFORE,** it is mutually understood and agreed as follows:

## SECTION 1:
## AGREEMENTS

1.1 The consultant's scope of work, fees and contract terms shall be approved by the Partners.
1.2 CVWD shall retain the consultant selected by the Partners and administer the consultant agreement as directed by the Partners

## SECTION 2:
## REGIONAL WATER CONSERVATION PROGRAM
## INVOICING AND PAYMENT

2.1 The Regional Water Conservation Program equally benefits each of the five Partners, and the procedures agreed to for invoicing and payment established in the Third Supplement to the MOU shall be followed.
2.2 CVWD will establish an escrow account, and upon signing this fourth amendment, each Partner will deposit $10,000 into that account for a total balance of $50,000 to ensure that outstanding invoices can be paid if the state fails to provide reimbursements.
2.3 CVWD will receive invoices from the consultant on a monthly basis and will pay invoices from the escrow account.
2.4 No less than quarterly, CVWD will invoice the State. CVWD will deposit funds received from the State into the escrow account for payment of consultant invoices.
2.5 If the escrow account balance drops to zero, the Partners will postpone grant work until state reimbursements are received.
2.6 CVWD will not be responsible for making payments, which are neither backed by reimbursements from the State, nor by funds in the escrow account.
2.7 Upon completion of *Subtask 9.1: Outreach*, the funds remaining in the escrow account will be distributed equally to the Partners.
2.8 The sole purpose of this escrow account is for paying consultant invoices for *Subtask 9.1: Outreach.* The funds may not be used for any other purpose without consensus of the Partners.

3.2 A withdrawing Partner remains obligated for reimbursement of its share of costs to be paid pursuant to any agreements executed prior to that Partner's withdrawal from participation.

SECTION 4:
MISCELLANEOUS

4.1 Abbreviations, capitalized words and phrases used in this supplement shall have the same meaning as in the MOU.
4.2 All terms of the MOU remain unchanged, except, as supplemented herein.
4.3 This Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

COACHELLA VALLEY WATER DISTRICT

DESERT WATER AGENCY

3.2 A withdrawing Partner remains obligated for reimbursement of its share of costs to be paid pursuant to any agreements executed prior to that Partner's withdrawal from participation.

SECTION 4:
MISCELLANEOUS

4.1 Abbreviations, capitalized words and phrases used in this supplement shall have the same meaning as in the MOU.
4.2 All terms of the MOU remain unchanged, except, as supplemented herein.
4.3 This Second Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

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COACHELLA VALLEY WATER DISTRICT

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DESERT WATER AGENCY

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SECTION 3:
PARTICIPATION

3.1 Each Partner retains the right to withdraw its participation in the MOU as stipulated by the MOU in Section 5.1
3.2 A withdrawing Partner remains obligated for reimbursement of its share of costs to be paid pursuant to any agreements executed prior to that Partner's withdrawal from participation.

SECTION 4:
MISCELLANEOUS

4.1 Abbreviations, capitalized words and phrases used in this supplement shall have the same meaning as in the MOU.
4.2 All terms of the MOU remain unchanged, except, as supplemented herein.
4.3 This Fourth Supplement may be executed in any number of counterparts, each of which shall be deemed original, but all of which, when taken together, shall constitute one and the same instrument.

**IN WITNESS WHEREOF**, the Partners have executed this Supplement as of the day and year indicated on the first page of this MOU.

CITY OF COACHELLA/ COACHELLA WATER AUTHORITY

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COACHELLA VALLEY WATER DISTRICT

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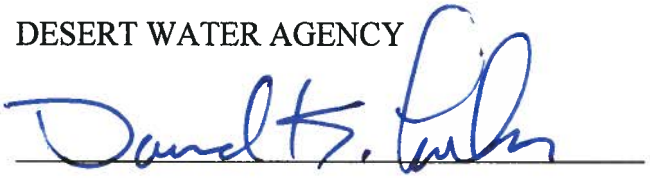
DESERT WATER AGENCY



CITY OF INDIO/INDIO WATER AUTHORITY

MISSION SPRINGS WATER DISTRICT

CITY OF INDIO/INDIO WATER AUTHORITY

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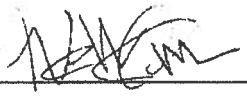
MISSION SPRINGS WATER DISTRICT



# MEMORANDUM OF UNDERSTANDING
## among
## CITY OF COACHELLA/COACHELLA WATER AUTHORITY, COACHELLA VALLEY WATER DISTRICT, DESERT WATER AGENCY, CITY OF INDIO/INDIO WATER AUTHORITY, MISSION SPRINGS WATER DISTRICT, AND VALLEY SANITARY DISTRICT
## for
# DEVELOPMENT AND IMPLEMENTATION OF THE COACHELLA VALLEY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

This Memorandum of Understanding (MOU) dated August 27, 2014 is entered into among the City of Coachella/Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, City of Indio/Indio Water Authority, Mission Springs Water District, and Valley Sanitary District (collectively known as Members) for the purpose of coordinating water resources planning activities undertaken by the water entities. This MOU restates the agreement of the founding Members and incorporates all supplements to the original MOU listed below:

- Supplement 1 – April, 29 2010 – Consultant Retention IRWM Plan
- Supplement 2 – March 13, 2012 – Consultant Retention Plan Update and DAC Outreach
- Supplement 3 – August 8, 2012 – Implementation Grant Round 1
- Supplement 4 – February 22, 2013 – Consultant Retention CV-Strategies Outreach

**WHEREAS,** each Member has adopted a Resolution of commitment approving this MOU and committing to develop, update, and implement the Coachella Valley Integrated Regional Water Management Plan (CVIRWMP).

**WHEREAS,** it is in the interests of the Members and the region served by the Members that these water resources are responsibly managed and conserved to the extent feasible; and

**WHEREAS,** the Members wish to coordinate their long term water supply planning efforts in accordance with Section 10531 of the *Integrated Regional Water Management Planning Act of 2002* and Division 43 of the *Safe Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act* of 2006 (Acts); and

**WHEREAS,** the Members anticipate the potential need for future agreements on specific activities, projects or programs and with other affected agencies to further coordinate long term water supply planning.

**NOW, THEREFORE,** it is mutually understood and agreed as follows:

## SECTION 1:
## AUTHORITY OF MEMBERS

1.1. The Coachella Water Authority is a joint powers authority formed as a component of the City of Coachella and has statutory authority over water supply.

1.2. Coachella Valley Water District is a public agency of the State of California organized and operating under County Water District Law, California Water Code section 30000, et seq, and Coachella District Merger Law, Water Code section 33100, et seq. Coachella Valley Water District is a State Water Project Contractor and Colorado River Contractor empowered to import water supplies to its service area, and has statutory authority over water supply.

1.3. The Desert Water Agency is an independent special district created by a special act of the state legislature contained in chapter 100 of the appendix of the California Water Code. Desert Water Agency is also a State Water Project Contractor empowered to import water supplies to its service area, replenish local groundwater supplies, and collect assessments necessary to support a groundwater replenishment program as provided for in the Desert Water Agency Law and has statutory authority over water supply.

1.4. The Indio Water Authority is a joint powers authority of the City of Indio and the Indio Housing Authority and has statutory authority over water supply.

1.5. Mission Springs Water District is a County Water District formed under Section 30000 et seq of the California Water Code and has statutory authority over water supply.

1.6. The Valley Sanitary District is an independent special district governed under the California Sanitary Act of 1923. The District provides collection, wastewater treatment and water reuse services for customers in the eastern Coachella Valley since 1925.

## SECTION 2:
## MEMBERSHIP CRITERIA

Membership criteria for participation as a Member includes:

2.1. Possess a water management responsibility in the Coachella Valley. This criterion could apply to but is not limited to the following entities:

a. Wholesale or retail water providers
b. Agricultural, recycled, and raw/surface water providers
c. Wastewater providers
d. Surface water rights holders
e. Regional flood/stormwater managers

2.2. Commit to adopting the 2014 CVIRWM Plan prior to membership and participate in future Plan Updates, as well as commit to good faith effort as a part of the CVRIWMG to approve the future Plan Updates

2.3. Actively participate in management and implementation of Coachella Valley IRWM program. This includes regular attendance at meetings of CVIRWMG, Planning Partners, and other essential meetings, as well as efforts necessary to review and comment on work products

2.4. Participate in funding current and future program costs.

2.5. Commit to transparency and accountability in governing body actions that relate to the Coachella Valley IRWM program.

2.6. Commit to adopt the MOU and abide by the Ground Rules.

2.7. Commit to work toward consensus in supporting the water management needs of the entire Coachella Valley.

## SECTION 3:
## DEFINITIONS

The abbreviations and capitalized words and phrases used in this MOU shall have the following meanings:

3.1. Acts — mean Section 10531 of the Integrated Regional Water Management Planning Act of 2002 and California Water Code Division 43, known as the Safe Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006

3.2. Coachella Valley Region — the watershed bounded on the North by the San Bernardino Mountains, Little San Bernardino Mountains and Mecca Hills Area, on the East by Mortmar and Travertine Rock, on the South by the Santa Rosa Mountains and San Jacinto Mountains and on the West by Stubbe Canyon.

3.3. CVWD — Coachella Valley Water District

3.4. CVIRWMG — Coachella Valley Integrated Regional Water Management Group

3.5. CWA — Coachella Water Authority

3.6. DWA — Desert Water Agency

3.7. IRWMP — Integrated Regional Water Management Plan

3.8. CVIRWMP — Coachella Valley Integrated Regional Water Management Plan

3.9. IWA — Indio Water Authority

3.10. Planning Partners — primary stakeholder group for the Coachella Valley IRWM Program that provides direct input to the Members

3.11. MSWD — Mission Springs Water District

3.12. VSD — Valley Sanitary District

## SECTION 4:
## PURPOSES AND GOALS OF THIS MOU

4.1. Purpose and Goals:

4.1.1. The purpose of this MOU is to memorialize the intent of the Members to coordinate and share information concerning water supply planning programs and projects and other information, and to improve and maintain overall communication among the Members involved. It is anticipated that coordination and information sharing among the Members will assist the agencies in achieving their respective missions to the overall well-being of the region. Coordination and information sharing shall focus on issues of common interest in Section 3.2.

4.1.2. The execution of the original MOU by the Members formed the Integrated Regional Water Management Group consisting of the Members, in accordance with the Acts. The Integrated Regional Water Management Group shall be named the Coachella Valley Integrated Regional Water Management Group (CVRIWMG) and shall be comprised of the Members listed in Section 1 and compliant with the membership criteria in Section 2.

4.1.3. The original goal of the Members was to prepare and adopt an IRWMP for the Coachella Valley Region, which was accomplished in 2010 and updated in 2014. Further their future goal is to implement projects, activities and programs individually or jointly in groups that address issues of common interest, as the group so identifies.

4.2. Common Issues and Interest:

4.2.1. Water supply programs and projects that may provide mutual benefits in improving water supply reliability and/or water quality.

4.2.2. Coordination of near-term and long-term water supply planning activities.

4.2.3. Development of regional approaches to problem-solving and issues resolution as well as to further common interest.

4.3. Future Agreements by Members: The Members acknowledge that by virtue of commitments and intentions stated within this MOU, the need for certain other considerations that will facilitate the update and implementation of the CVIRWMP for the Coachella Valley Region will emerge. Those considerations will be subject to the agreement of the parties and documented in subsequent supplements.

## SECTION 5:
## JOINT PLANNING FOR PROJECTS AND PROGRAMS

5.1. Projects, Programs and Actions which are part of the Coachella Valley Integrated Regional Water Management Plan: it is the intent of the Members that they coordinate and collaborate to address the common issues identified. By consensus, the Members may develop and implement actions, projects and programs individually or jointly in groups of two or more, or enter into additional agreements in furthering those goals. This section shall not be construed as a means of removing general benefit projects from the management oversight of CVRIWMG, nor as a method of circumventing the decision resolution process outlined in the governance documents of the CVRIWMG. Applicable projects and programs include, but are not limited to the following:

5.1.1. Water conservation programs and other demand management programs.

5.1.2. Water recycling, desalination, groundwater basin management, and water quality improvement programs and projects.

5.1.3. Water banking, conjunctive use and transfer arrangements.

5.1.4. Water storage development to improve system reliability, efficiencies, and flexibility.

5.1.5. Project and program planning and development to solicit external funding.

5.1.6. Other meritorious projects or programs consistent with the purposes of this MOU.

5.2. Communication and Coordination: It is the intent of the Members to generally meet on a monthly basis in order to carry out the purposes and goals of this MOU. The frequency and location of meetings are subject to the discretion of the Members and may be changed when appropriate.

The Members will also coordinate with stakeholders in the Coachella Valley through Planning Partners meetings and other correspondence at a frequency determined by the Members. The Planning Partners will provide opportunity for public comment on decisions directly related to the CVIRWMP development and implementation that are made by the governing bodies of the Members.

## SECTION 6:
## TERMS AND CONDITIONS

6.1. Term: The term of this MOU is indefinite. Any Member may withdraw from the MOU by written notice given at least 45 days prior to the effective date.

6.2. Construction of Terms: This MOU is for the sole benefit of the Members and shall not be construed as granting rights to any person other than the Members or imposing obligations on a Member to any person other than another Member.

6.3. Good Faith: Each Member shall use its best efforts and work wholeheartedly and in good faith for the expeditious completion of the objectives of this MOU and the satisfactory performance of its terms.

6.4. Rights of the Members: This MOU does not contemplate the Members taking any action that would:

6.4.1. Adversely affect the rights of any of the Members; or

6.4.2. Adversely affect the customers or constituencies of any of the Members.

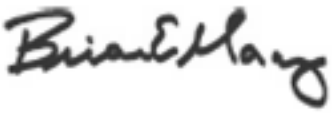
6.5. This document and participation in this CVIRWMP are nonbinding, and in no way suggest that a Member may not continue its own planning and undertake efforts to secure project funding from any source.

6.6. Members shall contribute personnel and financial resources necessary to undertake the CVIRWMP efforts of the CVIRWMG. It is expected that Members will contribute equal shares to the current and future CVIRWM program costs as agreed by the CVIRWMG. These will be documented in subsequent supplements to the MOU.

6.7. From time to time, the CVIRWMG may apply for and receive funding from state or federal agencies, or other entities for projects of mutual benefit within the IRWM Region. The CVIRWMG may appoint a member agency or consultant to administer and coordinate the use of such funding. The administering agency shall not have any additional authority above the CVIRWMG Members regarding project implementation, funding redistribution or any other decisions related to such projects.

**IN WITNESS WHEREOF,** the parties have executed this Memorandum of Understanding as of the day and year indicated on the first page of this MOU.

Jim Barrett
Coachella Valley Water District

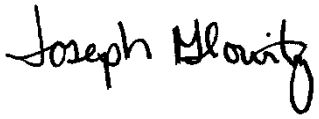


Brian Macy
Indio Water Authority

Arden Wallum
Mission Springs Water District

Dave Luker
Desert Water Agency

Kirk Cloyd Coachella Water Authority



Joseph Glowitz
Valley Sanitary District

# Appendix VI-D: Public Meeting Notes

This appendix includes meeting notes from Public Workshops, Disadvantaged Community Outreach meetings, Tribal Outreach meetings, Planning Partners meetings, Targeted Stakeholder Outreach meetings, and other public meetings held between finalization of the 2010 IRWM Plan and the finalization of the 2018 IRWM/SWR Plan.

| Meeting | Dates |
|---|---|
| Planning Partners Meetings | 6/20/2012<br>9/13/2012<br>12/13/2012<br>6/13/2013<br>9/12/2013<br>3/13/2014<br>6/12/2014*<br>12/11/2014<br>3/12/2015*<br>6/11/2015*<br>2/10/2016*<br>6/14/2016<br>11/15/2016<br>5/5/2017*<br>9/28/2017*<br>1/17/2018* |
| Public Workshops – Integrated Flood Management (IFM) | 1/15/2013<br>9/18/2013 |
| Public Workshops – Disadvantaged Communities (DAC) | 9/13/2012<br>12/13/2012<br>6/18/2013<br>6/20/2013<br>11/6/2013 |
| Public Workshops – Draft 2014 IRWM Plan Update | 11/6/2013 |
| Public Workshops – Draft 2018 IRWM/SWR Plan Update | |
| Targeted Outreach – Tribes | 8/14/2012<br>8/22/2012<br>9/11/2012<br>9/13/2012<br>10/22/2013 |
| Targeted Outreach - Stakeholder Groups | Meeting notes not provided; these were separate meetings not hosted by the IRWM Program |

*Note: Meeting notes for these meetings are not included.

# Coachella Valley Integrated Regional Water Management Program
# Planning Partners

**Wednesday June 20, 2012**
**2:00 – 4:00 p.m.**

**Coachella Valley Water District**
**Training Facility**
**75-515 Hovley Lane East**
**Palm Desert, CA 92260**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

| **Planning Partners** | **CVRWMG** |
|---|---|
| Debi Livesay, Torres Martinez Desert Cahuilla Indians | Berlinda Blackburn, CWA |
| Theresa Kimsey, Regional Water Quality Control Board | Mitch Nieman, CWA |
| Jose Cortez, Regional Water Quality Control Board | Brian Macy, IWA |
| Phoebe Seaton, California Rural Legal Assistance Foundation | Trevor Bisset, IWA |
| Dan Malcolm, Agua Caliente Band of Cahuilla Indians | John Soulliere, MSWD |
| Sergio Carranza, Pueblo Unido CDC | Mark Krause, DWA |
| Brenda Aleman, Council of Mexican Federations in North America | Katie Ruark, DWA |
| Anna Vargas, Poder Popular | Patti Reyes, CVWD |
| Mike Gialdini, Supervisor Benoit | Rosalyn Prickett, RMC |
| Leticia DeLara, Supervisor Benoit | Kathy Caldwell, RMC |
| | Crystal Mohr, RMC |

**Meeting Objectives:**

A. Kick-off the Coachella Valley IRWM Plan Update
B. Discuss the role of Planning Partners and Workgroups in the IRWM Plan Update
C. Provide an update on salt and nutrient, groundwater, and flood management activities
D. Provide an update on ongoing disadvantaged community (DAC) outreach and assistance efforts
E. Discuss upcoming grant opportunities and updates to the IRWM Project Database

**Meeting Notes:**

**Welcome and Introductions**

Patti Reyes, Coachella Valley Water District (CVWD), welcomed the Planning Partners on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the Coachella Valley Integrated Regional Water Management (IRWM) Program.

Rosalyn Prickett, RMC Water and Environment (RMC), provided an overview of the agenda and meeting objectives.

**Past IRWM Planning in the Coachella Valley Region**

Rosalyn updated the group on the State's IRWM grant program. She provided an overview of the history of IRWM planning in the Coachella Valley from the Region Acceptance Process in 2009 to current work underway to update the 2010 IRWM Plan. In total, the Coachella Valley Region has been successful at receiving $5 million in grant money through Prop 84.

Prop 84 Implementation Grants, a component of the IRWM Program, will be available through three separate funding rounds. Round 1 occurred in 2011, through which the Coachella Valley Region was awarded $4 million. This funding will go to four projects: two septic-to sewer conversion projects, one regional conservation project, and one project to provide short-term arsenic treatment to various East Valley communities.

Round 2 is expected to begin in the late summer of 2012, when the California Department of Water Resources (DWR) anticipates releasing the draft grant guidelines (Project Solicitation Package or PSP). DWR has indicated that applications for Round 2 will be due in March 2013.

Questions/Comments

Planning Partner asked about the total amount of funding available for the Coachella Valley Region through Prop 84 Implementation Grants. There is a total of $36 million available for the Colorado River Funding Area, which is competitive between the Coachella Valley, Mojave, Imperial, and Borrego regions. DWR awarded $8 million to Mojave and $4 million to Coachella Valley during Round 1, even though they had previously indicated that only $4 million would be available. That fact, in addition to DWR's 8.5% retention to cover program expenses, has resulted in a lower amount of funding that is available in subsequent rounds of grant funding.

**Current Update of Coachella Valley IRWM Plan – 2012-2014**

Rosalyn provided an overview on the next steps for the Coachella Valley IRWM Program, which is to update the 2010 IRWM Plan. The original IRWM Plan was completed on a short timeframe in order to allow the region to be eligible for Round 1 funding. As such, there are key issues that need to be addressed within the IRWM Plan Update, including:

- Stakeholder Outreach
- Groundwater Quality Evaluation
- Salt and Nutrient Management
- Integrated Flood Management
- Groundwater Elevation Monitoring
- Comprehensively update the IRWM Plan

Rosalyn explained the timeline for the IRWM Plan Update, which is a 24-month schedule that will occur from now until the summer of 2014. In addition, the CVRWMG is completing work under a separate Disadvantaged Community (DAC) Outreach Program that is also funded by DWR. The DAC Outreach Program is being conducted in parallel to the IRWM Plan Update, and there will be coordination between the two efforts. The DAC Outreach Program has an 18-month timeline, which began in April 2012 and will be complete in October 2013.

Rosalyn then provided an overview of the role of the Planning Partners, who serve as an advisory body to the CVRWMG. She also noted that the CVRWMG is convening three separate workgroups to address technical issues associated with the IRWM Plan Update. Those workgroups will address salt and nutrient management, groundwater quality, and integrated flood management.

Rosalyn provided an overview of each workgroup, noting that each workgroup corresponds to a technical study that is being conducted for the IRWM Plan Update. The workgroups will be a subset of the Planning Partners, and will provide input on the technical analyses prior to incorporation of each technical study into the IRWM Plan Update.

Questions/Comments

Planning Partner noted that there is a need to look into cost-effective and innovative solutions to water issues in the Coachella Valley, especially pertaining to DACs. There are a lot of ongoing infrastructure issues, which cannot be comprehensively addressed with traditional management approaches due to funding constraints.

Planning Partner asked if the DAC Outreach Program will include technical work to assist DACs with developing projects. The answer is yes, the DAC Outreach Program will fund technical assistance (concept planning and design) for a few projects that address critical water supply or water quality issues in DACs.

**Salt and Nutrient Management Workgroup**

Rosalyn provided an overview of this workgroup, noting that it will specifically address salt and nutrient management associated with recycled water in accordance with the State's Recycled Water Policy. She then asked if the Planning Partners had any initial input for this workgroup or if any Planning Partners were interested in participating on the workgroup, noting that the CVRWMG would like the Regional Water Quality Control Board (RWQCB) to be involved.

Questions/Comments

Planning Partner noted that anybody with a discharge permit and all water agencies should be involved.

CVRWMG clarified that this workgroup is meeting to specifically address salt and nutrient management as it pertains to recycled water and the Recycled Water Policy, and will not necessarily be discussing overall groundwater quality issues. Those issues will be addressed in the Groundwater Quality Workgroup.

*Patti Reyes, CVWD, will look into finding a representative from the agriculture sector who may be interested in participating.*

**Groundwater Quality Workgroup**

Rosalyn provided an overview of this workgroup, noting that this planning study will address groundwater quality issues in and around DAC areas throughout the Coachella Valley. This workgroup will include an analysis of groundwater quality issues in the region, and will also address data gaps where further analysis needs to be conducted. The workgroup will concentrate on identifying areas where groundwater quality does not meet maximum contaminant levels (MCLs) defined by the USEPA.

Questions/Comments

Planning Partner noted that there is data available through Pueblo Unido CDC and CVWD efforts to install reverse osmosis systems in the East Valley. Data has been collected through that program regarding where reverse osmosis systems have been installed, and areas where arsenic has been detected in groundwater wells.

Planning Partner noted that there is a need for education in the East Valley regarding groundwater quality issues, and potential solutions such as reverse osmosis systems.

Planning Partner noted that the Torres Martinez tribal group has been conducting quarterly water quality testing on groundwater quality, and has tabular data.

Planning Partner noted that the Agua Caliente and Cabazon tribal groups have also been conducting testing, and that all of the CVRWMG agencies and other agencies such as the Myoma Dunes Mutual Water Company also have water quality data.

Planning Partner asked if there is funding available to define MCLs for things such as Chromium VI. No, there is not budget available for that task.

Planning Partners noted that there are specific issues associated with salts (TDS), nitrates (in conjunction with leaking septic systems), and uranium (which is naturally occurring near fault zones). There are also high fluoride levels at Pierce Street and Avenue 66.

Planning Partner asked if there would be technical staff available to provide Spanish translation for the workgroup meetings, and suggested that meetings be held in the afternoon when more people will be able to attend. It was noted that there are translation tools available through Pueblo Unido.

*RMC will send out a poll to find a workgroup meeting time that will work for the maximum number of participants.*

*Participants identified at the Planning Partners meeting include: Sergio Carranza, Phoebe Seaton, Debi Livesay, CVRWMG agencies*

**Integrated Flood Management Workgroup**

Rosalyn provided an overview of this workgroup, noting that the purpose of this study is to develop multi-benefit flood control projects that also enhance water quality, habitat, and groundwater recharge. She then asked for interested participants and feedback on integrated flood issues in the Coachella Valley.

Questions/Comments

CVRWMG noted that in general, flood issues are from flash flood events. Due to the Region's aquitard and high water table, flood waters tend to pool and generally take time to drain.

Planning Partner noted that there are flood concerns in Oasis, which has forced the Oasis Elementary School to relocate (along with high arsenic in groundwater). This issue has been evaluated, but has not been resolved.

CVRWMG noted that many flood issues are regional in nature, and would therefore require a large, expensive, regional-based solution. There is a need to find cost-effective solutions for many flooding issues in the region.

CVRWMG also noted that Desert Hot Springs has occasional flooding issues, which are flash floods that cause a substantial amount of damage.

Planning Partner noted that CVWD is doing flood-related work in the East Valley, and can share data gathered to date with the workgroup.

Planning Partner stated that the Torres Martinez Tribe has received grants to address flooding issues on the reservation.

Planning Partner noted that municipalities (cities and the County) have data on entitlements, and therefore likely have related flood evaluations.

Planning Partner noted that there was a proposed project in the Travertine area, which has been discontinued due to flooding issues.

Planning Partner inquired if the integrated flood workgroup has any latitude for public policy advocacy. There are currently issues associated with flooding and vector control, which are detrimental to efforts to build affordable housing. There is a need to engage vector control agencies, who may not understand issues in the Coachella Valley. Alternatively, in some places simple retention basins have been built to hold flood flows. While it is not appropriate for the

IRWM Program to advocate for policy changes, the workgroup process can document issues associated with vector control and how regulations can impede affordable housing projects.

*Participants identified at the Planning Partners meeting include: Sergio Carranza, Phoebe Seaton, Debi Livesay, CVWD, and Riverside County (including vector control)*

**DAC Outreach Program**

Kathy Caldwell, RMC, provided an overview of the DAC Outreach Program. The purpose of this program is to expand upon previous DAC outreach to target individuals and groups representing DAC issues, and to also engage members of DAC community in order to frame and articulate water management issues facing DACs. She provided an overview of activities that have been completed to date, noting that the next steps are to conduct further outreach and ensure that all DAC-related groups are contacted. A form was handed out to Planning Partners to solicit input on further groups and organizations that should be contacted as part of the effort.

Kathy also provided an overview of the DAC Outreach Program Timeline, noting that this program will be interwoven with the IRWM Plan Update.

Questions/Comments

Planning Partner commented that if possible it would be helpful to conduct outreach efforts on the ground, and hold meetings at such places as the Salton Sea area, Desert Hot Springs, and the East Valley.

CVRWMG suggested that the DAC Outreach team organize a tour of the DAC areas within the Valley to see firsthand and better understand the issues they're facing.

**Upcoming DWR Grant Opportunities**

Kathy provided an overview of upcoming grant opportunities, including Proposition 1E and Proposition 84 Implementation Grants. She noted the following:

Prop 1E Stormwater Flood Management Grant-Round 2

1. Due to DWR December 2012
2. Last Round of Funding
3. Competitive throughout California (not just funding area)
4. Submitted individually

Prop 84 Implementation Grant-Round 2

1. Due to DWR March 2013
2. 2nd Round of Funding (of 3)
3. Competitive only in Colorado River Funding Area
4. Submitted by Coachella Valley IRWM Region

Questions/Comments

CVRWMG noted that in Prop 84 Implementation Grant-Round 1, the CVRWMG agencies paid for the entire application. There is not currently a strategy for funding future applications.

Planning Partner asked if tribal entities have to complete CEQA documentation if they receive IRWM grant funding. Yes, all projects must adhere to state laws including CEQA, GMA, etc. Tribal entities may choose to partner with other agencies or organizations to resolve potential contracting issues, so that they will not directly sign contracts with CVWD.

Planning Partner asked when the deadline is for submitting projects into the online project database for Prop 1E, and also asked if the CVRWMG has to approve of the projects. The CVRWMG does review projects for consistency with the IRWM Plan, and will generally write a letter that indicates that a project is consistent with the Plan. This generally takes a few weeks. Projects can be submitted into the project database at any time, it does not close for Prop 1E.

**Project Database**

Rosalyn provided an overview of the IRWM Project database, which is hosted through www.cvrwmg.org. She noted that the database will be updated as part of the IRWM Plan Update. All projects previously submitted are still within the database, and Planning Partners and other local project sponsors are encouraged to update their projects as necessary.

**Next Steps**

Rosalyn discussed the future meeting dates for IRWM Plan Update work, including:

- Salt and Nutrient Management Workgroup meeting: August 22nd 1-3 p.m.
- Integrated Flood Management Workgroup meeting: August 22nd 3-5 p.m.
- Planning Partners Meeting: TBD, mid-September 2012
- DAC Workshop Meeting: TBD, mid-September 2012 (same day as Planning Partners)

# Coachella Valley Integrated Regional Water Management Program
# Planning Partners

**Thursday September 13, 2012**
**1:00 – 3:00 p.m.**

**Coachella Valley Water District**
**Training Facility**
**75-515 Hovley Lane East**
**Palm Desert, CA 92260**

## DRAFT NOTES

*Italics denote action items.*

**Attendees:**

**Planning Partners**

Debi Livesay, Torres Martinez Desert Cahuilla Indians
Les Ramirez, Augustine Band of Cahuilla Indians
Phoebe Seaton, California Rural Legal Assistance Foundation
Cristina Mendez, California Rural Legal Assistance Foundation
Margaret Park, Agua Caliente Band of Cahuilla Indians
Christina Mokhtarzadeh, BIA SoCal Agency
Elizabeth Versace, City of Desert Hot Springs
Bill Simons, Cathedral City
Rodolfo Pinon, Pueblo Unido
Mike Gialdini, SPVR Benoit
Anna Aljabiry, DWR
Jeremy Wittie, Coachella Valley Mosquito and Vector Control District

**CVRWMG**

Berlinda Blackburn, CWA
Mitch Nieman, CWA
Brian Macy, IWA
Sara Toyoda, IWA
Michael Thornton, TKE Engineering on behalf of MSWD
Mark Krause, DWA
Katie Ruark, DWA
Patti Reyes, CVWD
Rosalyn Prickett, RMC
Kathy Caldwell, RMC
Crystal Mohr, RMC
Leslie Dumas, RMC
Daniel Cozad, IPM
Diana Cozad, IPM

**Meeting Objectives:**

A. Discuss Upcoming Grant Opportunities and Submittal Process
B. Status of Coachella Valley IRWM Plan Update, including Salt and Nutrient, Groundwater Quality, and Flood Management Activities
C. Update on Ongoing Disadvantaged Community (DAC) Outreach Efforts

**Meeting Notes:**

**Welcome and Introductions**

Patti Reyes, Coachella Valley Water District (CVWD), welcomed the Planning Partners on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five

regional water suppliers in the Coachella Valley who are responsible for overseeing the Coachella Valley Integrated Regional Water Management (IRWM) Program.

Rosalyn Prickett, RMC Water and Environment (RMC), provided an overview of the agenda and meeting objectives.

**Upcoming DWR Grant Opportunities**

Rosalyn Prickett noted that there are two upcoming DWR grant opportunities. The first is for Proposition 84 – Round 2 funding, for which the Coachella Valley will be submitting a regional application. In total, there is approximately $36 million in grant funding available to the Colorado River Funding Area, which is a highly competitive funding area consisting of the Mojave, Imperial, Anza Borrego Desert, and Coachella Valley IRWM regions. The Coachella Valley was awarded $4 million in Round 1 of Proposition 84 funding – there will be approximately $5.24 million available in Round 2, although this is competitive among all four IRWM regions.

Proposition 84 funding requires that one complete grant application be submitted per IRWM Region. That means that the Coachella Valley stakeholders will be asked to submit projects into the online project database, and a project selection process will be applied to all projects, which will then be scored and ranked. Some important requirements that potential project applicants should know about include the following:

- Projects must be submitted into the project database by October 19th to be considered for funding. Any projects previously submitted (in 2010 for Round 1 funding) must be updated to be considered.
- DWR has several contracting requirements, including:
    - Grant reimbursement is a lengthy process – it can take months for DWR to reimburse for invoices, and organizations must be prepared for this.
    - All applicants must have a 25% funding match from local or federal sources.
    - DWR holds back (retains) 10% of the grant funding until project completion.
    - CEQA is required for all projects, including those on tribal lands.
    - Labor compliance programs are required for all applicable projects.
    - For projects selected for inclusion in the Coachella Valley regional IRWM application, proponents will be responsible for contributing funds required to produce the grant application.

The project selection process for Round 2 funding is similar to Round 1 funding in that projects will be evaluated with the Project Selection Criteria in the 2010 IRWM Plan. On December 13th the CVRWMG will present the recommended projects and funding amounts to the Planning Partners. The final grant proposal will be submitted to DWR in March 2013, and application development will require input from project proponents.

Proposition 1E funds are also currently available – applications are due in December 2012. These applications, specifically for stormwater flood management, must be completed by individual project sponsors – not by the Coachella Valley Region. These applications are also competitive on a statewide basis rather than within the Colorado River Funding Area. Further, this application requires a 50% funding match, and there is no DAC waiver available. There is $92 million available in this second and last round of Proposition 1E funding.

The group was asked to discuss thoughts and pros/cons regarding how to determine how much of the grant application project proponents should be responsible for. Should proponents all pay a flat fee by equally dividing the total application cost, or should costs be specific to each project?

Below is an overview of the Planning Partners discussion on this topic:

- Are applicants allowed to charge a fee for administration? Could they use this fee to eventually get reimbursed for the application costs?
    - DWR allows a total of 5% of the grant to pay for administration. We generally allocate a portion of this (2-3%) to CVWD for their grant administration costs.
- A proportional fee seems fair; however this is only really fair if some projects require more work than others.
    - Some of the attachments are completed for the whole proposal – others, such as the Work Plan, Budget, Schedule, and Economic Analysis require a certain amount of individual project work and coordination, which may vary project to project.
- Then perhaps the fee should be split evenly for the "global" attachments (those completed equally for all projects), and charged project-by-project for the others.
- A reminder to all applicants: please make sure that you discuss paying for application costs with your organization. Some organizations may need board approval, and will need this approval prior to January 2013 for the application to be produced in time.

Questions/Comments

- How competitive is the other Funding Area within which the Mojave IRWM Region is located?
    - The Mojave IRWM Region is located in our Funding Area (Colorado River) and the Lahontan Funding Area. The Lahontan Funding Area is not very competitive.
- That does not seem very fair – Mojave is double-dipping!
    - The CVRWMG agrees, and has made that comment to DWR several times.
- Do we have the ability to link to a project?
    - Yes – email Crystal Mohr (cmohr@rmcwater.com) to change any information regarding the login and access to an existing project.
- What are the restrictions for eligible applicants?
    - Any subdivision of State – cities, counties, resource conservation districts, associations of governments, etc. In addition, non-profit organizations with an official 501(c)(3) designation and tribes are eligible applicants.
- Can organizations partner such that eligible applicants partner with non-eligible applicants as a pass-through for grant funding?
    - Yes, although we recommend that you have a formal agreement to avoid any contracting issues.
- Is there a waiver for the 25% match?
    - Potentially, this is at DWR's discretion. However, the entire grant application needs a 25% match – if one project has a match that is less than 25% of the total project cost, the other projects in the application will need to provide a larger match to account for the difference.
- When could an organization expect to receive grant funds from DWR?
    - To date, this process has been very lengthy – one year passed between the time that DWR sent the final award letter and the time the grant contract was

executed. DWR says the process could be as short as 60 days, but this assumes that there will be no edits to the work plan, budget, or schedule.

- Other Proposition 84 funds have less strict requirements so that proponents may begin grant reimbursement starting at a set date. Is this possible for IRWM funding?
    - To date DWR has not allowed for any reimbursement to occur until a grant contract is fully executed. Funding match can go back to 2008, but all of those expenditures need to be paid by proponents until a grant contract is executed. The CVRWMG understands the burden this places on proponents, especially non-governmental organizations (NGOs) and disadvantaged community (DAC) organizations.
- Would the CVRWMG agencies, or other agencies, be willing to provide start-up funding to relieve this burden on NGOs and DACs?
    - It is difficult for agencies to provide funding for beneficiaries that are not within their service areas. In addition, agencies are at risk if they pay for activities that may not be reimbursed by DWR.
    - DWR recommends that NGOs and DAC organizations invoice as frequently as possible to speed up the reimbursement process.
- Is it possible for organizations to do a companion application to California Infrastructure Bank to get a loan to help pay for the upfront costs? The terms are very good, 90 day bond rate and no upfront application fees.
    - The CVRWMG will explore this option for NGOs and DACs.
- How do you assess how much of a project benefits DACs?
    - This is something that needs to be quantified in the analysis included in the grant application.
    - The Guidelines are not currently clear on how to assess a project's contribution to a DAC. This comment has been made to DWR.
- Regarding the Proposition 84 funding, is there any way that the Round 2 funding will not be available?
    - No. According to DWR these funds are already secured and ready.

**Update on Coachella Valley IRWM Planning Studies**

Rosalyn provided an overview on the next steps for the Coachella Valley IRWM Program, which is to update the 2010 IRWM Plan. The IRWM Plan Update will include three planning studies: Salt and Nutrient Management, Groundwater Quality Evaluation, and Integrated Flood Management.

***Salt and Nutrient Management***

Rosalyn provided an overview of this workgroup, noting that it will specifically address salt and nutrient management associated with recycled water in accordance with the State's Recycled Water Policy. She then noted that the first workgroup meeting was held on August 22nd.

Progress to date for this workgroup includes: developing an approach, continuing to reach out to stakeholders, met with the Regional Board to get their perspective on the proposed approach. Next steps include conducting at least two additional workshops (September 26th and October 24th), and to develop a Work Plan that will provide a scope of work for activities that should be completed to develop a complete Salt and Nutrient Management Plan. The goal is to pull the Work Plan together by 2013.

### *Groundwater Quality Evaluation*

Leslie Dumas, RMC, provided an overview of the groundwater quality evaluation that is being conducted as part of the IRWM Plan Update. She noted that the current step of this evaluation is to identify "areas of concern." Areas of concern include DACs that are not served by municipal water suppliers, and are therefore served by private groundwater wells. After these areas are identified, research will be conducted to try to determine groundwater quality and constituents or contaminants of primary concern within the areas of concern. Similar to the other IRWM planning efforts, this effort focuses on identifying key water quality issues associated with DACs – the identification of these issues will help determine how to allocate resources to critical DAC issues.

Any entity that has groundwater quality and quantity data can really help! If you have data, please send it to Leslie: ldumas@rmcwater.com.

Questions/Comments

- The City of Coachella is not fully served by the municipal water system. As such, the entire boundary for the City of Coachella should not be excluded from the areas of concern.
- Does the list of constituents include Chromium VI?
    - Yes, the list includes Chromium III and Chromium VI.
- Is it true that processes that treat for arsenic also treat for chromium?
    - Yes, they generally also treat for manganese and iron.

### *Integrated Flood Management*

Rosalyn Prickett provided an overview of this workgroup, noting that this study and associated workgroup are currently on hold until the Flood Futures report is available from the State.

### Update on DAC Outreach and Assistance

Kathy Caldwell, RMC, provided an overview of the DAC Outreach Program. The purpose of this program is to expand upon previous DAC outreach to target individuals and groups representing DAC issues, and to also engage members of DAC community in order to frame and articulate water management issues facing DACs. She provided an overview of activities that have been completed to date, noting that the fist DAC Workshop was held the morning of September 13th.

Current efforts for the DAC Outreach Program include: completing outreach to stakeholders and interested organizations, conducting DAC-focused mapping, and reaching out to DACs to provide support for Proposition 84-Round 2 Implementation Grant Funding. If any interested non-profit organizations are interested in being involved in the DAC-focused mapping effort, please contact Kathy: kcaldwell@rmcwater.com

Kathy also provided an overview of the DAC Outreach Program Timeline, noting that this program will be interwoven with the IRWM Plan Update.

### Next Steps

Please remember to submit your projects into the online database by October 19th!

Please mark your calendars: the next Planning Partners meeting will be on December 13th.

# Coachella Valley Integrated Regional Water Management Program
# Planning Partners

**Thursday December 13, 2012**
**1:00 – 3:00 p.m.**

**Coachella Valley Association of Governments**
**Conference Room #115**
**73-710 Fred Waring Drive**
**Palm Desert, CA 92260**

## DRAFT NOTES

*Italics denote action items.*

**Attendees:**

**Planning Partners**

Anna Aljabiry, DWR
Asaad Akar, Cathedral City
Jeff Benson, City of Rancho Mirage
Bill Engs, City of Rancho Mirage
Mike Gialdini, Supervisor Benoit
Jennifer Henke, Coachella Valley Mosquito and Vector Control District
Jacquelyn Gonzales, Cabazon Band of Mission Indians
Savat Khamphou, City of Palm Springs
Debi Livesay, Torres Martinez Desert Cahuilla Indians
Laura Massie, California Rural Legal Assistance
Alan Pace, Petra Geotechnical
Tim Roberts, Salton Community Services District

**CVRWMG**

Berlinda Blackburn, CWA
Sara Toyoda, IWA
Mark Krause, DWA
Katie Ruark, DWA
David Tate, DWA
Patti Reyes, CVWD
John Soulliere, MSWD
Rosalyn Prickett, RMC
Randy Raines, RMC
Kathy Caldwell, RMC
Leslie Dumas, RMC
Crystal Mohr, RMC
Daniel Cozad, IPM

**Meeting Objectives:**

A. Keep Planning Partners Up-to-Date on the Coachella Valley IRWM Program, including Salt and Nutrient, Groundwater Quality, and Flood Management Activities
B. Update on Disadvantaged Community (DAC) Outreach Efforts
C. Review Recommended Project Package for Proposition 84-Round 2 Grant Cycle
D. Review Climate Change Vulnerability Analysis for Coachella Valley

**Meeting Notes:**

**Welcome and Introductions**

Rosalyn Prickett, RMC Water and Environment (RMC), welcomed the Planning Partners on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the

Coachella Valley Integrated Regional Water Management (IRWM) Program. Ms. Prickett then provided an overview of the agenda and meeting objectives.

**Status of IRWM Planning Activities and Schedule**

Rosalyn Prickett provided an overview of the Coachella Valley IRWM Plan Update, noting that there are six key pieces of the Plan Update: stakeholder outreach (including outreach with the Planning Partners), a Salt and Nutrient Management Technical Evaluation, a DAC Groundwater Quality Evaluation, an Integrated Flood Management Technical Evaluation, a Groundwater Elevation Monitoring Technical Evaluation, and a comprehensive update to the existing IRWM Plan. Rosalyn Prickett also explained the schedule for the aforementioned pieces of the IRWM Plan Update, noting that stakeholder outreach will occur throughout the two-year process, the DAC Groundwater Quality Evaluation and the Salt and Nutrient Management pieces will be complete by mid-2013, and the Integrated Flood Management and Groundwater Elevation pieces will be complete by the end of 2013. The IRWM Plan Update, which will incorporate information from all of the technical evaluations and stakeholder outreach efforts, will be complete by mid-2014.

**Recommended Proposition 84-Round 2 Grant Package**

Rosalyn Prickett noted that the Coachella Valley IRWM Region is in the process of developing an application for Round 2 of Proposition 84 Implementation Grant funding, for which the Coachella Valley will be submitting a regional application. In total, there is approximately $36 million in grant funding available to the Colorado River Funding Area, which is a highly competitive funding area consisting of the Mojave, Imperial, Anza Borrego Desert, and Coachella Valley IRWM regions. The Coachella Valley was awarded $4 million in Round 1 of Proposition 84 funding – there will be approximately $5.24 million available in Round 2, although this is competitive among all four IRWM regions.

Rosalyn Prickett provided an overview of the Coachella Valley's Proposition 84-Round 2 Grant application process, noting that the Region recently completed the project selection process. Next steps are for the Planning Partners to review and potentially approve of the recommended project list; once the list of projects is approved, the consultant team will work with the CVRWMG and all local project sponsors (LPS) to complete the grant application.

Rosalyn Prickett then provided an overview of the project selection process that was completed for the Proposition 84-Round 2 Grant application process. After all projects were submitted to the online project database, the CVRWMG reviewed all projects in accordance with the scoring and ranking process outlined within the adopted IRWM Plan. This process involved evaluating each project and assigning a numerical score based upon a set of adopted criteria. Once all projects received a score, the projects were separated into Tier 1 (top 50%) and Tier 2 (bottom 50%) lists. While Tier 1 projects were all considered for further funding, the CVRWMG also evaluated all projects within the Tier 2 list to ensure that any highly eligible projects were not overlooked. Further, the CVRWMG pulled out all projects that involved septic-to-sewer conversion activities and compared and assessed those projects as a group.

Based upon lessons learned from the Proposition 84-Round 1 process, the CVRWMG conducted interviews with the top 9 project applicants to determine further information about project eligibility and competitiveness. Following the project interviews, the CVRWMG formalized a draft recommended project list based on a set of secondary criteria that were applied to each interviewed project. The secondary project selection criteria are as follows:

- Are the proposed scope and budget reasonable? Is the project technically feasible / able to move forward to implementation?
- Is the project cost effective (e.g., grant $$/connection)?

- What value does the project provide to the Coachella Valley? Are those benefits aligned with the California Department of Water Resources' (DWR's) scoring criteria?
- Is the project ready to proceed? Would the project be able to proceed if there were substantial funding delays?
- Are there any potential hurdles to completing the project on-time?
- Is the funding match secure?
- Does the project serve a disadvantaged community (DAC)?
- Has need been documented (e.g., history of septic failures for septic-to-sewer project and associated water quality issues)?

Rosalyn Prickett then noted that based on the secondary criteria, the CVRWMG is currently recommending the following list of projects for Proposition 84 funding:

| Project Title | Recommended Funding Award |
|---|---|
| Coachella Valley Salt and Nutrient Management Plan (SNMP) | $500,000 |
| Groundwater Quality Protection Project – Sub-Area D2 | $1,845,000 |
| Non-Potable Water Use Expansion Project | $2,000,000 |
| San Antonio del Desierto – Sewer Sanitary Collection System Extension Project | $740,000 |
| Torres-Martinez Water Line Extension Project Avenue 64 | $155,000 |
| **TOTAL** | **$5,240,000** |

Following an explanation of each project, Rosalyn Prickett noted that every project has been recommended for partial funding (below the original grant request). Rosalyn Prickett then inquired if the Planning Partners have any questions or comments about the list of projects or the project selection process.

<u>Questions/Comments</u>

- Can the grant application be partially funded by DWR?
    - Yes. Sometimes DWR will pick projects to fund or not fund, and sometimes they will ask regions to choose projects out of the application to be funded if there is not enough money available in the Funding Area.
- Are the five projects on the recommended list prioritized?
    - No, the projects are not prioritized.
- Why did the Pierce Community Infrastructure – Sewer Sanitary Collection System Project get placed in the list of projects not considered for the Round 2 grant cycle?
    - This project had very high connection costs; the CVRWMG was concerned that this project would not be competitive from a cost-benefit ratio point of view. Given the competitive nature of the Implementation Grant process, the CVRWMG wanted to put forward the most competitive application possible. Please note that all projects within the IRWM database are immediately considered to be within the IRWM Plan; this makes them potentially eligible for other funding sources.
- Given the competitive nature of the process and the fact that DWR could choose to select a subset of projects to fund, wouldn't it be most beneficial to ask for more than the available $5,240,000?
    - Other regions, such as Mojave, have chosen to do this. However, it is risky to ask for more than the available funding amount. Ultimately the CVRWMG decided

that it would be best to go for the full amount available, but not ask for more than that.

- Note that the SNMP Project and the Non-Potable Water Use Expansion Project are connected in that all recycled water discharge permits require a SNMP to be in place.
- Regarding the Torres-Martinez project, you noted that the grant request was originally for full construction, but was reduced drastically to only cover design and engineering costs. Does the CVRWMG see this as a risk regarding the grant application? I had heard previously that design/engineering projects are not very competitive for Proposition 84 funding.
    - There are pros and cons to this decision. Ultimately the tribal and DAC benefits of this project are thought to overcome the fact that the grant request will not be for project implementation. Further, this grant will set the tribe up to receive funding from USDA for construction of the project.
- In the future, will there be an opportunity for other projects to apply for funding to cover engineering and design work, which would also make them eligible for other funding sources?
    - This is something for the CVRWMG and the Planning Partners to consider during future rounds of funding.
- Is there a way that the IRWM Program can be used to increase integration that will help make projects more cost-effective? For example, there are potential septic-to-sewer conversion projects that would be more cost-effective if nearby residents would all hook into the sewer system. Further, this would be more efficient, because it would ensure that an under-sized sewer system is not installed now and replaced in the next few years. It seems like the IRWM Program would be an appropriate venue for this kind of integration.
    - The IRWM Program has not been involved in such activities in the past, but could consider further integration activities that increase efficiencies within the Region.
- How much consideration was given to the need for the project? How was this evaluated?
    - The CVRWMG considered the actual need for the project from an environmental and technical standpoint, such as if septic systems were failing and causing public health and environmental issues. The CVRWMG also evaluated if project-related issues were impacting DACs, and then evaluated the security of the funding match. The security of the funding match helps to determine how likely the project is to actually move forward if provided grant funding. It is a priority to the CVRWMG to ensure that grant funding brought into the Region is put to use in an effective manner.

Following the discussion regarding the recommended Proposition 84-Round 2 Project List, the Planning Partners approved the project list.

**Climate Change Vulnerability Analysis**

Crystal Mohr, RMC, provided an overview of the climate change vulnerability analysis that is being conducted as part of the IRWM Plan Update. This analysis is being conducted in accordance with DWR standards for climate change planning per the IRWM Guidelines. DWR requires the climate change analysis to include two types of analysis: adaptation analysis and mitigation analysis. The first step of both analyses is to conduct a literature review; the consultant team did this by using widely cited statewide climate change resources as well as all relevant local climate change sources such as Climate Action Plans for various cities within the

Coachella Valley. Cumulatively, these sources demonstrate that the Coachella Valley could experience the following effects as a result of climate change:

- Temperature Change: Increase between 5-10 degrees (Fahrenheit)
- Precipitation: Little to no change in annual average rainfall
- Wildfire Risk: Same or slightly increased likelihood of wildfire
- Water Demand: Increases expected but not quantified
- Water Supply: Expect decreases to imported water (Colorado River) delivery and non-quantified changes to local groundwater supply

Ms. Mohr then provided an overview of the potential climate change vulnerabilities that the Region could face. These vulnerabilities are categorized into 7 categories, including: water demand, water supply, water quality, sea level rise, flooding, ecosystem and habitat, and hydropower. Ms. Mohr provided a brief overview of the analysis, inquiring if the Planning Partners had any comments. Following the meeting, the consultant team will distribute the climate change vulnerability matrix to stakeholders for further comments.

Questions/Comments

- Did the literature take into account population change associated with temperature increases? It seems like if the temperature in the Coachella Valley actually increased by 10 degrees, there would be much less people, and therefore water demand would not increase as currently projected.
    - RMC will check with the technical team on this question, however, in general the analysis only took into consideration very specific water-related climate change issues and did not analyze things such as population change.
- The matrix needs to be edited under water quality – it currently says that the Coachella Valley does not use any surface water sources, which is not accurate.

**Update on DAC Outreach and Assistance**

Kathy Caldwell, RMC, provided an overview of the DAC Outreach Program. The purpose of this program is to expand upon previous DAC outreach to target individuals and groups representing DAC issues, and to also engage members of DAC community in order to frame and articulate water management issues facing DACs. She provided an overview of activities that have been completed to date, noting that the second DAC Workshop was held the morning of December 13th.

Current efforts for the DAC Outreach Program include: continuing outreach to stakeholders and interested organizations, continuing work on DAC-focused mapping and characterization, contracting with non-profit organizations to assist in the process, holding stakeholder outreach meetings (DAC Workshops), beginning the flood mapping process, and continuing to coordinate with the IRWM Plan Update efforts.

Kathy also provided an overview of the DAC Outreach Program Timeline, noting that this program will be interwoven with the IRWM Plan Update.

Questions/Comments

- Does the flood mapping process include updating FEMA maps?
    - Yes and no. The process will start with available data such as FEMA data, and use locally-collected data to update those maps. The focus, however, will be on mapping disadvantaged communities that face flood-related issues.
- Does the flood analysis include Salton City? Flooding is a huge problem there.

- Yes. The flood analysis will cover the entire IRWM Region, which includes Salton City.

**Update on Coachella Valley IRWM Technical Evaluations**

Rosalyn Prickett provided an overview on the three planning studies that will be incorporated into the IRWM Plan Update: Salt and Nutrient Management, Groundwater Quality Evaluation, and Integrated Flood Management.

***Salt and Nutrient Management***

Rosalyn provided an overview of this workgroup, noting that it will specifically address salt and nutrient management associated with recycled water in accordance with the State's Recycled Water Policy. She then noted that three stakeholder workshops were conducted for this planning study.

The current status of the planning study is that the technical team has compiled a draft work plan, which outlines the salt and nutrient management planning process that would be recommended for the Coachella Valley. The next step with this planning study is to compile and respond to all comments – if you have not submitted comments, please do so ASAP! Modifications will be made to the work plan based upon relevant comments, and then the revised work plan will be reviewed by the CVRWMG. After the CVRWMG has approved of the work plan, they will meet with the Regional Water Quality Control Board staff for feedback, and potentially revise the work plan again based upon the Regional Board's comments. Following these steps, the CVRWMG will give a presentation to the Regional Board on January 17th to discuss the process and receive input from the board before moving on to the next phase, which would involve developing a salt and nutrient management plan.

***Groundwater Quality Evaluation***

Leslie Dumas, RMC, provided an overview of the groundwater quality evaluation that is being conducted as part of the IRWM Plan Update. She noted that the current step of this evaluation is to identify "areas of concern." Areas of concern include DACs that are not served by municipal water suppliers, and are therefore served by private groundwater wells. Information available from the Coachella Valley water purveyors as well as publically available state and federal data has allowed the technical team to identify areas of concern as well as constituents of concern in those areas. The data that was analyzed shows that there are four primary constituents of concern: arsenic, fluoride, nitrate, and uranium. The next step in the analysis is to determine potential solutions for addressing the various constituents. According to information from the EPA, membrane separation (which includes reverse osmosis), is the best available technology for addressing each constituent potentially present in local groundwater basins. Future steps in this process will involve a data gap analysis to determine more information that may be useful such as the exact location of wells, the volume of water being pumped and used, and a confirmation of water quality at each well. Following the data gap analysis, the technical team will develop an outline for a monitoring program that can potentially be implemented to address identified data gaps and other outcomes from the planning study.

<u>Questions/Comments</u>

- The number of sampling points reported for constituents of concern – do those represent the number of samples throughout the County or within the Coachella Valley Groundwater Basin?
    - The number of sampling points represents the number of samples that exceeded the MCL value – these sampling points are only for the local groundwater basins and are not County-wide.

***Integrated Flood Management***

Rosalyn Prickett provided an overview of this workgroup, noting that this study and associated workgroup will kick off during the new year. The first integrated flood management workgroup will be held on January 15th, 2013. The technical team will send an announcement to stakeholders for this meeting.

**Next Steps**

The technical team, CVRWMG, and LPS will begin preparing the Round 2-Proposition 84 Implementation Grant application, and will continue to conduct work on the various planning studies that will be incorporated into the IRWM Plan Udpate.

Please mark your calendars: the next Planning Partners meeting will be held on March 14, 2013!

# Coachella Valley Integrated Regional Water Management Program
# Planning Partners

**Thursday June 13, 2013**
**2:30 – 4:30 p.m.**

**Coachella Valley Association of Governments**
**Conference Room #115**
**73-710 Fred Waring Drive**
**Palm Desert, CA 92260**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

**Planning Partners**

Mike Gialdini, Supervisor Benoit
Phoebe Seaton, California Rural Legal Assistance
Maria Elena Kennedy, DAC Representative
Margaret Park, Agua-Caliente Band of Cahuilla Indians
Jim Sullivan, Coachella Valley Association of Governments
Abdi Haile, Colorado River Regional Board
Susie del Toro, El Sol Neighborhood Educational Center
Rodolfo Piñon, Pueblo Unido CDC
Ryan Sinclair, Loma Linda University
Jaime Lopez, Loma Linda University
Tom West, Carollo Engineers
Dave Rydman, Carollo Engineers

**CVRWMG**

Berlinda Blackburn, CWA
Sara Toyoda, IWA
Katie Ruark, DWA
David Tate, DWA
Patti Reyes, CVWD
John Soulliere, MSWD
Rosalyn Prickett, RMC
Kathy Caldwell, RMC
Leslie Dumas, RMC
Crystal Mohr, RMC
Daniel Cozad, IPM

**Meeting Objectives:**

A. Keep Planning Partners Up-to-Date on the Coachella Valley IRWM Program, including Salt and Nutrient, Groundwater Quality, and Flood Management Activities
B. Update on Disadvantaged Community (DAC) Outreach Efforts
C. Discuss IRWM Goals, Objectives, and Targets for the IRWM Plan Update

**Meeting Notes:**

**Welcome and Introductions**

Rosalyn Prickett, RMC Water and Environment (RMC), welcomed the Planning Partners on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the

Coachella Valley Integrated Regional Water Management (IRWM) Program. Ms. Prickett then provided an overview of the agenda and meeting objectives. The group did self-introductions.

**Status of IRWM Planning Activities and Schedule**

Rosalyn Prickett provided an overview of the Coachella Valley IRWM Plan Update, noting that there are five key pieces of the Plan Update: stakeholder outreach (including outreach with the Planning Partners), a Salt and Nutrient Management Technical Evaluation, a DAC Groundwater Quality Evaluation, an Integrated Flood Management Technical Evaluation, and a comprehensive update to the existing IRWM Plan.

Rosalyn Prickett also explained the schedule for the aforementioned pieces of the IRWM Plan Update, noting that stakeholder outreach will occur throughout the two-year process, the Salt and Nutrient Management piece is complete, and the DAC Groundwater Quality Evaluation and the Integrated Flood Management pieces will be complete by the end of 2013. The IRWM Plan Update, which will incorporate information from all of the technical evaluations and stakeholder outreach efforts, will be complete by mid-2014.

Patti Reyes, Coachella Valley Water District (CVWD), added that the Salt and Nutrient Management piece of the IRWM Plan Update (Workplan) has been completed, and the CVRWMG is currently soliciting proposals to develop the Salt and Nutrient Management Plan (SNMP). The loose schedule for this process is:

- Proposals due in July
- July-August: select consultant team
- September: finalize contracting
- October: begin work to prepare the SNMP

**Overview of IRWM Grant Program and Other Grant Opportunities**

Rosalyn Prickett noted that the Coachella Valley IRWM Region submitted an application for Round 2 of Proposition 84 Implementation Grant funding for five high-priority projects. In total, there is approximately $36 million in grant funding available to the Colorado River Funding Area, which is a highly competitive funding area consisting of the Mojave, Imperial, Anza Borrego Desert, and Coachella Valley IRWM regions. The Coachella Valley was awarded $4 million in Round 1 of Proposition 84 funding – there will be approximately $5.24 million available in Round 2, although this is competitive among all four IRWM regions.

Rosalyn Prickett provided an overview of the Coachella Valley's project evaluation and selection process, noting that the Region followed the process outlined in the 2010 IRWM Plan, which included vetting the recommended projects through the Planning Partners in December of 2012.

Rosalyn Prickett then provided an overview of other funding opportunities that are is available to the Region. The California Department of Public Health (CDPH) is currently soliciting proposals across the state. Pre-applications are due on July 8, 2013. CVWD and the other CVRWMG agencies are interested in working with interested parties to submit pre-applications. Rosalyn Prickett also noted that there is a flyer for the California Financing Coordinating Committee (CFCC) in the Planning Partners handout packet – there will be a local funding fair held in Cathedral City on September 26, 2013.

**Update on Coachella Valley IRWM Technical Evaluations**

***Integrated Flood Management***

Rosalyn Prickett provided an overview of this workgroup, noting that the first integrated flood management workgroup was held on January 15th, 2013. The technical team will be

coordinating a second workgroup meeting, and all stakeholders will receive an invitation to attend.

***DAC Groundwater Quality Evaluation***

Leslie Dumas, RMC, provided an overview of the groundwater quality evaluation that is being conducted as part of the IRWM Plan Update.

Ms. Dumas explained the process that was taken for this evaluation, involving seven primary steps. At this point, data indicates that there are existing water quality concerns pertaining to arsenic, fluoride, nitrate, and uranium. Although there is not a current maximum contaminant level (MCL) or CDPH standard for hexavalent chromium, this constituent is being considered due to pending regulations. Information gathered to date demonstrates that membrane separation (reverse osmosis) and ion exchange systems will both be adequate in treating the aforementioned constituents to levels established by the MCLs. Information gathered to date also suggests that point-of-use (POU), point-of-entry (POE), and wellhead treatment systems are likely realistic to address water quality concerns given the location of many of the areas of concern (very far from municipal water service areas). Ms. Dumas explained that these systems are already being installed in the East Valley by Pueblo Unido CDC and other organizations. These systems are both technologically and economically effective in addressing DAC water quality concerns.

Given the technological and economical effectiveness of these systems, one of the recommendations of this study (Technical Evaluation) is that a program for installation of POU/POE/wellhead treatment systems be developed for the entire Coachella Valley.

<u>Questions/Comments</u>

- How does the public health goal recommended for hexavalent chromium relate to the future potential MCL?
    - The two are not necessarily related – it is just a goal and needs substantial input before it becomes a MCL. We are using the public health goal, because it is the only health-related water quality standard we have for hexavalent chromium at this time.
- Where has the Short Term Arsenic Treatment Program (by Pueblo Unido CDC) been implemented?
    - Five mobile home parks (MHPs) have been retrofitted with reverse osmosis systems to treat water to-date. These have all been installed in the eastern Coachella Valley.
- The onsite reverse osmosis systems are fine, but have you considered consolidation with the municipalities? Seems like a better long-term solution.
    - The study analyzed distance to municipal water systems – part of the issue is the remoteness of some of the MHPs is so extreme, that the systems are simply not cost effective (i.e. several millions of dollars for a single pipeline extension).
- One of the major issues that needs to be discussed is, once funding is received from the state (specifically from DWR Proposition 84 funds) – reimbursement makes installation challenging. Pueblo Unido CDC would have installed more systems already if the reimbursement process did not take so long.
    - The DAC Outreach Program will cumulatively address funding issues such as these.

**Update on DAC Outreach and Assistance**

Kathy Caldwell, RMC, provided an overview of the DAC Outreach Program. The purpose of this program is to expand upon previous DAC outreach to target individuals and groups representing DAC issues, and to also engage members of DAC community in order to frame and articulate water management issues facing DACs. She provided an overview of activities that have been completed to date.

Dr. Ryan Sinclair from Loma Linda University (LLU) provided an overview of the process that has been taken to-date, which involved pairing trained promoters (promotoras) from El Sol and Pueblo Unido CDC with students from LLU. All students and promotoras were trained, and the team developed a survey that would be taken out into the field in both the east and west valley. To-date, 214 surveys have been completed.

Kathy Caldwell noted that the next step is to hold workshops: one in the East Valley and one in the West Valley. She welcomed all Planning Partners to attend, and to get the word out! Attendance is welcome at both meetings by all interested parties.

- East Valley Workshop: June 18th, 5-7 p.m. San Jose Community and Learning Center, 69455 Pierce Street, Thermal, CA
- West Valley Workshop: June 20th, 5-7 p.m. DHS Family Resource Center, 14201 Palm Drive, Suite 108, Desert Hot Springs, CA

Daniel Cozad, IPM then explained noted that part of the DAC Outreach Program includes funding for preliminary planning and design/engineering. The idea being that these funds can be used to develop and grow projects into formal projects that can be competitive for other forms of grant funding. Mr. Cozad explained that this process is looking at projects or project concepts that will meet pressing needs on a near-term basis. To-date, the team has found that there is a need for projects that fall in three general categories: water quality (drinking water), wastewater (addressing septic systems), and flooding. Ms. Caldwell explained that part of the handouts include forms for the Planning Partners to fill-out, which will provide additional input to the team as they choose project concepts to move forward for preliminary design and engineering.

Dr. Sinclair then asked the partners (Susie del Toro from El Sol and Rodolfo Piñon from Pueblo Unido CDC) to provide information about their survey experiences with the group. Below is an overview of this discussion, which took place with input from the Planning Partners.

- The survey teams in the West Valley were surprised to hear of some of the issues, particularly involving concerns with drinking water. This was a surprise, because the West Valley water is generally considered very high in quality and surveyors did not expect to hear that people did not trust the water quality in that area.
- The survey teams were highly successful – in part due to their intergenerational nature with surveyors and students of all ages. The diversity of the team really helped with outreach to individuals across the valley.
- In general the survey teams in the East Valley were not surprised to hear the issues: wastewater disposal and treatment, potable (drinkable) water supplies, and flooding issues. In addition, many residents are concerned with unpaved streets.
    - Yes and no. The process will start with available data such as FEMA data, and use locally-collected data to update those maps. The focus, however, will be on mapping disadvantaged communities that face flood-related issues.
- Does the flood analysis include Salton City? Flooding is a huge problem there.
    - Yes. The flood analysis will cover the entire IRWM Region, which includes Salton City.

- Will the workshops be conducted in English and in Spanish? How will this be handled?
    - The team is planning on getting headsets from the Healthy Communities organization. There will be a translator at each meeting to do in-person translation.
- There are concerns with using the headset translation services. There are communities that do not like these and find them isolating.
    - The team spoke with the non-profit partners, who stated that the residents in Coachella Valley are ok with this type of communication.
- What is being done to address big picture issues? Surveys will reveal site-based issues, but I would like to see some holistic planning – for example, holistically addressing flooding in the East Valley.
    - The IRWM Program in conjunction with the DAC Outreach Program is attempting to do this, especially through the integrated flood management study.
- Although the on-site treatment systems are technologically effective, they are still near-term in nature. In general my input is that consolidation (connection to the municipal system) is the most effective long-term solution.
    - The program is considering this – the issue is that especially with grant funding, those projects are simply not cost-effective enough to be competitive in our highly competitive funding area. As development increases in the East Valley, the cost-benefit ratios may change.

**Overview of IRWM Grant Program and Other Grant Opportunities**

Rosalyn Prickett then provided an overview of the IRWM Objectives, included in the 2010 IRWM Plan. Those objectives are the backbone of the IRWM Plan in that they define regional priorities and provide a mechanism for measuring implementation success.

The next step of the IRWM Plan Update will be to go over the existing objectives, which were developed with the Planning Partners, and discuss the following:

- Which objectives are the most important?
- What issues are addressed by the objectives?
- What do we want to accomplish through implementation of the IRWM Plan?

The CVRWMG members then went through and explained each of the 13 objectives included in the 2010 IRWM Plan, which are:

A. Provide reliable water supply for residential and commercial, agricultural community, and tourism needs.

B. Manage groundwater levels to reduce overdraft, manage perched water, and minimize subsidence.

C. Secure reliable imported water supply, including restoring/improving reliability of State Water Project supply and securing other imported water supplies.

D. Maximize local supply opportunities, including water conservation, water recycling and source substitution, and capture and infiltration of runoff.

E. Protect groundwater quality and improve, where feasible.

F. Preserve and improve surface water quality by maintaining integrity of agricultural drainage systems, protecting the quality of natural runoff used for potable supply, and reducing pollution in stormwater runoff.

G. Preserve local environment and restore, where feasible.

H. Manage flood risks, including current acute needs and needs for future development.

I. Optimize conjunctive use of available water resources.

J. Maximize stakeholder involvement and stewardship in water resource management.

K. Address water-related needs of local Native American culture.

L. Address water and sanitation needs of disadvantaged communities, including those in remote areas.

M. Maintain affordability of water.

Planning Partners were each given seven stickers and asked to place their stickers on the objectives to indicate which are most important to them. The result of the exercise is as follows:

A. 8 stickers

B. 8 stickers

C. 9 stickers

D. 9 stickers

E. 13 stickers

F. 1 stickers

G. 5 stickers

H. 6 stickers

I. 3 stickers

J. 11 stickers

K. 5 stickers

L. 13 stickers

M. 10 stickers

<u>Questions/Comments</u>

- Objective E could be modified to address relevant permit requirements for agricultural drains.
- Targets for Objective L need to be modified to address distance form municipal services.
- Objective L could also be modified to reflect that wastewater is not just a local, but a global issue. The Gates Foundation is actively seeking out alternatives to wastewater treatment and disposal.
- Would it be possible to develop some sort of master plan for sewer systems? It would be good to see holistically – if sewers were to be installed across the Valley – where would this occur, and how much would it cost?
- For flooding – more consideration needs to be taken for existing ponds and lagoons. Also, regrading sites can really help move water away from homes.

- Objective J does not include outreach or education. Perhaps this could be included as a target? A lot of the issues, particularly with septic systems involve education on proper use and maintenance.
- What about addressing ownership issues? Many of the East Valley residents are renters – even if you do outreach to these folks, it will not change mobile home park practices. The education needs to be with the owners and the residents.
- It is also important to conduct outreach and education on the regulatory level – so that regulators are aware of the issues.

**Next Steps**

Please mark your calendars:  the next Planning Partners meeting will be held on September 12, 2013!

# Coachella Valley Integrated Regional Water Management Program
# Planning Partners

**Thursday September 12, 2013**
**1:00-3:00 p.m.**

**Coachella Valley Association of Governments**
**Conference Room #119**
**73-710 Fred Waring Drive**
**Palm Desert, CA 92260**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

**Planning Partners**

Margaret Park, Agua-Caliente Band of Cahuilla Indians
Tim Roberts, Salton Community Services District
Jon Rokke, Colorado River Regional Board
Jennifer Henke, Coachella Valley Mosquito and Vector Control District
Anna Aljabiry, DWR
Melissa Sparks, DWR
Evon Willhoff, DWR
Laura Massie, California Rural Legal Assistance
Frank Kopcinski, California Rural Legal Assistance

**CVRWMG**

Sara Toyoda, IWA
Katie Ruark, DWA
David Tate, DWA
Patti Reyes, CVWD
John Soulliere, MSWD
Rosalyn Prickett, RMC
Sally Johnson, RMC
Daniel Cozad, IPM

**Meeting Objectives:**

A. Keep Planning Partners Up-to-Date on the Technical Evaluations
B. Update on Disadvantaged Community (DAC) Outreach Program
C. Discuss Revisions to Existing IRWM Plan Chapters: Region Description, Issues & Needs, and Project Selection
D. Discuss New IRWM Plan Chapters: Tribal Water Resources and Disadvantaged Communities

**Meeting Notes:**

**Welcome and Introductions**

Rosalyn Prickett, RMC Water and Environment (RMC), welcomed the Planning Partners on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the Coachella Valley Integrated Regional Water Management (IRWM) Program. Ms. Prickett then provided an overview of the agenda and meeting objectives. The group did self-introductions.

**Status of IRWM Planning Activities and Schedule**

***Update from DWR Representatives***

Anna Aljabiry, DWR, announced she was stepping down from her position at DWR and this would be her last Planning Partners meeting. She introduced Melissa Sparks and Evon Willhoff as the CVIRWM Region's new DWR representatives for grant administration. Ms. Sparks will be responsible for the Disadvantaged Communities (DAC) program, while Ms. Willhoff will be responsible for Implementation grants. Melissa Sparks provided a handout with the IRWM grant solicitation timelines, a summary of the proposed water bonds (Senate Bill 42 and Assembly Bill 1331), an overview of the draft Appendix H, Plan Review Process for the 2012 IRWM Grant Program Guidelines, and dates for the Round 2 Strategic Plan Workshops. She noted that the draft Appendix H was open for public comment until October 18, 2013, with public workshops being held in Sacramento on October 7, 2013, and Ventura on October 9, 2013. Appendix H is expected to be adopted by the end of 2013, with Plan review beginning in January 2014.

Rosalyn Prickett asked if DWR could provide an update on the IRWM grant schedule. Evon Willhoff informed the group that senior supervisor review of the Proposition 84 Round 2 Implementation Grants was wrapping up, and public review of grant awards would be available by the end of the month.

The Planning Partners and CVRWMG informed DWR that there were problems with the format of the previous Strategic Plan Workshop, and asked if the format would be different for the Round 2 workshops. Ms. Sparks informed the group that there would likely be changes to the format of the workshop for this round. Patti Reyes, Coachella Valley Water District (CVWD) and Laura Massie, California Rural Legal Assistance (CRLA) both expressed that the table-wide statements used in the previous format did not capture all of the issues, and that the resulting conversation tended to lose unique views and issues that were not obvious.

Ms. Aljabiry provided a handout on new environmental education materials that had become available. These materials are designed for classrooms with material geared towards students from kindergarten through twelfth grade (K-12), with a water focus. Materials can be ordered in "classroom sets" which contain 30 student copies and 1 teacher copy. Anyone can order these free materials by visiting http://www.water.ca.gove/education/wffcatalog.cfm. Questions regarding the education program should be directed to:

Michelle Robinson
Water Education Specialist
Public Affairs Office
Department of Water Resources
Office 916-653-9892
Fax: 916-653-3310
Michelle.Robinson@water.ca.gov

Ms. Prickett provided an overview of the key activities for the Coachella Valley IRWM Plan Update, and the timeline for completion, noting that the DAC Water Quality Evaluation, and Salt and Nutrient Planning were almost finished, while the Integrated Flood Management and DAC Outreach Program were in the final stages. The Groundwater Monitoring is underway.

Questions/Comments

- Is the groundwater monitoring program only looking at groundwater elevations?
    - No, it is also looking at water quality and other water management parameters.

**Update on Coachella Valley IRWM Technical Evaluations**

***Integrated Flood Management***

Rosalyn Prickett provided an overview of the Integrated Flood Management Workgroup, noting that an integrated flood management workshop will be held on Wednesday, September 18th, 2013. She explained the purpose of Integrated Flood Management is to assess the opportunities for utilizing flood water a resource. One of the ways the study is doing this to map flood areas and overlay this on maps of soil permeability to see if there are naturally occurring flood areas that could be suitable for groundwater recharge basins. The results of these efforts will be presented at the September 18th workshop. Ms. Prickett encouraged the Planning Partners and DAC representatives to attend. The workshop will be held at the Coachella Valley Water District (75-515 Hovley Lane East, Palm Desert, CA 92211) from 10:00 am until noon.

***DAC Groundwater Quality Evaluation***

Rosalyn Prickett provided an overview of the Coachella Valley-wide Groundwater Monitoring Plan, which builds on the DAC Water Quality Evaluation. The DAC Water Quality Evaluation identified maximum contaminant level (MCL or drinking water standards) exceedances and mapped the location of DACs as they pertain to exceedances, but the overall Groundwater Monitoring Plan will extend this mapping effort across the entire Coachella Valley. This effort will also incorporate recommendations from the Coachella Valley Water Management Management Plan and the Mission Creek-Garnet Hills Sub-Basin Water Management Plan.

Patti Reyes added that this effort will establish the information gaps and issues for future IRWM projects to address, and set up projects that monitor groundwater. Ms. Prickett stated that more recommendations would be presented at the November Public Workshop (scheduled for November 6th, 2013).

Questions/Comments

- There should be an extended conversation on where additional wells are needed.
- Does the Groundwater Monitoring Program include the Salton Community Services District (SCSD)?
    - No, SCSD does not use groundwater, so this does not apply.
- Groundwater monitoring program will consolidate information so the Region will be able to determine what information already exists, what information is missing, and will help identify the roadblocks to achieving what the Region wants.
- The Groundwater Monitoring Program should include salts when considering constituents of concern.
- Does the Program look at funding for groundwater data or for groundwater treatment?
    - Only groundwater data.
- Don't see any biological indicators in the monitoring criteria/constituents. Is this because the groundwater is too deep for septic system contamination?
    - Yes. The only biological constituent that might be present is nitrate.

**Update on DAC Outreach and Assistance**

Rosalyn Prickett provided an overview of the DAC Outreach Program. The purpose of this program is to expand upon previous DAC outreach to target individuals and groups representing DAC issues, and to also engage members of DAC community in order to frame and articulate water management issues facing DACs. She provided a timeline for the DAC Outreach Program components, and noted that the Program will be complete by the end of 2013.

Daniel Cozad, IPM presented the DAC Outreach Program components.

***Presentation of Surveying Effort Results***

Mr. Cozad explained the DAC surveys conducted by Loma Linda University. This effort will result in refined maps of DAC locations and issues, and a formal report on the perceived water resources issues and needs.

Questions/Comments

- Will the report be circulated?
    - We are still working on the final report, but will give a presentation during November 6th.

Mr. Cozad then explained the DAC projects. The goal of this process was to develop projects based on issues and needs defined by Planning Partners and DAC stakeholders. He explained the process used to identify issues, and the four projects that were selected. The Outreach Program met with DACs who were aware of their water issues, and DACs that were not aware of water issues they may have. For the most part, this outreach reaffirmed the issues previously identified by the Region. The four DAC projects that were selected are:

- Design and engineering for faulty or under-sized septic systems
- Mapping of problematic DAC systems within proximity to existing infrastructure
- Bilingual outreach and educational materials for residents
- Reverse osmosis systems to treat water from onsite groundwater wells

Patti Reyes asked Mr. Cozad to please explain why there is a focus on septic issues. Mr. Cozad explained that septic was considered one of the most important issues (self-reported by stakeholders) and is also the most complex issue to fix. Ms. Reyes added further clarification that the East Valley has very limited wastewater infrastructure, and such infrastructure is too expensive to fund. Sewer needs in the East Valley are as important as water needs, and many stakeholders ranked wastewater needs as their most important issue.

There will be a final DAC Workshop on November 6th, from 10:00 am – noon, at the Coachella Valley Water District (75-515 Hovley Lane East, Palm Desert, CA 92211), immediately prior to the Public Workshop on the Coachella Valley IRWM Plan Update Meeting (1:00-3:00 pm). The DAC Workshop will present all final findings of the DAC Outreach Program, and the draft DAC Outreach Report.

Questions/Comments:

- Which 4 mobile home parks were selected for the Septic project?
    - Pueblo Unido was used to select the mobile home parks, they are all located in Thermal and include: Don Jose, Cisneros, Valenzuela, and Gutierrez Mobile Home Parks.
- The bilingual outreach and education materials are designed to close information gaps determined during the outreach process. If residents have a problem, the program can tell residents how to solve the problem. These materials, therefore work to empower people to solve their own problems. The program will not solve the problems themselves. In part this is to respect other agencies that might be responsible for managing the potential problem.
- Is IVAN included? IVAN is a central database of East Valley residents to report issues. Issues get reported to IVAN, and then IVAN filters these reports and informs the appropriate agency. Information about IVAN is included in the outreach and education materials.
    - Jon Rokke, Colorado River Regional Board is the individual who receives the IVAN reports and sends them to the appropriate agency. He also follows up

on the reports he sends out to make sure they are getting addressed. He does not have any objections to expanding this resource to the entire Coachella Valley.

- IVAN allows people to report via phone, text message, or website. Many different types of reports are submitted. Mr. Rokke said some reports are not appropriate for any agency, but are often left on the site, which acts as a community board.
- *Ms. Reyes said IVAN will be addressed in the report, but will delegate to El Sol to work with Mr. Rokke to expand IVAN*
- See-Click-Fix is a mobile app that allows people who see a problem to take a picture and add a short description of the problem. The photo, message, and location is automatically sent to a responsible party (based on location) and has gotten quick responses. Mobile devices are the future for easily reporting issues.

**IRWM Plan Update Components**

Rosalyn Prickett then provided an overview of the IRWM Plan Update. She presented the proposed changes to three chapters: Region Description, Issues and Needs, and Project Evaluation and Prioritization. She presented two proposed new chapters: Tribal Water Resources and Disadvantaged Communities.

Questions/Comments

- What is the timeline for the draft IRWM Plan?
  - Feedback solicited from Planning Partners and RWMG at meetings will be used to write the chapters. The draft Plan is scheduled to be available for public review starting on November 4, 2013. There will be a 2 month public comment period to accommodate schedules during the holidays. The comment period will close at the end of December. Comments will be incorporated in early 2014, with the final plan likely to be released in mid-February, and adopted by the RWMG agencies' governing boards by the end of March. While the final release schedule has not been finalized; the CVRWMG's grant agreements require that the Plan be finalized and adopted by the end of March, 2014.
- Will discussion of the proposed Chrome-6 MCL be part of the Plan Update?
  - Yes.

***Region Description***

Rosalyn Prickett reviewed the updated Region Description chapter. She noted that the chapter was updated for consistency with current planning documents, including those released after the 2010 IRWM Plan was adopted. Key changes include improving discussion of the differences between the East Valley and West Valley, expanding discussion of groundwater basins, non-potable water, and natural communities, and updating with new stormwater permit information.

Questions/Comments

- Will the differences between the East Valley and the West Valley include demographics, water quality, and other factors?
  - The East and West Valley differences were explored in the outreach survey – the Plan will include information gathered from the survey.
- The Regional Board's Onsite Wastewater Treatment Policy will be updated next week (Thursday, September 19). This will change the way septic systems in the Valley are permitted.

***Issues and Needs***

Rosalyn Prickett presented the updated Issues and Needs chapter. The chapter was updated to be consistent with current plans and issues identified by stakeholders. Key changes in the chapter include a lower project water demand for 2030, expanded discussion of water supplies, stormwater capture, water quality, and flooding. There were no changes to Table 3-1 in the Plan, Summary of Significant Water Management Issues in Coachella Valley. Planning Partners were asked to confirm that this table should remain the same.

Questions/Comments

- For Issue #5, Groundwater Quality – Change "Several small private water systems in mobile home parks…" to "Many small private water systems in mobile home parks…" The use of the word "several" diminishes the problem and doesn't reflect the severity of the issue.
    - *May cross-reference the actual number of systems exceeding arsenic MCL*
- For Issue #12, Affordability of Water – if the Chrome 6 MCL is adopted, costs will go up because of the added costs of treatment options to address the MCL
    - *May add statement at end of first paragraph to acknowledge regulatory changes as a cost related toe continued overdraft*
- Were the population projections based on RHNA (Regional Housing Needs Assessment)?
    - Population projections were based on the projections from the Urban Water Management Plans, which are based on the Riverside County population projections.
- RHNA projects how much housing will be needed to accommodate the projected population, should link the water needs planning and the housing needs planning.
    - The population projections used in the UWMPs and in the Plan are more conservative than the RHNA projections because they are not the revised down version of the projections. Therefore, we are planning for the "worst-case" population projections, which is more conservative.
- The SCAG Region RHNA is due in October.
    - *We will ask CVAG about the RHNA numbers in October.*
    - The planning horizon is different for the different plans. Even with a dip in projected populations on a shorter timescale, it is expected that in the long-term, population projections will go back up.
- We don't want to have too much housing and not enough water to serve residents.
    - With the projections currently being used for the UWMPs and the IRWM Plan, we are planning for more water than the planned housing. It takes a long time to plan, fund, and build water infrastructure, as well as to receive the actual water. It is better to over-plan for water.
- There are mechanisms already in place that force communication between water and housing/land use planners.
- Water use has dropped through conservation efforts and other factors, and water demand projections have been adjusted down accordingly.
- Reminder that everything in the Plan must be publicly adopted.

***Project Evaluation and Prioritization***

Rosalyn Prickett presented the updated Project Evaluation and Prioritization chapter. Changes to this chapter include highlighting how IRWM efforts address priorities, describing how the

project evaluation process was used during recent grant application cycle, the addition of a new criterion to the project scoring process: “Maximizes stakeholder involvement and stewardship in water resources management”, addition of a interview for project selection for grant applications, and the removal of Appendix B (Project List).

Questions/Comments

- To clarify, there are State Requirements and there are Plan Requirements. Plan requirements incorporate state requirements, but also have other requirements. Projects are scored based on the Plan requirements.
- Regarding Appendix B (Project List), people won’t go to the website to look at the project list, so a project list should be included in the Plan. However, not all projects are valuable, so we should consider only including high-scoring projects as an example.
- DWR reaffirmed that a printed list of projects is required for grant applications. They cannot accept a link because that is external data. Additionally, most reviewers look at the hard copy of the application. It would be acceptable to include a link in the Plan, but not in grant applications. Applications are competitive, but the Plan Review Process is not, so if the Plan reviewer thinks it is necessary, they will probably ask for a hardcopy of the project list.
- In what format is the Plan distributed?
    - Electronic (pdf).
- Suggest writing into the Plan that the official Project List is on the database, and then date Appendix B as “Project List as of DATE”.
- Is there a button that can be added to the Project Database that would allow a visitor to easily export the list of projects?
    - No, it would require users to log in to the database.

The Planning Partners decided that Appendix B should remain in the Plan.

***Tribal Water Resources***

Rosalyn Prickett presented a new chapter in the Plan, Tribal Water Resources. This chapter was developed in response to stakeholder feedback and with significant input from the Tribes. Key content includes description of the Tribes, their water resource concerns, their water quality monitoring efforts, and tribal participation in water resources planning.

Questions/Comments

- Does the chapter contain geographic information about the Tribal lands?
    - Yes, there is also a map of the Region showing the location of tribal lands.
- What research, other than meeting with Tribes and receiving their feedback, was or will be conducted for developing this chapter? The U.S. EPA? The Days Desert Sun article on the arsenic problem at a mobile home park on Torres-Martinez land?
    - RMC consulted Bureau of Indian Affairs, and any electronic sources they could find. Patti Reyes sent the Days Desert Sun article to Ms. Prickett.

***Disadvantaged Communities***

Rosalyn Prickett presented a new chapter in the Plan, Disadvantaged Communities. This chapter was developed in response to stakeholder feedback. It presents the results of the DAC Outreach Program, and key content includes the history of DAC participation in the IRWM Program, the DAC Outreach Program, DAC characterization and mapping, DAC project Development, and process recommendations for DAC participation in the IRWM program.

Questions/Comments

All questions and comments were related to the Process Recommendations portion of the chapter.

- DWR stated that Process Recommendations should include recommendations for future funding for DACs
- Would the funding be for information gathering or project development?
    - Should create a guideline for other regions in the state for improving DAC involvement. Can go a step further to work on the projects that were identified during the process.
    - Must meet DWR recommendations and regional recommendations to move forward on a project
        - Project development for the DAC Outreach Program is meant to provide a tool to DWR to show how to move forward on a DAC project.
    - There is no agreement between DWR and Grantees to fund projects identified during the process. They will still need to go through the project selection process and grant application process that any other IRWM project is subject to.
- In the previous IRWM grant cycle, the CVIRWM Program held a project database workshop with DACs to explain how to submit projects successfully. The CVRWMG also entered DAC projects into the database for those DAC project proponents who needed help.

**Next Steps**

The CVRWMG is conducting direct outreach to stakeholder groups (e.g., golf course superintendent association, builders associations, etc.). If anyone knows of a group that would be appropriate for direct outreach, please email Rosalyn Prickett (rprickett@rmcwater.com).

Please mark your calendars for upcoming workshops and meetings:

- Integrated Flood Management Workshop: September 18, 10:00 am – noon (at CVWD)
- Public Review for 2014 IRWM Plan: November 4 – December 31, 2013
- DAC Workshop: November 6, 10:00 am – noon (at CVWD)*
- Public Workshop on IRWM Plan Update: November 6, 1:00 – 3:00 pm (at CVWD)*

*Lunch will be provided for those attending the DAC workshop and staying for the Public Workshop on the IRWM Plan Update. Please RSVP to Crystal Mohr: cmohr@rmcwater.com, 858-875-7421.

# Coachella Valley Integrated Regional Water Management Program
# Planning Partners

**Thursday March 13, 2014**
**1:00-3:00 p.m.**

**Coachella Valley Association of Governments**
**Conference Room #115**
**73-710 Fred Waring Drive**
**Palm Desert, CA 92260**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

**Planning Partners**

Margaret Park, Agua-Caliente Band of Cahuilla Indians
Sergio Carranza, Pueblo Unido CDC
Susie del Toro, El Sol Neighborhood Educational Center
Jon Rokke, Colorado River Regional Water Quality Control Board
Jennifer Henke, Coachella Valley Mosquito and Vector Control District
Evon Willhoff, DWR
Laura Massie, California Rural Legal Assistance
Michele Hasson, Leadership Counsel
Joe Glowitz, Valley Sanitary District
Monica Telles, Economic Development Agency
Bobby Melkesian, Desert Empire Builders
Mike Gialdini, Supervisor Benoit
Roland Ferrero, Torres-Martinez Desert Cahuilla Indians
Darcy Kuenzi, Riverside County Flood Control and Water Control District

**CVRWMG**

Sara Toyoda, IWA
Katie Ruark, DWA
Mark Krause, DWA
Berlinda Blackburn, CWA
Mitch Nieman, City of Coachella
Patti Reyes, CVWD
John Soulliere, MSWD
Rosalyn Prickett, RMC
Crystal Mohr, RMC
Sally Johnson, RMC

**Meeting Objectives:**

A. Discuss Proposition 84 Grant Awards
B. Overview of Disadvantaged Community (DAC) Outreach Program
C. Discuss IRWM Plan Comments and Revisions
D. Provide Update of Current IRWM Projects

**Meeting Notes:**

**Welcome and Introductions**

Rosalyn Prickett, RMC Water and Environment (RMC), welcomed the Planning Partners on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the Coachella Valley Integrated Regional Water Management (IRWM) Program. Ms. Prickett then provided an overview of the agenda and meeting objectives. The group did self-introductions.

**Status of IRWM Planning Activities and Schedule**

Ms. Prickett reviewed the schedule for the 2014 IRWM Plan, and noted that the IRWM Plan Update was recently completed and has been adopted by Coachella Valley Water District (CVWD) and Coachella Water Authority (CWA).

***Round 1 Grant Projects – Award Redistribution***

Ms. Prickett reminded the Planning Partners of the Region's success under the Proposition 84 Round 1 Implementation Grant (Round 1), which awarded $4 million to four projects in the Region. Two of those projects were septic-to-sewer conversion projects in disadvantaged communities (DACs) that were sponsored by Mission Springs Water District (MSWD) and Cathedral City. Due to unanticipated costs, the Cathedral City project is no longer able to move forward and the Coachella Valley IRWM Region needs to decide how to redistribute the funding originally awarded to the Cathedral City project. The California Department of Water Resources (DWR), who administers the statewide Proposition 84 IRWM Program and its associated grants, has told the CVRWMG that replacement projects must provide similar benefits as the Cathedral City project and meet basic IRWM requirements. The Cathedral City project would have offset 132 Equivalent Dwelling Units (EDUs) in a DAC with septic conversion in the Perez Road area, which was recommended for septic conversion by the Regional Water Quality Control Board (Regional Board). Benefits include groundwater quality protection and improvement, addressing water and wastewater needs of a DAC, improving system reliability, and increasing quantity of reclaimed water. Patti Reyes, Coachella Valley Water District (CVWD), explained that had the CVRWMG better-understood potential costs of the Cathedral City project when developing the Round 1 grant application, the excess costs that would have been incurred during project implementation could have been built into the grant request. Ms. Reyes emphasized the CVRWMG's disappointment that the project did not move forward as scheduled, but said that they hoped to improve project scoping in the future and reapply for future grant funding.

There is $1.3 million available for redistribution from the Cathedral City project. The CVRWMG has two projects that are potential candidates to receive this funding, but would like the Planning Partners to provide input on the two projects and on how they would like to see the money redistributed. Below is an overview of the two potential projects:

*Project 1: MSWD Area J-1 Groundwater Quality Protection Project*

MSWD is the project sponsor for the Area J-1 Groundwater Quality Protection Project, located approximately between Hacienda Dr, Mountain View Road, Via Domingo, and Calle Amapola in Desert Hot Springs. Area J-1 is defined as part of an Assessment District within the MSWD service area; this area currently has failing septic systems. The project would offset up to 306 EDUs in a DAC reliant on the local groundwater basin for its economy (Desert Hot Springs), and protects drinking water supplies. Benefits from the Area J-1 Groundwater Quality Protection Project include protection and improvement of groundwater quality, addressing water and sanitation needs of a DAC, increasing quantity of reclaimed water, and compliance with California State Law.

John Soulliere, MSWD, described the project to the Planning Partners. Mr. Soulliere emphasized that there is an urgency to commit funds to the project, because the funding

match is being met through an Assessment District. Any funds not committed to the project by July 2014 will no longer be available, meaning that MSWD would lose the opportunity to use that money for a funding match, and would be required to pass a new Assessment District, which is time-consuming, expensive, and uncertain. The project would require between $4,513 and $5,285 grant funding per EDU to implement.

*Project 2: Oasis Gardens Groundwater Quality Protection Project*

The Oasis Gardens project would offset up to 157 EDUs in a severely DAC mobile home park in the Eastern Coachella Valley (Oasis) located over the perched aquifer through conversion from septic to sewer. Diversion of flows from this DAC would protect surface water quality by reducing the chance for flows from septic systems to enter agricultural storm drains and the Salton Sea. Benefits from this project include protection and improvement of groundwater quality, addressing water and sanitation needs of a DAC, increasing quantity of reclaimed water, and providing onsite wastewater services to a severely DAC. The project would require $4,800 grant funding per EDU to implement.

Ms. Reyes explained to the group that that Bobby Melkesian, Desert Empire Builders, would cover all private costs, including all onsite improvements. Mr. Melkesian built a second phase of the project to provide housing for Duroville residents, and CVWD was a project sponsor for a USDA grant to extend sewer to the area. During this sewer extension, CVWD paid to upsize the pipe to accommodate future connection capacity. Within the CVWD service area, connection fees in these types of areas are used to reimburse CVWD for upsizing the pipe. Therefore, the grant money being requested would cover the money required to upsize the CVWD sewer pipelines, and thereby fund public infrastructure. Ms. Reyes also noted that onside costs have been a barrier to implementation of DAC projects in the past, and that it is highly notable that Mr. Melkesian is agreeing to pay all of the onsite costs.

Mr. Melkesian presented his project to the group. He explained that the Oasis Gardens Mobile Home Park is currently on septic systems, but that due to percolation issues, the leach pits are beginning to fail. Oasis Gardens was built 11 years ago, and is at 100% capacity, primarily providing housing to low income farmworkers. When the nearby Mountain View Estates Park (Phase 2 project mentioned by Ms. Reyes) was built, the County of Riverside teamed with the USDA and CVWD to construct a sewer line adjacent to the Oasis Gardens Mobile Home Park, with the intent to eventually connect Oasis Gardens to the sewer system. There are 17 systems and the mains and tees are in place already, costing $350,000. To demolish the existing tanks, it is estimated to cost $170,000. Mr. Melkesian told the group that the permits are in place, there is an immediate need, he is the owner, developer, and contractor so there would be no issues with implementing the project, and the connection fees are half the cost of the project. The grant would cover the cost of the connection fees, which would otherwise potentially be borne by the onsite residents.

<u>Questions/Comments</u>

- For the MSWD project, how many areas of the Assessment District have already been constructed?
    - Approximately $40 million of the $69 million from the Assessment District has been committed to projects that have been completed or are underway
    - The areas in question are mostly low-income housing
    - In 2007-2008, MSWD had been very successful getting federal funding through earmarks, but those opportunities are mostly gone. Future money would have to come from a future Assessment District.

- Will the Round 2 project (D-2 Conversion Project) be completed in time to meet the Assessment District deadline?
    - Yes.
- How much IRWM grant funding did the Round 2 project (Sub-area D-2) receive?
    - $1.85 million
- Is MSWD's board moving forward on leveraging another Assessment District?
    - MSWD is currently planning a survey to determine community interest in a future Assessment District. Public opinion on the subject generally depends heavily on the economy.
- Construction bids came in lower than anticipated for the Round 1 MSWD project, does that mean that more EDUs will be able to be connected in Round 2?
    - The Round 2 budget used updated funds from the Round 1 experience; however, if construction costs are lower than anticipated, more EDUs could potentially be connected.
- Can the project make use of a partial grant? Or is it not feasible if MSWD receives less than the full $1.3 million?
    - There is a threshold where it doesn't make sense to move forward with the project. MSWD doesn't consider the project worthwhile with less than $1 million in grant funding.
- Can the Assessment District make up any overages if the project turns out to be more expensive than anticipated?
    - MSWD would absorb any costs above what is budgeted, but due to recent bid estimates, MSWD believes that the project budget as presented to the group is accurate.
- Has the Regional Board been involved with potential failures at the Oasis Gardens Mobile Home Park?
    - DACs are often unable to afford all of the repairs necessary, and the Regional Board is concerned that issuing citations in such communities would result in homelessness. The Regional Board generally only steps in when violations occur, not when they are about to occur – that is why they have not yet been involved.
- The Region's DAC Outreach Project, a sister program to the Coachella Valley IRWM Program, did an analysis of connection opportunities for DACs, and Oasis Gardens is included in that report.
- When Supervisor Williams asked local developers to step up and help out DACs in the region, Mr. Melkesian was the only local developer that stepped forward to provide housing support for farmworkers. Supervisor Benoit's office supports the Oasis Gardens project.
- Will all of MSWD's sites be able to afford the connection fees for the project?
    - Yes, there is both an ordinance in place and a loan program available.
    - It is a condition of the grant that to count as a benefit, an EDU must be connected to the system.
- What is the issue with splitting the money, from the state's perspective?
    - The Cathedral City project is already in the signed grant contract. The state can adjust the contract to do what the Region wants to do. In other words, the Region could choose to fund as many or as few projects as it would like, provided that those projects provide the same benefits as the Cathedral City project.

- The merits of the two projects seem equitable.
- The costs presented in the table don't seem to add up for MSWD. The total cost should be the sum of the grant funding and funding match, but they are not.
    - The extra costs will be absorbed by MSWD.
- There was an indication that the J-1 area septic tanks are failing. How many are failing?
    - Approximately 10% of the septic systems in Area J-1 are failing.
- How many of the leach pits in the Oasis Gardens project are functioning properly, and how many of them are on the verge of failing?
    - Approximately half are on the verge of failing
- Will abating some (say, 6) of the leach pits help the problem at Oasis Gardens?
    - This could help the issue, but the preference would be to connect the entire system at one time.
- Can MSWD help the group understand their $1 million threshold?
    - The way that the J-1 system was established was due to elevations and other engineering considerations; MSWD will need to confer with engineering staff to determine if it would be possible to reduce the size (and EDUs) of the J-1 system.
- Is it possible to reduce the size of the MSWD Area J-1 project, and give more money to Oasis Gardens?
    - Could scale the project some, but it is already scaled down substantially. Would need to consult MSWD engineers for an answer on how much scaling is possible and feasible.
- The East Valley perceives MSWD as getting a lot of money from the IRWM grants. The Oasis Gardens project represents a developer trying to do the right thing in the East Valley to address serious issues.
- Is the situation time-sensitive for the Oasis Gardens project?
    - If we wait to do the project, the situation will get worse. If the systems start failing there is a concern that regulators will start to get involved.
- Will the state be able to reimburse for the Oasis Gardens project?
    - Under the Round 1 grant opportunity, yes. The funding match funds (upsizing the sewer infrastructure) were spent in 2013, which coincides with the Round 1 grant contract.
- There are a lot of projects in the IRWM database; due to the serious regional need for projects, especially in the East Valley, it makes sense to try and spread the grant funding around the Coachella Valley as much as possible.
- Can we do a site visit to Oasis Gardens to verify how many and which leach fields represent an immediate need?
    - If we do that, we would need to do the same for Area J-1 to be fair and consistent.
- If the MSWD project is not selected, the Assessment District funds will expire and MSWD will have to acquire more matching funds. If the Oasis Gardens project is not selected, it is a lost opportunity.
- We want to be able to leverage the investments that have already been made.
- Aside from the expiration of assessment district funds, are there any other impediments to the MSWD project?
    - No, the project is ready to go

- What are the long-term benefits for the region and its program? What sets us up well in DWR's mind?
    - The State is unable to weigh in on this. Direction from DWR is that the region must decide what to do. There is money still left in the Funding Area for future rounds of funding, and there is a possible future water bond that may be on the November ballot that would have similar funding opportunities.
- There are other sources of funding that could be leveraged to achieve the goals of the Oasis Gardens project. For example, even though St. Anthony's Mobile Home Park has the lowest rents in the region, it is still able to pay off loans it received to fund important infrastructure improvements. The Oasis Gardens project should consider loan funding.
    - Loan terms are more favorable for non-profits than for private entities, so a loan for the Oasis Gardens project would likely be more expensive than for the St. Anthony's Mobile Home Park, which is owned by a non-profit organization.

The CVRWMG asked the Planning Partners to provide input on how to distribute the funding between the two projects. The group indicated a preference to split the money in some fashion between the Area J-1 project and the Oasis Gardens project. The CVRWMG will meet to make a decision.

**Round 2 Grant Funding Success!**

Ms. Prickett informed the group that the Proposition 84 Round 2 Implementation grant awards had been finalized in February, and the Region had been awarded the full $5.24 million it requested to fund five projects. Project Sponsors must provide the requested materials for the grant contract to CVWD by March 21, 2014. Evon Willhoff, DWR, informed the group that the Round 2 contract will likely be signed and executed by the end of June.

**Round 3 Schedule and Next Steps**

Ms. Prickett reviewed the remaining Proposition 84 Implementation Grant funding available to the Colorado River Funding Area. There is $16.7 million remaining. The recently passed Senate Bill 104 (SB104) directed DWR to release all remaining Proposition 84 funding ($472.5 million). Ms. Prickett explained that of that $472.5 million, $21.8 million will fund regions whose Round 2 funding award increased between the draft and final awards. $200 million is for "expedited" drought relief, and $250.7 million will be allocated to non-expedited IRWM funding. There is a possible expedited funding cycle due this summer for drought relief, and a possible consolidated Round 3 or Round 4 cycle in 2015/2016. Ms. Prickett told the group that nothing had been finalized by DWR at this point – the expedited drought relief funding is speculative at this point.

Ms. Willhoff provided an update on what DWR has been doing in response to SB104. DWR is still trying to figure out the best approach to meet the requirements of SB104, the IRWM program, and meet the governor's directive. DWR has been developing different scenarios on how to appropriate the funding opportunities, and these scenarios are on the desk of the director of DWR. DWR is also trying to incorporate the comments from the recent Process Improvement Workshops into the IRWM guidelines as quickly and effectively as possible. DWR is trying to remain fair regarding how the funding will be distributed or potentially allocated. It is likely that projects that receive expedited funding will be those that are ready to start. SB104 limits the types of projects that can receive the expedited funding. In the best case, Regions will receive guidance next week, and two weeks in the worst case.

SB104 drought relief projects are those that "provide immediate regional drought preparedness, increase local water supply reliability and the delivery of safe drinking water, assist water suppliers and regions to implement conservation programs and measures that are not locally cost-effective, or reduce water quality conflicts or ecosystem conflicts created by the drought."

The project selection process will begin as soon as DWR has provided guidance to the region. As soon as anything is known, the Planning Partners will be notified via email. In the meantime, the group is strongly encouraged to enter projects that they believe qualify as drought relief projects into the project database now. The project database is always open, and has been updated to include SB104 language and links to the legislation. If stakeholders have questions, please contact Crystal Mohr (cmohr@rmcwater.com).

Questions/Comments

- Will the expedited funding be regionally allocated?
    - DWR is still trying to determine the best way to allocate the funding, or if it will be allocated by funding area or region at all.
- The Region may want to shift their focus from groundwater quality projects (such as those funded in previous rounds) to water supply projects.
- SB103 (passed alongside SB104) allocates an additional $19 million for projects that reduce greenhouse gases and water and energy use. This program is supposed to begin on July 1, 2014. It is a separate program from IRWM but may be administered through the IRWM branch of DWR.
- Does DWR have any guidance on what is “locally cost-effective”?
    - Not yet.
    - An example provided by DWR has been leak detection systems for purposes of water conservation.
- SB104 expedited projects must still be IRWM projects (multi-benefit projects).

**Overview of DAC Outreach and Assistance**

The CVRWMG conducted a DAC Outreach Program as a sister program to the IRWM Program. That program has been completed, and a final report submitted to DWR.

***DAC Outreach Demonstration Program Report***

Ms. Willhoff informed the group that Melissa Sparks, DWR representative for the Coachella Valley DAC Outreach Demonstration Program, presented on the report to DWR, and it was very well received. Crystal Mohr, RMC, presented the final DAC Outreach Demonstration Program Report. The Report was included as Volume II to the 2014 Coachella Valley IRWM Program, and includes all the DAC efforts conducted during the Outreach Program and the update of the IRWM Plan.

***Next Steps***

Ms. Mohr explained that the Region is not done with its DAC efforts, and will continue to advocate for improvements to the grant process for DACs, provide technical support to DACs for IRWM projects and processes, and focus on project types identified by DACs as being most important (septic-to-sewer conversion, onsite water and wastewater treatment, and connection to municipal water system)

**IRWM Plan Update**

Ms. Mohr presented the final IRWM Plan, and discussed what comments were received during the Public Comment Period and how those comments were addressed. The 2014 Coachella Valley IRWM Plan was broken into two volumes, the first being the Plan chapters and their appendices, the second being the DAC Outreach Program and DAC-related appendices. The Plan has been adopted by two CVRWMG agencies at the time of the meeting, and is scheduled to be adopted by the end of March. The group was reminded that the Plan was finalized and

undergoing adoption because of the March 31st deadline from the Planning Grant that funded the Plan Update.

Major comments included clarifying and articulating DAC issues and needs, improve explanation of water quality issues, acknowledge conflicts between residents and landowners, improve measurements of Plan and Program performance, incorporate technical study and DAC recommendations, improve discussion of water supply and demand, and be more consistent with terminology within the industry.

Ms. Mohr reviewed the general and major changes made to the Plan in response to these comments. Changes included cross-referencing throughout the Plan to carry information throughout the Plan where relevant, clarification over points of confusion as indicated by comments received, expanded discussion and clarification of water supplies and demand, increased discussion of data and additional targets, improved discussion of the project selection and scoring process and its purpose, more comprehensive incorporation of DAC information from the items in Volume II, updated information from studies and data that were obtained or finalized after the Public Draft had been released, and an expansion of the discussion of issues and needs. The Region has also committed to continuing to hold Planning Partner meetings, and incorporated more details on and commitments to coordination and communication efforts.

***Next Steps***

Planning Partners are encouraged to adopt the IRWM Plan. There are a few final deliverables outstanding. These include a Public Outreach document, Progress Report on the IRWM Program, development of DAC projects, and development of groundwater projects.

Questions/Comments

- Planning Partners are encouraged to adopt the Plan
- Is a redline copy of the Plan available?
    - Because there were multiple rounds of revisions after the public comment period closed, there is not a red line version of the Plan that shows all the changes made between the Public Draft and the Final version. All comments and how they were addressed are included as Appendix VI-F in the Public Comment Matrix. Stakeholders are encouraged to contact the CVRWMG if they would like to go over the changes together, the CVRWMG is happy to accommodate such requests.
- Water supplies in the Region are complex. We went through many iterations of the explanation included in the final version of the Plan, and tried to explain in detail what everything meant, the source of the information, and explain potentially confusing aspects of the water supplies. If anyone has questions about it, please contact the CVRWMG, they will be happy to answer any questions you may have.

**Final Announcements**

The next Planning Partners meeting is anticipated to be held in June. Depending on DWR's decision on how to move forward with the expedited funding round, there may be a Planning Partners meeting in May. Please pay attention to emails from the CVRWMG and RMC regarding this meeting and grant information.

Questions/Comments

- Darcy Kuenzi was introduced as the new government affairs officer for the Riverside County Flood Control and Water Conservation District. Ms. Kuenzi will be attending Planning Partners meetings in the future.

# Coachella Valley Integrated Regional Water Management Program
# Planning Partners

**Thursday December 11, 2014**
**1:00-3:00 p.m.**

**Coachella Valley Water District**
**75-515 Hovley Lane East**
**Palm Desert, CA 92211**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

**Planning Partners**

Dan Malcolm, Agua Caliente Band of Cahuilla Indians
Debbi Livesay, Livesay Solutions
Jennifer Henke, Coachella Valley Mosquito and Vector Control District
Evon Willhoff, DWR
Mitch Mansfield, Salton Community Services District
Phoebe Seaton, Leadership Counsel for Justice & Accountability
Sergio Carranza, Pueblo Unido CDC
Tim Roberts, Salton Community Services District

**CVRWMG**

Brian Macy, IWA
Sara Toyoda, IWA
Katie Ruark, DWA
Mark Krause, DWA
Castulo Estrada, City of Coachella
Patti Reyes, CVWD
John Soulliere, MSWD
Ron Buchwald, VSD
Crystal Benham, RMC
Sally Johnson, RMC

**Meeting Objectives:**

A. Discuss Updates to the Statewide IRWM Grant Program
B. Discuss Round 3 Drought Solicitation
C. Discuss Round 2 Redistribution Funding
D. Discuss IRWM Program Next Steps

**Meeting Notes:**

**Welcome and Introductions**

Patti Reyes, Coachella Valley Water District, welcomed the Planning Partners on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the Coachella Valley Integrated Regional Water Management (IRWM) Program. Ms. Reyes then provided an overview of the agenda and meeting objectives. The group did self-introductions.

**Coachella Valley IRWM Program Update**

Ms. Reyes informed the Planning Partners that Valley Sanitary District (VSD) was added to the CVRWMG, and as a result of this addition the CVRWMG Memorandum of Understanding

(MOU), Ground Rules, and 2014 IRWM Plan were adopted by VSD. The CVRWMG is a formal group required by California Department of Water Resources (DWR) to be formally recognized as an IRWM region by DWR.

***DWR Capacity Building Workshop***

DWR recently hosted a Capacity Building Workshop focused on disadvantaged community (DAC) outreach and involvement. This workshop was attended by Ms. Reyes and Mr. Derek Nguyen, Indio Water Authority (IWA). Ms. Reyes stated that a number of DAC representatives attended the workshop from the CVIRWM Region, and that others attended via webcast. There was a video from the Inyo-Mono IRWM Region about how they were able to use grant funds to build a water station for their rural communities. DAC involvement is a priority for DWR and the IRWM Program, and Coachella Valley has a significant amount of DAC involvement.

**Status of IRWM Grant Program**

Crystal Benham, RMC Water and Environment (RMC), reminded the Planning Partners that Proposition 84 Round 1 and Round 2 Implementation Grant programs followed a classic IRWM grant process. The Coachella Valley IRWM Region signed its grant agreement with DWR for Round 1 in 2012. This grant funded four projects with $4 million grant dollars. All of these projects are underway. The Round 2 grant agreement has been signed, and the Region has received $5.24 million to fund four projects. Invoicing for the Round 2 projects will begin in January.

Questions/Comments

- Did the grant funds for the East Valley Oasis Gardens project cover the costs for the plumbing or the connection fees?
    - Oasis Gardens was developed by the County and the property owner to meet the housing needs of East Valley farm workers. At the time, there sewer services did not extend that far out. Later, a high school and Coal Ranch was built nearby, so the sewer main was extended to the area, with help from a U.S. Department of Agriculture grant. Connections to Oasis Gardens was not constructed at that time. Developments are responsible for the cost of system expansion required for connections (cost is pro-rated), so the grant covered the cost of the public system extension required for the connection, and the park owner is paying for the on-site plumbing and connections.

***Project Highlight: Regional Conservation Program***

The Regional Conservation Program is a joint effort between all five CVRWMG members (prior to the addition of VSD), and led to the creation of the CV Water Counts program (www.cvwatercounts.com) which focuses on public outreach, and connecting users to their local water agency and each individual agency's conservation programs and rebate opportunities. Recently, the Program participated with United Way in Make a Difference Day. The Program encourages involvement with CV Water Counts through its website, social media, and contests.

Questions/Comments

- Is participation in Make a Difference Day and annual thing?
    - Participation in events like Make a Difference Day is an ongoing process. We are trying to get involved with a number of different events, such as the golf cart parade, and events at the Living Desert.
    - The website started because surveys showed that residents in the Coachella Valley did not know who their water district was.

- The website is more of a webtool – it directs users to programs that are applicable to them based on where they live.

### *Drought Solicitation*

Ms. Benham reminded the Planning Partners that the recent Drought Grant Solicitation was different from previous IRWM Implementation Grant solicitations. The focus of the Drought Grant was on water production and projects that would address drought. $221 million was made available, up from the originally allocated $200 million. $12.25 million was given to the Colorado River Funding Area, with $5.3 million of this awarded to the Coachella Valley IRWM Region. The remaining Colorado River Funding Area funds were awarded to the Mojave IRWM Region. The Coachella Valley Region had applied for $9 million, and the CVRWMG is currently modifying the projects included in the application to accommodate the reduced funding.

There is anticipated to be a fourth and final round of Prop. 84 IRWM Implementation Grants. There is $4.175 million available to the Colorado River Funding Area, and Coachella Valley IRWM Region competes with other IRWM Regions for these funds. It is anticipated that the Round 4 grant solicitation will begin in late 2015, with applications due in Fall 2016. There is a possibility that this final round would also have a drought-focus, but this is still unknown.

### *Proposition 1*

Proposition 1 passed! Of the $7.545 billion included in the proposition, $510 million has been allocated to IRWM. The Colorado Funding Area would receive up to $22.5 million. There are some differences between Prop. 84 and Prop. 1. There will be a 50% funding match requirement, instead of the 25% match required under Prop. 84. Funding match waivers would still be available for DACs, and 10% of the funds statewide must go to DACs. There is also a stipulation that 10% of the funds go to economically distressed communities, but there remains uncertainty regarding the definition and intent of this stipulation.

<u>Questions/Comments</u>

- Lahontan Funding Area's allocation was reduced by only $2.5 million versus the Colorado Funding Area, whose allocation was reduced by $14 million between Prop. 84 and Prop. 1 What was the logic behind the funding area allocation values in Prop. 1?
    - Prop. 1's allocations were set in the legislation itself. The exact metric used is unknown, but may have reverted back to an older metric, and could be related to legislative pressures.
- Does Prop. 1 include funding for planning grants?
    - There is uncertainty over how much would be available for planning grants.
    - Still determining which state agency will be responsible for which funds. DWR is still finalizing grant agreements for the Prop. 84 Drought Solicitation, so they will not focus on Prop. 1 until January 2015. They may start with planning funds to help Regions lay the groundwork for future implementation projects.
    - July 2015 is the earliest any of the Prop. 1 funds would be available, because they would need to be allocated by the legislature in the budget.
    - DWR's first steps would be conduct public meetings to get feedback on the Prop. 84 grant processes, and try to incorporate what has been learned through Prop. 84 into what would be done for Prop. 1.
- The CVRWMG would like comments from the Planning Partners when DWR opens a public comment period on the IRWM grant process and Prop. 1.
- Is the 10% for DACs per Funding Area or is it for the state as a whole?

- It is statewide, not by Funding Area. It is unclear if the 10% for the economically distressed area is the same 10% as the DAC or if it is an additional 10%.

**Proposition 84 Round 2 Redistribution**

As the Planning Partners might remember, the Region was awarded $5.24 million under Prop. 84 Round 2 Implementation Grant. $500,000 was for the Coachella Valley Salt and Nutrient Management Program (SNMP). The SNMP project would develop a regional SNMP and implement outreach. The original project is still moving forward, but not under the CVIRWM Program. This means that the funds awarded to the SNMP need to be redistributed. The project(s) that receive these funds must have similar benefits and be regional in nature. The CVRWMG received eight projects for consideration, which are currently being reviewed for eligibility. In addition to being a regional project, eligible projects need to provide groundwater and water supply benefits, and meet DWR requirements to move forward under the Round 2 grant. Once the CVRWMG has selected the potential replacement project(s), it will be presented to the Planning Partners at the March 2015 meeting.

**Other Funding Opportunities**

The CVRWMG wanted to highlight opportunities to leverage IRWM funding to secure other sources of funding. One funding program that has been successful for some projects in the Region is the USDA Rural Development Grants and Loans. It requires complete environmental documents and preliminary engineering reports, which can be costly to complete, especially for DACs. DACs may use IRWM funds to complete these document, and can then apply for USDA funding for construction and implementation of the projects. This can be an effective way to complete rural projects, because they are often not ideal IRWM projects due to the high cost per capita benefitting from the project. The USDA funds, however, are specifically earmarked for rural communities, and this cost per capita is not a concern.

Questions/Comments

- The CVIRWM Region's DAC Outreach Program mapped DACs and mobile home parks in the CVIRWM Region. These maps can be used to help identify opportunities for creating additional benefits (e.g., mobile home parks near one another could implement a joint project).
- It would be good to coordinate with the CVIRWM Program to provide more information and timing of other funding opportunities.

Ms. Reyes noted that no DAC project was submitted to the database for consideration for the Drought Grant opportunities. However, DACs are a priority for the Region, and the CVRWMG reached out to nonprofits that serve DACs to solicit projects. The DAC project that was included in the Drought Grant application will provide rebates for sources of water waste (e.g., rebates to fix leaks, replace bad meters, etc.). Because this project is a rebate project, it can fund improvements on private properties. The rebates are not available yet, but an email will be distributed to DAC contacts and the CVIRWM Program email list once the final grant agreement is signed and the rebate processes have been established.

***Coachella Valley Regional Example of Leveraging Other Funds for DAC Projects***

Sergio Carranza, Pueblo Unido Community Development Corporation, presented on the success that his organization has had in leveraging IRWM funding to obtain USDA funding for the San Antonio del Desierto DAC Sewer Extension Project, which will extend the sewer system to serve an East Valley DAC. $740,000 in IRWM funds were used to develop a Preliminary Engineering Report for the project, and this report was used to apply for USDA funding to implement the project.

Mr. Carranza also spoke about the DAC Retreat hosted by DWR. It was a three day retreat attended by NGOs and government agencies. The goal was to combine expertise across the board to develop recommendations to improve the IRWM program to be more inclusive for DACs. DWR provided good feedback and perspective on successful DAC integration in regions. The draft recommendations that came out of the retreat were:

1. Build Capacity

NGOs try to address issues related to lack of infrastructure, but NGOs are fragile organizations because they have limited budget and staff. Despite this fragility, NGOs are critical for providing appropriate education and training to DACs. There needs to be a focus on building capacity both within NGOs and within communities. This is most effective when building capacity for NGOs within the target communities.

2. Education

DWR produces a number of bilingual educational materials and information that they can provide to DACs and NGOs for distribution in communities. There are two sides to the education piece of involving DACs. The first is to education children, and requires working with local schools. The second piece is to provide educational access for parents and adults.

3. Governance and Transparency

There are challenges related to funding requirements that hinder DAC participation in the IRWM program. DWR needs to improve and streamline funding mechanisms. Although the reimbursement system used for the grant awards is challenging for NGOs and DACs, DWR has been getting better at processing reimbursement requests. One of the other challenges for DACs is being able to deliver projects in a timely manner within the requirements of the grant agreements. This challenge is often related to capacity limitations.

Questions/Comments

- The CV Water Counts website has been translated into Spanish, and is available on mobile devices in both English and Spanish.

**Next Steps**

The next Planning Partners meeting will be in March, 2015. The CVRWMG will continue to track Prop. 84 Round 4 Implementation Grant and Prop. 1 funding opportunities. Planning Partners are encouraged to provide input on topics they would like to see on the next Planning Partners meeting agenda.

# Coachella Valley Integrated Regional Water Management Program
# Planning Partners

**Tuesday June 14, 2016**
**1:00-3:00 p.m.**

**Coachella Valley Water District**
**75-515 Hovley Lane East**
**Palm Desert, CA 92211**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

| **Planning Partners** | **CVRWMG** |
|---|---|
| Sergio Carranza, Pueblo Unido CDC | Eric Del Bosque, IWA |
| Margaret Park, Agua Caliente Band of Cahuilla Indians | David Tate, DWA |
| Mariela Magana, Leadership Counsel | Ashley Metzger, DWA |
| Maria Davydova, RWQCB-Colorado River Basin | Scott Rogers, Coachella Water Authority |
| Michelle Gonzales Bleza, Torres-Martinez Desert Cahuilla Indians | Patti Reyes, CVWD |
| Alberto Ramirez, Torres-Martinez Desert Cahuilla Indians | Mike Thornton, MSWD |
| Ed Muzik, HDWD | Crystal Benham, RMC |
| Joaquin Tijerina, Riverside County EDA | Alexis Cahalin, RMC |
| Matthew Howard, Mojave Water Agency | |

**Meeting Objectives:**

A. Updates on Coachella Valley IRWM Program
B. Updates on Proposition 1 IRWM Program
C. Overview of DAC Solicitation Opportunity and Coachella Valley Priorities
D. Grant Workshop for DAC Solicitation

**Meeting Notes:**

**Welcome and Introductions**

Patti Reyes, Coachella Valley Water District, welcomed the Planning Partners on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the Coachella Valley Integrated Regional Water Management (IRWM) Program. Ms. Reyes then provided an overview of the agenda and meeting objectives. The group did self-introductions.

**Coachella Valley IRWM Program Update**

Crystal Benham, RMC Water and Environment (RMC), provided an overview of grants received by the CVIRWM Region through Proposition 84. The CVIRWM Region received six grants for a total of over $18 million, with over $8 million going toward DACs.

**Proposition 1 IRWM Program Update**

Ms. Benham discussed the Proposition 1 DAC Involvement Solicitation. The focus for the DAC Solicitation in the Coachella Valley is to fund project development activities that will lead to projects that will leverage implementation funding (i.e. planning, engineering, environmental, permitting, or design). Projects submitted for funding under the Proposition 1 DAC Solicitation will need to be completed within 2 years of grant contracting.

Ms. Benham reminded the Planning Partners that the DAC Solicitation will be submitted as one joint proposal from the Colorado River Funding Area, including the Coachella, Imperial, and Mojave Funding Regions. The total funding available for this solicitation is $2.25 million, and the three regions met and agreed upon a funding split for the DAC Solicitation. The Coachella Valley Region will receive $1,118,030, the Imperial Region will receive $724,870, and the Mojave Region will receive $407,100 per the agreed upon funding split.

Ms. Benham presented the eligibility requirements for the DAC Solicitation and provided the definitions of DAC, EDA, and Underrepresented Communities. The overall anticipated schedule for the DAC Solicitation was presented as follows:

- Coachella Valley Call for Projects: June 1 – July 1, 2016
- Project Interviews: July 13th
- Colorado River Funding Area Meeting: July 20th
- DWR Funding Area Meeting: July or August
- Submit Application to DWR: September
- Awards Completed by DWR: October

Questions/Comments

- Can small community water systems be a project sponsor?
- Is the State willing to pay connections fees? Connection fees are a significant barrier – need clarification on whether connection fees are eligible.
- Are tribal land wells eligible?
- Is there a minimum required life span for the projects?
- Will the State provide advanced payment?

**DAC Grant Workshop**

The purpose of the DAC Grant Workshop is to discuss the CVIRWM Programs DAC needs, to discuss types of projects that can be funded, to identify key funding and contracting expectations, and to answer questions about funding and next steps.

***DAC Issues and Needs in the Coachella Valley***

Projects submitted for funding under the Proposition 1 DAC Solicitation must address a water resources-related need of a DAC, EDA, or underrepresented community. The five major issues identifies in the Coachella Valley IRWM Plan include drinking water quality, adequate wastewater treatment and disposal, access to municipal services, onsite flooding, and cost of water and sewer services.

### *Eligible Project and Project Competitiveness*

The project scoring process is outlined in the Coachella Valley IRWM Plan. The two steps of the scoring process are intended to ensure projects meet DWR requirements and the needs of the Coachella Valley and include numeric (quantitative) scoring followed by project vetting (qualitative).

The DAC Solicitation is intended solely for planning activities. The priority in the Coachella Valley is to fund project development activities that will lead to implementation projects.

Ms. Benham discussed how to increase competitiveness of project applications by focusing on multiple project benefits, maximizing benefits, quantifying benefits, and ensuring the application addresses each eligibility item clearly. Providing supporting documentation can also help to provide clarity.

### *Contracting Requirements*

Ms. Benham presented the contracting requirements for projects awarded funding under the Proposition 1 DAC Solicitation. Project sponsors must be willing to work with DWR and the IRWM Program in a timely manner, must adopt the 2014 Coachella Valley IRWM Plan, and if the project sponsor is a public agency, must be in compliance with water-related regulations. Ms. Benham reminded the group of the funding restrictions associated with the DAC Solicitation. Grant funds will not cover costs that are incurred prior to contract execution, projects must be complete within two years, and all spending must be in line with provisions of the contract. Ineligible activities include application preparation costs for funding not consistent with Proposition 1 IRWM funding, meals not directly related to travel, or payment of stipends.

### Next Steps

The next Planning Partners meeting will be in November, 2016. The CVRWMG will continue to track and Prop. 1 funding opportunities. Planning Partners are encouraged to provide input on topics they would like to see on the next Planning Partners meeting agenda.

# Coachella Valley Integrated Regional Water Management Program
# Planning Partners

**Tuesday November 9, 2016**
**10:00-12:00 p.m.**

**Coachella Valley Water District**
**75-515 Hovley Lane East**
**Palm Desert, CA 92211**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

| Planning Partners | CVRWMG |
|---|---|
| Sergio Carranza, Pueblo Unido CDC | Adekunle Ojo, IWA |
| Mariela Magana, Leadership Counsel | David Tate, DWA |
| Ed Muzik, High Desert Water District | Ashley Metzger, DWA |
| Matthew Howard, Mojave Water Agency | Steve Johnson, DWA |
| David Bradshaw, Imperial Irrigation District | Scott Rogers, CWA |
| Joe Glowitz, Valley Sanitary District | Berlinda Blackburn, CWA |
| Shawn Muir, Twenty-Nine Palms Band of Mission Indians | Patti Reyes, CVWD |
| Sylvester Beltran | Steve Ledbetter, MSWD |
| Joe Pradetto, Riverside County Board of Supervisors | John Soulliere, MSWD |
| Roger Shintaku, CSU PACC | Crystal Benham, RMC |
| Justin Conley, Agua Caliente Band of Cahuilla Indians | Alexis Cahalin, RMC |

**Meeting Objectives:**

A. Updates on Coachella Valley IRWM Program
B. Overview of DAC Solicitation
C. Overview of Planning Grant
D. Updates on Proposition 1 IRWM Program

**Meeting Notes:**

**Welcome and Introductions**

Patti Reyes, Coachella Valley Water District, welcomed the Planning Partners on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the six regional water suppliers in the Coachella Valley who are responsible for overseeing the Coachella Valley Integrated Regional Water Management (IRWM) Program. Ms. Reyes then introduced Crystal Benham, RMC Water and Environment (RMC). Ms. Benham provided an overview of the agenda and meeting objectives. The group did self-introductions.

**Coachella Valley IRWM Program Update**

MS. Benham, provided an overview of grants received by the CVIRWM Region through Proposition 84. The CVIRWM Region received six grants for a total of over $18 million, with over $8 million going toward DACs. Ms. Benham introduced John Soulliere, Mission Springs Water District (MSWD) to present on MSWD's Groundwater Protection Program. Portions of the Program received funding under Proposition 84.

Mr. Soulliere provided an overview of water issues in MSWD's service area. MSWD struggled with gaining voter support on water projects. Through the turmoil, MSWD determined that if they decreased project costs by leveraging outside funding and increasing value perception, voter support for projects would increase. The Groundwater Protection Program officially began in 1995 and intended to remove septic systems and connect the majority of the service area to the municipal sewer system. The Program was a huge undertaking, particularly for a DAC, with a price tag of $70,000,000. MSWD received approximately $3.8 million for the Program through IRWM Proposition 84 funding.

**2016 DAC Solicitation**

Ms. Benham provided an overview of the DAC Involvement Solicitation to the group. This grant solicitation is for activities that involve DACs, EDAs, or URCs. The focus in the Coachella Valley is to fund project development activities including planning, engineering, environmental, permitting, or design, which will lead to projects that will leverage funding.

There will be one joint proposal submitted for the entire Colorado River Funding Area. The regions have been coordinating and agreed to a funding split. Of the $2.25 million available to the Funding Area, Coachella Valley will receive $1,118,030, Mojave will receive $407,100, and Imperial will receive $724,870.

In June 2016, the CVRWMG opened the call for projects for the DAC solicitation. During the previous Planning Partners meeting in June, the public and interested parties were provided an opportunity to comment on the scoring criteria developed by the CVRWMG. Subsequently, three high priority projects were selected for funding. Ms. Benham invited Scott Rogers, CWA, to present the Chromium-6 Treatment Facilities Design and Permitting Project that will be included in the application.

Mr. Rogers discussed the need for the project, as many of CWA's wells produce water with Chrom-6 levels that are higher than the State's maximum contaminant level (MCL). The DAC Involvement funding would allow CWA to complete design and permitting for the project.

Ms. Reyes presented CVWD's DAC Design and Environmental Permitting project to the group. The funding will be used to complete design and environmental planning for a pipeline extension to a DAC that is currently not connected to municipal water and wastewater systems.

Mr. Soulliere presented MSWD's project that will be included in the DAC Involvement Grant. The project is a component of MSWD's previously discussed Groundwater Management Program. The funding will provide planning and engineering to connect Areas H and I to MSWD's wastewater system.

**2016 Planning Grant Submittal**

The planning grant application was submitted in September, requesting $211, 982 to complete a comprehensive update to the 2014 Coachella Valley IRWM Plan. Updates will include requirements per the 2016 IRWM Guidelines, a functionally equivalent Stormwater Resources

Plan, and governance updates. These updates are needed to maintain eligibility for projects to receive grant funding.

**Proposition 1 IRWM Program Update**

Ms. Benham provided the anticipated timeline for Proposition 1 grant funding:

- Planning Grant: December 2016 – December 2018
- Implementation – Round 1: December 2018
- DAC Solicitation: January 2017 – January 2020
- Implementation – Round 2: January 2020

Ms. Benham provided an overview of the types of projects that will be eligible for implementation funding, the focus of IRWM (multiple benefits, maximizing benefits, and quantifying benefits), and Coachella Valley IRWM Plan objectives.

Ms. Benham reminded the group that the Coachella Valley Project Database is always open and the CVRWMG is available for project discussions. Projects are submitted through the Coachella Valley IRWM Project Database which can be accessed on the CVRWMG website under the "Projects" tab.

Other Proposition 1 grant programs include the DWR Sustainable Groundwater Planning Grant and the DWR Water Desalination Grant. There is $90 million available under the Sustainable Groundwater Planning Grant which will fund projects that develop and implement sustainable groundwater planning projects. There is $49 million available under the Water Desalination Grant which will fund planning, design, and construction of water desalination facilities for brackish and ocean water. Both are anticipated to be released in December 2016/January 2017.

**Next Steps**

The next Planning Partners meeting will be in February, 2017. The CVRWMG will continue to track Prop. 1 funding opportunities. Planning Partners are encouraged to provide input on topics they would like to see on the next Planning Partners meeting agenda.

# Coachella Valley Integrated Regional Water Management Plan

# Integrated Flood Management Workshop #1

**Tuesday January 15, 2013**
**1:00 – 3:00 pm**

**Coachella Valley Water District**
**CVWD Training Room**
**75-515 Hovley Lane East**
**Palm Desert, CA 92260**

**DRAFT NOTES**
*Italics denote action items.*

## Attendance

Berlinda Blackburn, CWA
David Tate, DWA
Mark Krause, DWA
Sara Toyoda, IWA
Tim Roberts, Salton Community Services District
Jennifer Henke, Coachella Valley Mosquito and Vector Control
Jeremy Wittie, Coachella Valley Mosquito and Vector Control
Janis Smith, Dudek
Chuck Greely, Dudek
Patti Reyes, CVWD
Matthew Palavido, CVWD
Tesfaye Demissie, CVWD
Margaret Park, Agua Caliente Tribe
Elizabeth Versace, City of Desert Hot Springs
Paul Russell, Riverside County Transportation Department
Bill Simons, Cathedral City
Rodolfo Piñon, Pueblo Unido
Scott Lynch, RMC
Bruce Phillips, PACE

## Meeting Objectives

- Introduction to Integrated Flood Management
- Understanding of Flood Risks, Issues, and Sources in Region
- Implementation of Flood Hazard Mitigation

## Agenda

1. **Integrated Flood Management (IFM) Background**

   Bruce Phillips welcomed the group, who did self-introductions. Mr. Phillips then provided an overview of the meeting objectives and an overview of IFM.

## 2. Why IFM?

Bruce Phillips identified the benefits offered by IFM planning and common IFM strategies at different scales.

## 3. Progress to Date

Bruce Phillips explained the IFM planning process that would be undertaken for the Coachella Valley IRWM Plan and across the Coachella Valley IRWM Region, and informed the group of all progress to date on information gathered and findings, including the Region's flood hazards, sources, and maps of flood hazard zones. He also identified IFM opportunities through analysis of GIS data related to the physical and biological characteristics of the Region.

## 4. Stakeholder Input Requested

Bruce Phillips led a discussion and presentation on the input that is being requested from stakeholders to complete the IFM Study:

a) Input needed includes:
- Additional documents not already received
- Additional data
- Existing localized flooding locations (key hot spots)
- Chronic flood damage loss areas
- Critical facilities/locations
- Participation
- Review of draft vision

b) Vision document will be a regional vision for multi-purpose IFM opportunities to develop projects

c) Overlaying of data can help to identify multi-objective project opportunities

d) GIS Layers needed to develop opportunities include:
- Pollutant sources
- Flood hazards
- Groundwater basins
- Habitat/wetlands
- Sensitive species
- Permeable soils
- Erosion hazards
- Debris/sediment potential
- Impaired water bodies

e) Stakeholder Workshop Input – *will send survey requesting data/information on*:
- Common flooding problem/sources (local)
- Common watershed flood problems/sources
- Chronic/key flood locations/damages/issues
- Deficiency locations of existing stormwater/drainage facilities

Discussion followed the presentation, and included:

a) Are we using the DWR flood information? Yes, we are using DWR database in our data. DWR used the FEMA database, but not the State's own data. FEMA is missing a lot of areas. *We will look into using the additional state database.*

b) Are we identifying alluvial fans via aerial photos? We have limited budget to be able to do that, but we are using the FEMA database, which shows the alluvial fans.

c) There are a lot of agricultural facilities, but they may not be providing any flood protection.

d) CVAG is working on a new aerial photography/mapping of the area in 2013. They are looking for more agencies to provide funding for this valley-wide effort. Plan is to have 6" resolution. They can get elevation data with another contractor.

e) Patti Reyes: As part of the IRWM process, we are encouraging Disadvantaged Community (DAC) involvement. Are there opportunities within the IRWM area to assist in identifying local flood areas in DAC areas? Note, as part of the IFM process, we do want to encourage multi-benefits with major factors being recharge/capturing of water and not just standard flood protection projects.

f) There is not a weighting system on the benefits to the opportunities being identified. The benefits/scoring is just based on the number of multi-objective opportunities being identified.

g) Some strategies (i.e. project benefits) may be in conflict with each other. One example is mosquito control vs. groundwater recharge (esp. underground). How is this addressed? We want to get this input so that we can identify potential concerns and adjust the strategies as appropriate.

**5. Next Steps**

a) Make today's presentation available online

b) Identify next workshop date

c) Send information request to stakeholders.

# Coachella Valley Integrated Regional Water Management Plan Update
# IFM Workshop # 2

**Wednesday September 18, 2013**
**10:00am – 12:00 pm**

**Coachella Valley Water District**
**Training Room**
**75-515 Hovley Lane East**
**Palm Desert CA**

**DRAFT NOTES**
*Action items in italics*

## Attendance

Mike Gialdini, County of Riverside
Donald Raymond, County of Riverside – Transportation Dept.
Berlinda Blackburn, City of Coachella
Jim Sullivan, CVAG
Jennifer Henke, Coachella Valley Mosquito and Vector Control District
Bill Enos, City of Rancho Mirage
Phenvana Panpradith, Cathedral City
Jerry Santillan, SCSD
Sarah Jimenez, Agua Caliente Band of Cahuilla Indians
David Tate, DWA
William Meraz, GODWIN
Patti Reyes, CVWD
Tesfaye Demissie, CVWD
Rosalyn Prickett, RMC
Bruce Phillips, PACE

## Agenda

1. **Introductions**

   Patti Reyes gave introductions for the five Coachella Valley Regional Water Management Group (CVRWMG) agencies. Introductions were made around the room.

2. **IFM Study Objectives and Benefits**

   Bruce Phillips presented an overview of the Coachella Valley's Integrated Regional Water Management (IRWM) efforts, noting that the original IRWM Plan was developed in 2010 and is currently being updated. As part of the Plan Update effort, the Integrated Flood Management (IFM) study is being developed to improve the understanding of IFM and increase competitiveness of flood projects. Mr. Phillips noted that the study is also being developed to meet the requirements in the 2012 IRWM Program Guidelines. He also stated that IFM would provide opportunity for flood and stormwater projects to participate in State grant funding, would engage watershed stakeholders, provide coordination between flood and water agencies, and promote watershed and land use planning.

3. **Review of IFM Principles and Background**

   Bruce Phillips provided a brief background on IFM.

4. **Characterize Flood Problems/Flood Risk and Exposures**

   Bruce Phillips presented the characterization of Coachella Valley flood hazards and exposure that was developed in the IFM study. These characterizations included existing and future flood risk, level of risks, sources of flooding, and priorities. This analysis was developed through spatial analysis using GIS overlays of data related to flood causes and predictors, the extent of flooding and damage, and potential flood management strategies.

5. **Guidance for Planning IFM in the Coachella Valley**

   The mapping analysis, which included pollutant sources, flood hazards, groundwater basins, habitat/wetlands, sensitive species, permeable soils, erosion hazards, debris/sediment production, and impaired water bodies, was used to characterize the Coachella Valley IRWM Region as it relates to flooding.

6. **Applicable IFM Techniques to the Desert**

   Bruce Phillips explained that the study considered which IFM techniques are applicable or feasible for a desert area such as the Coachella Valley IRWM Region.

7. **Correlate Watershed Characteristics to IFM Measures**

   Bruce Phillips explained how the IFM study correlated watershed characteristics to IFM measures. Using the East Valley's portion of the stormwater channel as an example, he presented how IFM could work.

   The East Valley Storm Water Channel is narrow and roughness is high because of large trees. IFM would involve working with the Coachella Valley Association of Governments (CVAG) to expand channel width while retaining habitat benefits.

   - For IFM Approach A (Increased floodplain infiltration) – Managers could increase the base width of the stormwater channel
   - For IFM Approach F (Application of Low Impact Development (LID) techniques, Parks with flood storage areas) – Managers could develop Freedom Park with ground water recharge and LID
   - For IFM Approach M (Retention/Detention Storage) – Managers could construct the Big Horn Detention Basin with a hidden outflow device to disguise it and help it blend into the surrounding environment

8. **Mapping IFM Opportunities**

   Combining the results of the mapping analysis with the correlated watershed characteristics and IFM measures allowed the IFM technical team to map IFM opportunities in the Region.

9. **GIS Guidance Tool Planning IFM Measures Locations for the Coachella Valley Area**

   IFM strategies were then considered in relation to these maps to provide guidance on IFM Planning for the Region. Areas of different IFM opportunities are geocoded, allowing planners to select project locations on the map, and see which IFM Opportunities may be feasible for that particular project area.

**10. Stakeholder Funding Opportunities**

A brief overview of potential IRWM funding opportunities was presented. Included was Proposition 84 Implementation grant funding, the success the Region has had in Rounds 1 and 2 of Proposition 84 grants, and the anticipated Round 3 application period in Fiscal Year 2014/2015. Stakeholders were encouraged to submit projects to the online Project database, available on the IRWM Program website (www.cvrwmg.org).

**11. Stakeholder Input**

The workshop was opened to discussion to solicit stakeholder input. The discussion included:

a) Stakeholders noted that Coachella Valley Mosquito and Vector Control (CVMVCD) should be included in the flood section.
   - Jennifer Henke, CVMVCD said that her group may have GIS maps of flood areas. CVMVCD focuses on standing water.

b) It was noted that IRWM is working to reach out to land use planners to teach them about IFM and multiple benefits from coordinating water and land use planning.

c) It was noted that IFM has been happening in the Region.
   - The CVAG Thousand Palms Project is coordinating with the Multiple Species Habitat Conservation Plan. There should be acknowledgement of these efforts and agencies in the IFM Study.

d) The County has Emergency Management Zones in Sky Valley. New FEMA maps were produced 6 years ago.
   - Can we ask Riverside County Flood Control and Water Conservation District for update on layers?
   - Will follow-up with CVWD flood engineer

e) Need to acknowledge that CVAG vegetation map is old and from the 1990's

f) For the IFM examples that were presented for the East Valley's stormwater channel:
   - IFM Approach A:
     - Purchase land with floodplain
     - Morongo, CVMSHCP, Thousand Palms flood control project
     - USACE/CVWD has design plans (*Create a call-out box*)
     - Drainage of Torres-Martinez (Torres Canyon)
   - IFM Approach F:
     - Recreation opportunities in Salton City?
     - Natural washes (unimproved) breech with summer storms.
     - Interim IFM for DAC areas?
     - Levees and washes?
     - Erosion/slope stabilization.
     - Repeated spot flooding in Vandevere, North Shore, reported in disadvantaged communities mapping, Salton City.
     - Agricultural drains – as East Valley urbanizes, is drainage system maintained for reuse, or will it continue to the Salton Sea to support habitat?

- IFM Approach M:
  - Thousand Palms has a sand deposition area for fringe toed lizard. This slows water down, and leads to recharge

**12. Next Steps**

- Bruce Phillips will provide the presentation to the CVRWMG, who will post it on the IRWM website (www.cvrwmg.org).
- A new data page will be added to the IRWM Program website for IFM data
- The CVRWMG will review the IFM analysis prior to distribution of the final IFM report.
- There will be a closed CVRWMG meeting in October to discuss needs and projects with Salton City.

# Coachella Valley Integrated Regional Water Management Program

## Disadvantaged Communities Outreach Program
## Disadvantaged Communities Workshop #1

**Thursday September 13, 2012**
**10:00 a.m. – 12:00 p.m.**

**Coachella Valley Water District**
**Training Facility**
**75-515 Hovley Lane East**
**Palm Desert, CA 92260**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

**Planning Partners**

Anna Aljabiry, DWR
Phoebe Seaton, California Rural Legal Assistance Foundation
Cristina Mendez, California Rural Legal Assistance Foundation
Christina Mokhtarzadeh, Bureau of Indian Affairs Southern California Agency
Elizabeth Versace, City of Desert Hot Springs
Mike Gialdini, Supervisor Benoit
Jennifer Henke, Coachella Valley Mosquito and Vector Control
Anna Vargas, Poder Popular.
Ellen Shimakawa, Cal State University, San Bernardino
Robert Phalen, Cal State University, San Bernardino
Phenvana Panpradith, City of Cathedral City
Carrie McLeod, USDA
Brian Sinclair, Loma Linda University

**CVRWMG**

Berlinda Blackburn, CWA
Brian Macy, IWA
Mark Krause, DWA
Katie Ruark, DWA
Patti Reyes, CVWD
Michael Thornton, TKE Engineering on behalf of MSWD
Rosalyn Prickett, RMC
Kathy Caldwell, RMC
Crystal Mohr, RMC
Leslie Dumas, RMC
Daniel Cozad, IPM
Diana Cozad, IPM

**Meeting Objectives:**

A. Provide an overview of IRWM Planning and Coachella Valley specific IRWM Planning efforts
B. Provide an overview of efforts completed to date and next steps
C. Share/capture other relevant thoughts and ideas for future discussion

**Meeting Notes:**

**Welcome and Introductions**

Patti Reyes, Coachella Valley Water District (CVWD), welcomed the meeting attendees on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the Coachella Valley Integrated Regional Water Management (IRWM) Program.

Kathy Caldwell, RMC Water and Environment (RMC), provided an overview of the agenda and meeting objectives.

**Overview of CV IRWM DAC Program**

Kathy Caldwell, RMC, provided an overview of the Disadvantaged Community (DAC) Outreach Program. The purpose of this program is to expand upon previous DAC outreach to target individuals and groups representing DAC issues, and to also engage members of DAC community in order to frame and articulate water management issues facing DACs. One of the forms within the agenda packet is a letter and corresponding stakeholder form – Kathy encouraged all attendees to fill out the stakeholder form to assist in identifying issues and helping the team contact all relevant stakeholders.

**Introduction to CV IRWM Planning**

Kathy Caldwell provided an overview of IRWM planning and DAC outreach efforts, noting that there are two distinct yet interwoven planning efforts being conducted. She explained that the first effort, the DAC Outreach Program has five main components:

- Completing directed outreach to DACs to create a database of stakeholders that are interested or involved in DAC-related issues.
- Identify where DAC populations are located within the Coachella Valley.
- Work with identified stakeholders and DAC populations to characterize issues faced by DACs.
- Work to identify DAC issues through the creation of projects that could potentially be funded with Proposition 84 (IRWM) funding.
- Coordinate DAC Outreach efforts with the larger IRWM planning effort.

Rosalyn Prickett, RMC, briefed the group on the State's IRWM program. She provided an overview of the history of IRWM planning in the State of California and in Coachella Valley, noting that the three goals of the State's IRWM Program are: develop long-term water supply reliability, improve water quality, and protect natural resources. The first Coachella Valley IRWM Plan was adopted in 2010 (available on www.cvrwmg.org), which made the region eligible for Proposition 84 funding. In Round 1 of Proposition 84 funding, in 2011, the Coachella Valley was awarded $4 million in grants.

The Coachella Valley IRWM Region generally follows the Whitewater River watershed, but also extends to encompass Salton City. The Coachella Valley IRWM planning efforts are led by the CVRWMG, which includes the Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District.

Rosalyn provided an overview on the Coachella Valley IRWM Plan Update, which is a "sister effort" to the DAC Outreach Program. The Coachella Valley IRWM Plan Update will include six major efforts, including:

- Stakeholder Outreach
- Groundwater Quality Evaluation
- Salt and Nutrient Management
- Integrated Flood Management
- Groundwater Elevation Monitoring
- Comprehensively update the IRWM Plan

Rosalyn then explained that the Coachella Valley IRWM planning effort has always included outreach efforts and planning associated with DACs. Such efforts include the formation of a DAC Issues Group, identifying DAC-specific issues in the IRWM Plan, and awarding funds to two projects that provide benefits to DACs.

Questions/Comments

- Does the information provided regarding the amount of funding available to the Region include funds for Proposition 84 and Proposition 1E, or just Proposition 84?
    - There will be more information at the Planning Partners meeting. However, the amount of funding available to the Colorado River Funding Area in Round 2 of Proposition 84 (approximately $5 million) only pertains to Proposition 84. Please remember that while there is more money available through Proposition 1E, those funds are competitive on a state-wide basis rather than competitive within the Colorado River Funding Area.
- With regards to the mapping, I have some questions about the scale and how this was completed.
    - There will be a detailed discussion of the DAC mapping later in the meeting.
- What is the range of the Salton Sea CSD? This jurisdiction is not delineated on the map provided of the Region.
    - We will update the figure to include the boundaries of the Salton Sea CSD.

**DAC Outreach Efforts and Planning**

Kathy Caldwell provided an overview of the DAC Outreach Program, which is a companion project to the IRWM Plan Update effort described previously by Rosalyn. Kathy noted that these efforts are closely coordinated with similar tasks. The primary difference is that the DAC Outreach Program focuses exclusively on DACs, while the IRWM Plan Update focuses on the entire IRWM Region. Kathy noted that there is a DAC Outreach Project tab on the CVRWMG website, please check the website for pertinent information.

Kathy explained that upcoming activities include use of mapping with GIS to identify and characterize smaller DAC areas and flood control needs. This work will be completed, in part, by non-profit organization(s) within Coachella Valley. One of the forms within the agenda packet is a form for non-profit organizations to fill out to express their interest in working on this task. Organizations must be registered as a 501(c)(3) organization to be eligible to participate in this task.

Kathy explained that, as will be discussed later in the meeting, the IRWM Program is currently soliciting projects for Round 2 of Proposition 84 funding. The DAC Outreach Program will assist this effort by helping to identify DAC issues and projects, as well as provide some engineering and planning support to help NGOs and organizations involving DACs develop projects that can be eligible and competitive for Proposition 84 funding.

Daniel Cozad, IPM, asked that any stakeholders who did not directly receive an invitation to the meeting please contact Diana Cozad to be added to the DAC Outreach Program stakeholder list.

**Initial DAC Characterization Maps/ Characterization mapping, 501C3 Participation Overview**

Daniel Cozad provided an overview on the initial DAC characterization maps, noting that the primary purpose of this exercise is to use Census and demographic data to try to better understand key issues in the Coachella Valley. This process of identifying key issues will help

the Region determine where it allocates resources (IRWM funding, etc.) For example, the focus for this effort is to locate DACs that are primarily not served by municipal water services – these are the areas that are more likely to experience critical water quality issues due to the use of untreated groundwater. The maps were produced with information from the U.S. Census, Tapestry Community Data (from ESRI), and the American Communities Survey.

Daniel noted that the purpose of the overview today is to discuss the maps that have been produced, and provide any feedback. Please feel free to be critical – we want to know if there are any errors in the information being presented or misperceptions about the way it is shown.

Daniel then walked the group through each map, describing what each map represents. He noted that the team started by analyzing information from DWR regarding the location of DACs in the Coachella Valley. It is notable that the DWR data is very different from the US Census and other data, indicating that the DWR data may not be accurate. Daniel also explained the tapestry profile maps, which are a tool to understand demographics within an area, and in particular to understand the economic purchasing power of various communities.

As indicated previously by Kathy, the next step in the mapping process is to take a closer look at the maps with support from local non-profit organizations. This work will begin very soon, as it needs to be completed in early 2013. If your organization is interested in participating in this process, please fill out a form and return it to Kathy Caldwell.

<u>Questions/Comments</u>

- Do the maps take into consideration metropolitan statistic overlays?
    - Yes, to a certain extent. We can consider this data source as we refine the maps.
- What do you mean by “closer look” when referring to the mapping exercise?
    - We mean refining the scale of the maps, and incorporating actual on-the-ground data collected by local entities.
- To clarify – does DWR consider Palm Springs to be a DAC?
    - Palm Springs does appear as a DAC in DWR’s data set. You will see that this area is largely not considered a DAC within the refined mapping using U.S. Census and other data.
- Can you please clarify the data source on each of the maps?
    - Yes.
- Suggest that you use US Department of Commerce data and the American Community Survey. Specifically, it would be helpful to look at USDA food stamp allocations, foreclosure rates, and unemployment. These factors help to characterize the Region’s economic status.
- It would also be good to look at areas with high rates of renters.
- Does DWR have a population minimum with regards to providing financial support to DACs? In other words, are there DAC projects that are too small to fund through the IRWM Program?
    - DWR does not have a set minimum value; however, each project included within the grant application needs to have a benefit: cost ratio that is greater than 1. In past evaluations we have found that very small communities that require very expensive infrastructure improvements cannot meet this benefit/cost ratio.

**Groundwater Quality and Flood Risk Studies**

Leslie Dumas, RMC, provided an overview of the groundwater quality evaluation that is being conducted as part of the IRWM Plan Update. She noted that the current step of this evaluation is to identify "areas of concern." Areas of concern include DACs that are not served by municipal water suppliers, and are therefore served by private groundwater wells. After these areas are identified, research will be conducted to try to determine groundwater quality and constituents or contaminants of primary concern within the areas of concern. Similar to the other IRWM planning efforts, this effort focuses on identifying key water quality issues associated with DACs – the identification of these issues will help determine how to allocate resources to critical DAC issues.

Any entity that has groundwater quality and quantity data can really help! If you have data, please send it to Leslie: ldumas@rmcwater.com.

Questions/Comments

- Do you have the AB2020 Report?
    - Yes.
- Do you need surface hydrology studies?
    - Not necessarily, this study is focusing on groundwater. However, those would be useful for the IRWM Plan Update.
- It would be easier to provide data if you can first narrow down the areas where you need data. If you identify the areas of concern, CVWD can potentially provide groundwater quality data for those areas.

Kathy Caldwell provided an overview of the flood management study that is going to be conducted as part of the IRWM Plan Update and the DAC Outreach Program. She noted that this process is going to dovetail with the State's Flood Futures report, which has not yet been released by DWR.

Although the Coachella Valley effort will dovetail with the state effort, through the Outreach Program the team is working to collect additional data from stakeholders regarding flooding and flood risks. If you have any data or information regarding flooding, please submit it to the team through the stakeholder form that is within the agenda packet.

**Issue Identification and Project Development**

Kathy Caldwell explained that previous outreach efforts and current DAC-specific outreach efforts have led to the development of a preliminary list of DAC issues, including:

1. Cost of conversion to combined/advanced treatment or connection to sewer
2. Provision of quality water supply and wastewater services
3. Accurate DAC stakeholder data
4. Coordination between cities, tribes, county, and water agencies

The next steps are to expand upon the preliminary list of DAC issues, and create a robust list of DAC issues within the Coachella Valley. Those issues will lay the foundation for characterizing DAC issues, and will also guide development of potential projects that can be developed or implemented to address the issues.

Other next steps are associated with Round 2 of Proposition 84, for which the Region is currently accepting projects. If there are ready-to-go DAC projects, the Program will channel those projects to the IRWM Plan for consideration.

For future grant funding, the DAC Outreach Program is able to provide technical support to help develop project ideas into projects, or to provide some preliminary engineering or planning work that will assist organizations in developing projects that are competitive for IRWM grant funding.

Questions/Comments

- Do you know the status of the DAC project (the Short-Term Arsenic Treatment Project)?
    - Our understanding is that the project did face start-up funding issues, but that those issues have been resolved. CVWD is working to schedule a kick-off meeting with all project proponents.
- Can you please email out the project database information? Who do I contact if I need to change an existing project?
    - Contact Crystal Mohr: cmohr@rmcwater.com or (858) 875-7421

**Next Steps**

Kathy Caldwell closed the meeting by thanking attendees, and informing them how to be involved in the DAC Outreach Program. She asked attendees to please contact an IPM or RMC team member with any additional questions. Kathy also encouraged attendees to stay for the Planning Partners meeting, which will begin at 1 p.m.

# Coachella Valley Integrated Regional Water Management Program

## Disadvantaged Communities Outreach Program
## Disadvantaged Communities Workshop #2

**Thursday December 13, 2012**
**10:00 a.m. – 12:00 p.m.**

**Coachella Valley Association of Governments**
**Conference Room #115**
**73-710 Fred Waring Drive**
**Palm Desert, CA 92260**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

**Planning Partners**

Anna Aljabiry, DWR
Sergio Carranza, Pueblo Unido Community Development Corporation
Mike Gialdini, Supervisor Benoit
Jennifer Henke, Coachella Valley Mosquito and Vector Control District
Jacquelyn Gonzales, Cabazon Band of Mission Indians
Debi Livesay, Torres Martinez Desert Cahuilla Indians
Laura Massie, California Rural Legal Assistance
Tim Roberts, Salton Community Services District
Jon Rokke, Colorado River Basin Regional Water Quality Control Board
Ryan Sinclair, Loma Linda University
Thomas Weiler, Inland Congregations United for Change

**CVRWMG**

Berlinda Blackburn, CWA
Sara Toyoda, IWA
Mark Krause, DWA
Katie Ruark, DWA
David Tate, DWA
Patti Reyes, CVWD
Rosalyn Prickett, RMC
Randy Raines, RMC
Kathy Caldwell, RMC
Leslie Dumas, RMC
Crystal Mohr, RMC
Daniel Cozad, IPM

**Meeting Objectives:**

A. Keep Participants Up-to-Date on the Coachella Valley DAC Outreach Program, including Updated Characterization Maps
B. Provide an Overview of Non-Profit Contracting for the DAC Outreach Program
C. Provide an Update on Groundwater Quality and Flood Risk Studies

**Meeting Notes:**

**Welcome and Introductions**

Patti Reyes, Coachella Valley Water District (CVWD), welcomed the meeting attendees on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the

Coachella Valley Integrated Regional Water Management (IRWM) Program and the DAC Outreach Program, which is a companion program to the IRWM Program.

Kathy Caldwell, RMC Water and Environment (RMC), provided an overview of the agenda and meeting objectives.

**Overview and Status of Coachella Valley IRWM DAC Outreach**

Kathy Caldwell, RMC, provided an overview of the Disadvantaged Community (DAC) Outreach Program. The purpose of this program is to expand upon previous DAC outreach to target individuals and groups representing DAC issues, and to also engage members of DAC community in order to frame and articulate water management issues facing DACs. The program is a pilot program that was designed to improve outreach to DACs with respect to the IRWM Program; as such, the DAC Outreach Program is considered a companion program to the IRWM Program.

**Discuss Non-Profit Assistance for the DAC Outreach Program**

One component of the DAC Outreach Program will include hiring local non-profit organizations to provide on-the-ground support to the DAC Outreach Program. Local organizations will be hired to provide local expertise and knowledge on DAC issues. The non-profit organizations will provide support through three primary tasks: outreach, mapping, and a final report.

In September the DAC Outreach team distributed a form (which was also distributed online) to all stakeholders, which was intended to capture all potential non-profit partners interested in participating. Since that time, interviews were conducted and a preliminary selection has been made. The next step in this process will be to finalize contracts, and begin work in January of 2013.

The non-profit organizations will play a large role in refining DAC maps and helping to characterize the locations of DACs and their specific water-related issues. This will be done through ground-validating existing data through field work, and talking with members of the community.

**Update on DAC Groundwater Quality Evaluation**

Leslie Dumas, RMC, provided an overview of the groundwater quality evaluation that is being conducted as part of the IRWM Plan Update. She noted that the current step of this evaluation is to identify “areas of concern” (AOC). Areas of concern include DACs that are not served by municipal water suppliers, and are located in areas where the groundwater quality is known to exceed maximum contaminant levels (MCLs). Information available from the Coachella Valley water purveyors as well as publically available state and federal data has allowed the technical team to identify areas of concern as well as constituents of concern in those areas. The data that was analyzed shows that there are four primary constituents of concern: arsenic, fluoride, nitrate, and uranium. The next step in the analysis is to determine potential solutions for addressing the various constituents. According to information from the EPA, membrane separation (which includes reverse osmosis), is the best available technology for addressing each constituent potentially present in local groundwater basins. Future steps in this process will involve a data gap analysis to determine more information that may be useful such as the exact location of wells, the volume of water being pumped and used, and a confirmation of water quality at each well. Following the data gap analysis, the technical team will develop an outline for a monitoring program that can potentially be implemented to address identified data gaps and other outcomes from the planning study.

Questions/Comments

- A lot of DACs use drinking water that is not reported at all, because it is not regulated. Is there any attempt to describe groundwater quality in those areas?
    - Yes, we have put out requests for additional data, especially at the Federal-level. We do have some data for those areas, because the government has some monitoring wells within proximity to private groundwater wells.
- Does this assessment take into consideration new or anticipated MCLs?
    - No, this assessment only considered existing MCLs.
- How is "community" defined? Is there a threshold for how many people are needed to define a community?
    - This is a good question – we will look into the SWRCB document titled, "Communities that Rely on Contaminated Groundwater" to see if they specify a population threshold.
- There is a gap between AOC 2 and AOC 4 – is this because of a lack of data? There are arsenic-related groundwater quality issues there.
    - Yes, this is due to a lack of groundwater quality data for that area. We will expand the area to ensure that this entire area is covered, and also do additional research to see if we can find data for that area.
- Mike Gialdini from Supervisor Benoit's office can potentially get data from the Bureau of Indian Affairs (BIA) for the area that is missing between AOC 2 and AOC 4. Supervisor Benoit's office has been working with BIA and other federal agencies to obtain such data.
- The Regional Board also has a Study Group that is looking into gathering data throughout the Coachella Valley, and potentially has groundwater quality data for the Region.
- There are serious groundwater quality issues in the East Valley due to previous activities that involved dumping of sludge from the San Diego Bay. The Department of Toxic Substances Control (DTSC) used to monitor this area, but they no longer monitor it because the site no longer accepts hazardous waste.
- Please note that in areas where there is an aquitard, monitoring wells generally only measure above the aquitard and do not monitor low-level groundwater. It is important to note the quality associated with the depth of groundwater, because, in this same area (East Valley), the Coachella Valley Water District has deep groundwater wells, and the groundwater system in this area is healthy. Also, CVWD offers groundwater quality testing, and can be of assistance in this regard.
- Sergio Carranza from PUCDC can provide water quality data from mobile home park sampling, which has been conducted with CVWD.
    - *Patti Reyes will look into whether or not CVWD maintains a database of their groundwater quality data.*
- Work conducted by PUCDC demonstrates that reverse osmosis systems are able to remove approximately 90% of arsenic from the groundwater, indicating that these systems are very effective.
- As a potential treatment alternative, please consider suggesting drilling deeper wells rather than only installing on-site treatment systems.

- Please add “reverse osmosis” into the “Membrane Separation” column in the assessment – this will make it clear to folks what is meant as reverse osmosis is much more familiar than membrane separation.
- We know that mobile home parks and other communities in the East Valley tend to be under-counted in the US Census data – have you considered using other data sources?
    - This is the primary purpose of the non-profit contracting: to ground-truth existing data (such as Census data) with real on-the-ground data.
- The County of Riverside has a database of all permitted mobile home parks, and also has information about those on the way to become permitted. Contact Mike Gialdini for this information, which is available through the County’s Code Enforcement department.

Kathy Caldwell then provided an overview of a draft survey, which would be conducted by the non-profit partners as part of the DAC Groundwater Quality Evaluation. Ms. Caldwell provided an overview of the survey questions, then asked if there were any comments or suggestions.

Questions/Comments

- You need to make sure to talk with Tribal Council before conducting these surveys on tribal lands. Also, you should make sure that you are conducting the survey with someone who would be trusted by tribal members, or you will not likely have people respond.
- The same is true across the East Valley mobile home parks. You need to be very careful about how you approach people, or they will not be likely to respond. Make sure that you know somebody such as the mobile home park owner or a resident – this will help establish trust and increase the likeliness that people will talk to you. Also, be aware that residents have a history of not reporting issues because they are afraid of retaliation – this may deter people from providing honest answers to the survey questions.
- In general, the promotores must have trust and established relationships in the community in order to be effective.
- Consider explaining to tenants and community members that in order to develop long-term solutions, we must first fully understand the problem.
- Are there any plans to have the survey reviewed by the Humans Ethics Commission or other party that would evaluate the survey? If being conducted through Loma Linda University, the survey would likely need to be funneled through the Institutional Review Board.
- Residents may not have information about contamination, but they will know about things onsite such as flooding or if the septic tanks fail or overflow. Consider asking these more simple questions to infer information about contamination, etc.

**Presentation of Updated DAC Characterization Maps**

Daniel Cozad provided an overview on the initial DAC characterization maps, noting that the primary purpose of this exercise is to use Census and demographic data to try to better understand key issues in the Coachella Valley. The maps have been updated since the previous DAC Workshop in order to take into consideration comments that were received, and provide additional detailed maps about specific DAC areas.

Daniel then walked the group through each map, describing what each map represents. He noted that there are 14 discrete DAC areas in the Coachella Valley, which have been mapped at a more refined level. He asked the group if there is any information or feedback, noting that

everything, including what the communities are called, needs to be vetted through stakeholders to ensure that the maps are accurate and cognizant of local issues, etc.

Questions/Comments

- While the MHI is a good indicator, it would likely be more useful to look at the poverty level. Poverty level, which takes into consideration household size, is a better indicator. For example, in the Coachella Valley population and household size tend to increase towards the south and east – this means that the poverty level is generally higher in those areas, where a similar income is used to provide for a larger family. For example, a retired couple who earns $40,000 per year is at a much higher poverty level than a family of six who lives off the same income.
- It is possible that polanco parks exist in the tapestry areas classified as “Top Rung”, which in many cases are agricultural lands.
- Agricultural wells, which were not intended for drinking water purposes may be used by polanco parks. These wells are often shallow and have groundwater quality issues.

**Next Steps**

Kathy Caldwell closed the meeting by thanking attendees, and informing them how to be involved in the DAC Outreach Program. She asked attendees to please contact an IPM or RMC team member with any additional questions. Kathy also encouraged attendees to stay for the Planning Partners meeting, which will begin at 1 p.m.

# Coachella Valley Disadvantaged Community (DAC) Outreach Program
# Community Water Workshop – Eastern Coachella Valley

**Tuesday June 18th, 2013**
**5:00 p.m. – 7:00 p.m.**

**San Jose Community and Learning Center**
**69455 Pierce Street**
**Thermal, CA 92274**

## Notes

*Italics denote action items*

### Meeting Notes:

### Welcome and Introductions

Matthew Doyle, President of the San Jose Community and Learning Center (Center), welcomed the meeting attendees to the Center. He stated that this workshop was the first to be held in the Center, a new facility for the eastern Coachella Valley, which will provide important resources to the community. Sister Gabriella Williams, Director of Programs for the Center, also welcomed the group and thanked Sergio Carranza, Executive Director of Pueblo Unido Community Development Corporation (PUCDC) for organizing the meeting.

Kathy Caldwell, RMC Water and Environment (RMC), provided an overview of the agenda and meeting objectives.

### Background and Purpose of DAC Outreach Project

Kathy Caldwell, RMC, provided an overview of the Disadvantaged Community (DAC) Outreach Program. The purpose of this program is to expand upon previous DAC outreach to target individuals and groups representing DAC issues, and to also engage members of DAC community in order to frame and articulate water management issues facing DACs. Ms. Caldwell explained that the DAC Outreach Program is a companion program to the Integrated Regional Water Management (IRWM) Program that has been active in the Coachella Valley since 209.

Kathy Caldwell provided an overview of IRWM planning and DAC outreach efforts, noting that there are two distinct yet interwoven planning efforts being conducted. She explained that the first effort, the DAC Outreach Program has five main components:

- Completing directed outreach to DACs to create a database of stakeholders that are interested or involved in DAC-related issues.
- Identify where DAC populations are located within the Coachella Valley.
- Work with identified stakeholders and DAC populations to characterize issues faced by DACs.
- Work to identify DAC issues through the creation of projects that could potentially be funded with Proposition 84 (IRWM) funding.

- Coordinate DAC Outreach efforts with the larger IRWM planning effort.

Kathy Caldwell then briefed the group on the overall IRWM program. She provided an overview of the history of IRWM planning in the State of California and in Coachella Valley, noting that the three goals of the State's IRWM Program are: develop long-term water supply reliability, improve water quality, and protect natural resources. The first Coachella Valley IRWM Plan was adopted in 2010 (available on www.cvrwmg.org), which made the region eligible for Proposition 84 funding. In Round 1 of Proposition 84 funding, in 2011, the Coachella Valley was awarded $4 million in grants. The Coachella Valley IRWM Region generally follows the Whitewater River watershed, but also extends to encompass Salton City. The Coachella Valley IRWM planning efforts are led by the Coachella Valley Regional Water Management Group (CVRWMG), which includes the Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District.

## DAC Mapping and Surveying Approach

Dr. Ryan Sinclair, Loma Linda University (LLU) provided an overview on the DAC mapping and surveying, which was conducted as part of the DAC Outreach Program. Dr. Sinclair explained that the purpose of this exercise was to more clearly define where the DACs are located throughout the Coachella Valley, and to conduct a survey of residents to understand their issues pertaining to water management. This portion of the program was conducted by LLU and two local non-profit organizations: El Sol Neighborhood Educational Center (El Sol) and PUCDC.

As of the East Valley Workshop, the survey team had completed 196 surveys in the West Valley and over 150 surveys in the East Valley. Dr. Sinclair explained that surveys were conducted by groups containing LLU students and promotores from El Sol and PUCDC. To-date, the group has gathered a lot of very useful information pertaining to the location of DACs and to water-related issues that are faced by DACs. The team will continue to finish surveys in the East Valley, and will have the data ready to present to stakeholders in September of 2013.

## Community Mapping Exercise

Dr. Ryan Sinclair then asked meeting attendees to participate in a brief mapping exercise. Meeting attendees had already been grouped into tables according to where they live, and would be completing the exercise with their designated group. During this exercise, attendees would be given a large piece of paper and asked to draw a localized community (apartment or mobile home park) where they live. In the drawing, they were asked to color-code information as follows:

- Black Ink would indicate functioning infrastructure such as roads and buildings.
- Blue ink would indicate resources such as groundwater wells and lagoons.
- Red ink would indicate challenges and issues.

The groups were given the appropriate materials and asked to draw their communities. Once drawings were completed, a representative from each group gave a presentation of their drawing. Below is a summary of each drawing as presented by meeting attendees:

1. Oasis: Oasis Mobile Home Park
    - Map shows the Oasis Mobile Home Park (infrastructure) and septic systems (black).
    - Map shows a wastewater lagoon that was shut down by the government (red).
    - Red ink in the street shows where wastewater (black water) from the septic systems leaks into the streets.

- The map also shows that the red area (leaking wastewater) is in very close proximity to the mobile home parks and to the groundwater well. There is concern that the black water contaminates the park's drinking water well.
- Red ink in the corner of the mobile home park shows an area where trash is illegally dumped. There is concern about the proximity of the trash pile to the groundwater well, and potential contamination.
- Red ink in the streets also indicates flooding, which happens when it rains. Flooding also causes issues with access – when it rains the ground erodes (the roads and ground are not paved), and cars cannot access the park.
- The group indicated that the conditions described for this park also apply to two other neighboring mobile home parks: La Cienega and Rancho los Ferros

2. Mecca: Lake St. Anthony Mobile Home Park
    - Map shows the Lake St. Anthony Mobile Home Park (black ink), which has about 92 units.
    - Map shows wastewater lagoons, which are very close to the mobile home park units.
    - Map shows (red ink) flooding that covers almost the entire park. The flooding also causes access issues as the entire park is un-paved. Access issues here are severe as the school bus has access issues when picking up children for school. This forces children to wait for the bus along Highway 111, which is very dangerous.
    - Map shows red ink throughout the park as an indicator of electricity issues.
    - The mobile home park has blue ink (resources) associated with a water well that is being connected by PUCDC.
3. Pierce: Avenue 69 Mobile Home Park
    - Map shows the Avenue 69 Mobile Home Park (black ink).
    - Map shows septic system issues, as black water comes up from the systems.
    - Map shows severe flooding issues, which cause access issues. When there is a severe rain and flooding, no cars (even emergency vehicles) can access the park.
    - Map shows a pile of rocks that spontaneously ignites – some residents believe due to satanic activity. Others believe that this is a dump site that has burning trash beneath the rocks.
4. Indio: Sunbird Mobile Home Park
    - Map shows the Sunbird Mobile Home Park (black ink) along Highway 86.
    - Map shows (red ink) overflowing septic tanks in the area.
    - Map shows (red ink) wastewater lagoons from Valley Sanitary District, which present odor issues to residents.
    - Map also shows that residents in the area, especially children, suffer from asthma and other health issues.
5. West Thermal: Harrison/Avenue 66 Mobile Home Park
    - Map shows that there is a need for drinking water and sewer infrastructure.

- Map shows that there are no recreational facilities (playground, etc.) for the children.
- Map shows that there is no paving or electricity. Both of these things cause safety issues as children play outside in the dark at night and may be hit by cars. Additionally, the paving issue presents access issues as others have mentioned.

Kathy Caldwell thanked each group for their input, and explained that the next step of the exercise would be to discuss potential solutions to each of the issues that were raised by the groups. Ms. Caldwell explained that part of the DAC Outreach Program includes limited funding to complete design and engineering for a few projects. The design and engineering work will develop projects to the necessary level to be competitive for IRWM funding or other funding sources. On this topic, Ms. Caldwell noted that the meeting packet included a form for stakeholders to fill out to further articulate potential projects to be considered for funding.

Below is a summary of the potential solutions that were discussed for each of the five mobile home parks described above:

1. Oasis: Oasis Mobile Home Park
    - Residents believe that there is an organizational issue – help is needed to organize the community. The current issues are extreme, and need a lot of help.
    - Another issue is that this park is on tribal land – residents are concerned that this will impact what can be done.
    - Residents think that the government should come fix conditions in the community. There is not enough money for basic infrastructure in this community, although it seems like the government has money available for other things.
    - A mobile home park owner in the area was present at the meeting, and stated that they would be open to making infrastructure improvements.
2. Mecca: Lake St. Anthony Mobile Home Park
    - Residents believe that full-scale infrastructure: connection to the water and sewer system, electrical upgrades, and pavement are necessary.
    - In the short-term, the park has point-of-use reverse osmosis systems installed by PUCDC to resolve drinking water issues.
3. Pierce: Avenue 69 Mobile Home Park
    - Residents see paving as the primary issue and the most pressing issue. Flooding and erosion are the biggest issues.
    - Residents see the overflowing septic systems as the second-largest issue, but do not know how to resolve this issue.
4. Indio: Sunbird Mobile Home Park
    - Residents believe that the best solution would be to connect to the local sewer system, and to put in internal piping systems in place of the wastewater lagoons.
    - Residents see the need to purchase bottled water as the biggest issue: the water is not safe to drink.
    - Residents believe that detention basins on the property could be used to hold flood flows.

- Issues are considered severe, and believe that relocation (such as what happened with the Duroville residents) would be a last resort, but is an option.

5. West Thermal: Harrison/Avenue 66 Mobile Home Park
    - Potable water is seen as the largest issue in this mobile home park. Overflowing septic systems is the second issue.
    - Residents are unaware of potential solutions, but believe that governmental intervention is required.

## Questions and Comments

Kathy Caldwell thanked each group for their input, and invited all meeting attendees to ask any questions or make any comments. Below is an overview of the questions and comments received and answers (*in italics*).

- If we were interested in getting money for preliminary design and engineering, who would we meet with.
    - *The first step will be to synthesize the information received at the meeting. Please fill out a project concept form for consideration, and contact Kathy Caldwell with any additional questions.*
- What system will be used to determine who is helped (what projects are selected)?
    - *The project team will develop a set of criteria, which will be applied to all projects equally.*
- What will happen with mobile home parks on tribal lands? Can they get help too?
    - *Tribal lands to present unique jurisdictional challenges, but this does not mean that no help is available. Federal funding may be the most appropriate for projects on tribal lands. The biggest issue would be to find a sponsor, and make sure that tribal land owners will agree to the project on their land.*
- Can we have our water tested to make sure it is safe?
    - *If you are located within the Coachella Valley Water District, you can call and have your water tested. There are pamphlets (in English and Spanish) on the back table with the necessary information.*

## Next Steps

Kathy Caldwell thanked everyone for attending the meeting. She noted that there will be another workshop in the West Valley on June 20th. Information for that meeting is:

- **DATE:** June 20th, 2013
- **TIME:** 5 p.m. - 7 p.m.
- **LOCATION:**
  DHS Family Resource Center (in the Kmart shopping center)
  14201 Palm Drive Suite 108
  Desert Hot Springs, CA

There will be another meeting on September 12th (location TBD) – please give us your contact information, and we will send you the details. Any questions, please contact Kathy Caldwell: kcaldwell@rmcwater.com or (310) 566-6460.

# Coachella Valley Disadvantaged Community (DAC) Outreach Program
# Community Water Workshop – Western Coachella Valley

**Thursday June 20th, 2013**
**5:00 p.m. – 7:00 p.m.**

**DHS Family Resource Center**
**14201 Palm Drive, Suite 108**
**Desert Hot Springs, CA**

## Notes

*Italics denote action items*

### Meeting Notes:

### Welcome and Introductions

Larry Singh, Director of the DHS Family Resource Center, welcomed the meeting attendees to the Center. He thanked Susie del Toro of El Sol Neighborhood Educational Center (El Sol) for putting the meeting together. John Soulliere of Mission Springs Water District (MSWD) also thanked meeting attendees and organizers for coming and for dedicating their evening to discuss important water-related issues in the West Valley.

Kathy Caldwell, RMC Water and Environment (RMC), provided an overview of the agenda and meeting objectives.

### Background and Purpose of DAC Outreach Project

Kathy Caldwell, RMC, provided an overview of the Disadvantaged Community (DAC) Outreach Program. The purpose of this program is to expand upon previous DAC outreach to target individuals and groups representing DAC issues, and to also engage members of DAC community in order to frame and articulate water management issues facing DACs. Ms. Caldwell explained that the DAC Outreach Program is a companion program to the Integrated Regional Water Management (IRWM) Program that has been active in the Coachella Valley since 209.

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- Work to identify DAC issues through the creation of projects that could potentially be funded with Proposition 84 (IRWM) funding.
- Coordinate DAC Outreach efforts with the larger IRWM planning effort.

Kathy Caldwell then briefed the group on the overall IRWM program. She provided an overview of the history of IRWM planning in the State of California and in Coachella Valley, noting that the three goals of the State's IRWM Program are: develop long-term water supply reliability, improve water quality, and protect natural resources. The first Coachella Valley IRWM Plan was adopted in 2010 (available on www.cvrwmg.org), which made the region eligible for Proposition 84 funding. In Round 1 of Proposition 84 funding, in 2011, the Coachella Valley was awarded $4 million in grants. The Coachella Valley IRWM Region generally follows the Whitewater River watershed, but also extends to encompass Salton City. The Coachella Valley IRWM planning efforts are led by the Coachella Valley Regional Water Management Group (CVRWMG), which includes the Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, and Mission Springs Water District.

## DAC Mapping and Surveying Approach

Dr. Ryan Sinclair, Loma Linda University (LLU) provided an overview on the DAC mapping and surveying, which was conducted as part of the DAC Outreach Program. Dr. Sinclair explained that the purpose of this exercise was to more clearly define where the DACs are located throughout the Coachella Valley, and to conduct a survey of residents to understand their issues pertaining to water management. This portion of the program was conducted by LLU and two local non-profit organizations: El Sol Neighborhood Educational Center (El Sol) and PUCDC.

As of the East Valley Workshop, the survey team had completed 196 surveys in the West Valley and over 150 surveys in the East Valley. Dr. Sinclair explained that surveys were conducted by groups containing LLU students and promotores from El Sol and PUCDC. To-date, the group has gathered a lot of very useful information pertaining to the location of DACs and to water-related issues that are faced by DACs. The team will continue to finish surveys in the East Valley, and will have the data ready to present to stakeholders in September of 2013.

## Community Mapping Exercise

Dr. Ryan Sinclair then asked meeting attendees to participate in a brief mapping exercise. Meeting attendees had already been grouped into tables according to where they live, and would be completing the exercise with their designated group. During this exercise, attendees would be given a large piece of paper and asked to draw a localized community (apartment or mobile home park) where they live. In the drawing, they were asked to color-code information as follows:

- Black Ink would indicate functioning infrastructure such as roads and buildings.
- Blue ink would indicate resources such as groundwater wells and lagoons.
- Red ink would indicate challenges and issues.

The groups were given the appropriate materials and asked to draw their communities. Once drawings were completed, a representative from each group gave a presentation of their drawing. Below is a summary of each drawing as presented by meeting attendees:

1. Corkill Park, Mobile Home Park
    - Map shows that septic tanks (overflowing) are the biggest issue in this community.
    - This is a large park, with approximately 150 units
    - Septic tanks in the middle of the park overflow into the streets and into houses.
    - There are basic issues associated with water and electricity: at times water pressure is very low, and there is no electricity.

- The entire park has issues with pine trees – the roots push into the pipes and break them. The pine needles get caught in ditches and cause flood problems.
- This mobile home park has lack of basic infrastructure, and residents do not feel that it is safe. There are particular safety issues associated with the lack of electricity – it is not safe for children to play at night.

2. Palm Drive Mobile Estates, Mobile Home Park

- This is a large park, with approximately 100 units
- The park has many infrastructure issues, and is not well-kept.
- There are issues with trees that push up the concrete and break pipes. Residents were told (by mobile home park owner) that they would need to pay to remove them.
- The power lines in the park are loose, and can break. It is also not safe for children to play here at night.
- There are other issues associated with animals – dogs and cats. There are cats everywhere, and they are dirty. There are dogs that people do not pick up after, and it is not pleasant to residents.
- Many people have issues associated with septic system overflows into the yards, or backing up into the homes.
- When it rains, water gathers and pools on the property and there are mosquitoes.
- The residents have expensive water bills, and wonder if the water is safe to drink. The community experienced un-notified water shut-offs, sometimes for days.
- Residents believe that this park is located within the City of Desert Hot Springs.

3. El Sol

- The El Sol organization provided a presentation on West Valley issues and potential solutions.
- They noted that one major concern is education regarding what can go down the drain – especially cooking oil. Many residents are not aware that this will destroy their septic systems.
- They also noted that there are many resources available, and El Sol is here to work with residents to resolve issues!

Kathy Caldwell thanked each group for their input, and explained that the next step of the exercise would be to discuss potential solutions to each of the issues that were raised by the groups. Ms. Caldwell explained that part of the DAC Outreach Program includes limited funding to complete design and engineering for a few projects. The design and engineering work will develop projects to the necessary level to be competitive for IRWM funding or other funding sources. On this topic, Ms. Caldwell noted that the meeting packet included a form for stakeholders to fill out to further articulate potential projects to be considered for funding.

Below is a summary of the potential solutions that were discussed for issues brought up during the meeting.

- For the issue of septic systems:
    - Residents would like regular maintenance and inspections to determine the issues. They do not know why there are regular overflows. Is it roots? Behavior? Unmaintained systems? Under capacity?

- For the issue of flooding:
    - Residents note that detention infrastructure is necessary. Some noted that there are detention basins on-site, but in bad locations (such as at the park entrance).
    - There is an issue with mosquitoes in the detention basins, so residents do not always like this option.
- For the issue of drinking water:
    - Residents do not believe that their water is safe to drink, and do not know if they are served water from a municipal provider. Residents want their water tested by the government.
    - MSWD noted that there are some concerns with testing. MSWD assures that water going into the park (at the master meter) is clean. The mobile home parks have internal infrastructure (piping) that may be compromised and could be contaminated.
    - It was also noted that mobile home park owners must agree to the testing before the agencies can do this work.

## Questions and Comments

Kathy Caldwell thanked each group for their input, and invited all meeting attendees to ask any questions or make any comments. Below is an overview of the questions and comments received and answers (*in italics*).

- In general it seems like government agencies should be able to help. These are permitted mobile home parks – if there is wastewater leaking in the streets and the water is not clean, then there are code violations that should be addressed.
    - *The projects could include educational materials about who to contact and how to contact the proper government officials.*
- Who can residents go to? Who would be enforcing these codes?
    - *Likely the City of Desert Hot Springs and the County of Riverside, depending upon where you live.*
- There is some concern about this code violation reporting. Must recognize that some of the municipalities simply come in and shut down parks once violations are reported – then residents lose their homes! Also, there is concern that the mobile home park owners will illegally try to push off costs for operations and maintenance to the residents.
    - *We can include all of this in the educational materials – thank you.*
- Why doesn't someone check up on this? Why do we have to go to them to report?
    - *We cannot answer the specifics of code enforcement for the municipalities, but in general they are experiencing staffing issues.*

## Next Steps

Kathy Caldwell thanked everyone for attending the meeting. She noted that there will be another meeting on September 12th (location TBD) – please give us your contact information, and we will send you the details. Any questions, please contact Kathy Caldwell: kcaldwell@rmcwater.com or (310) 566-6460.

# Coachella Valley Integrated Regional Water Management Program
# Disadvantaged Communities Workshop #5

**Wednesday, November 6, 2013**
**10:00 AM – 12:00 PM**

**Coachella Valley Water District**
**Training Room**
**75-515 Hovley Lane East**
**Palm Desert, CA 92211**

**DRAFT NOTES**
*Italics denote action items.*

**Attendees:**

**Stakeholders**

Melissa Sparks, DWR
Evon Willhoff, DWR
Jim Schmitt, Coachella Valley Engineers
Jacky Gonzales, Cabazon Band of Mission Indians
Margaret Park, Agua-Caliente Band of Cahuilla Indians
Mike Gialdini, Supervisor Benoit
Leticia DeLara, Supervisor Benoit
Dale Schafer, Imperial DAC CCOP
Sergio Carranza, Pueblo Unido CDC
Rodolfo Piñon, Pueblo Unido CDC
Carrie McLeod, USDA Rural Development
Michele Hassen, Leadership Counsel
Phoebe Seaton, Leadership Counsel
Laura Massie, California Rural Legal Assistance
Frank Kopcinski, California Rural Legal Assistance
Tim Roberts, SCSD
Jerry Rowling, Borrego Water District
Cynthia Manna, Imperial Valley Economic Development Corporation (IVEDC)
Robert Wilkinson, La Quinta Rotary
Jennifer Henke, Coachella Valley Mosquito and Vector Control District (CVMVCD)
Ryan Sinclair, Loma Linda University
Jaime Lopez, Loma Linda University
Susie del Toro, El Sol Neighborhood Educational Center
Maria Elena Kennedy, DAC Representative
Jim Sullivan, Coachella Valley Association of Governments

**CVRWMG**

Berlinda Blackburn, CWA
Castulo R. Estrada, CWA
Sara Toyoda, IWA
Mark Johnson, CVWD
Patti Reyes, CVWD
Mark Krause, DWA
David Tate, DWA
John Soulliere, MSWD
Rosalyn Prickett, RMC
Kathy Caldwell, RMC
Leslie Dumas, RMC
Crystal Mohr, RMC
Sally Johnson, RMC
Daniel Cozad, IPM
Diana Cozad, IPM

**Meeting Objectives:**

A. Provide an overview of the DAC Outreach Program and IRWM Program

B. Describe DAC outreach, surveying, and issue identification

C. Review four projects developed through program

D. Review accomplishments

**Meeting Notes:**

**Welcome and Introductions**

Patti Reyes, Coachella Valley Water District (CVWD), welcomed workshop attendees on behalf of the Coachella Valley Regional Water Management Group (CVRWMG), the five regional water suppliers in the Coachella Valley who are responsible for overseeing the Coachella Valley Integrated Regional Water Management (IRWM) Program. The group did self-introductions.

**General Background on IRWM Planning**

Kathy Caldwell, RMC, provided an overview of Integrated Regional Water Management (IRWM) Planning and the Coachella Valley IRWM Program. Ms. Caldwell also provided a brief overview of the workshop agenda and objectives, noting that the focus of this workshop was the Disadvantaged Communities (DAC) Outreach Program.

**Coachella Valley DAC Outreach Program Efforts**

Kathy Caldwell provided a brief overview of the Coachella Valley DAC Outreach Program. Ms. Caldwell explained that this was a sister program to the Coachella Valley IRWM Program, and funded through a separate grant from the California Department of Water Resources (DWR). The goals of the program were to expand upon previous DAC outreach conducted by the region, identify DACs that were overlooked by previous methods (such as small pockets of areas that are DAC) and to engage DACs to help identify priority water management issues and develop projects to address critical needs. She noted that two workshops were held in June 2013, with the support of local non-profits with existing relationships with area DACs, proved to be very successful.

Daniel Cozad, IPM, presented the DAC Outreach Program by reviewing past DAC outreach in the Coachella Valley IRWM region, noting that DAC outreach has been occurring in the region since before the formal foundation of the Coachella Valley IRWM program. He explained that the DAC Outreach Program sought to expand on these efforts, and used new techniques such as a "marketing style" database, bilingual outreach materials and door hangers distributed directly to residences to reach a greater number of stakeholders. Ms. Caldwell highlighted the important role of the CVRWMG's partnership with local non-profits in successfully reaching DACs in the region.

Ryan Sinclair, Loma Linda University, presented the DAC Survey and Mapping project. He explained that the surveying process used trained students and "promotores" to conduct surveys in areas that were identified as DACs, as well as areas selected by El Sol Neighborhood Educational Center (El Sol) and Pueblo Unido Community Development Corporation (PUCDC), two local non-profits that work regularly with DACs in the region. Mr. Sinclair introduced Susie del Toro, from El Sol, and Sergio Carranza, from PUCDC.

Ms. Del Toro explained that the survey efforts were successful because the promotores were trusted by the community because of past work of the promotores. She stated that they received a lot of feedback and were happy and surprised to find that people wanted to help find solutions for their water issues. Ms. del Toro also expressed surprise over the findings of which people do

not drink their tap water, even if it was safe to drink. She noted that some communities are far from cities and services, making it difficult to provide services to them, and to be aware of their existence and needs. She noted that the communities really opened up to the surveyors, and that a number of people contacted El Sol for assistance following the survey efforts.

Questions/Comments

- What are promotores?
    - Promotores are community health workers who are recruited from the communities in which they work. Promotoroes are trained for specific programs and education efforts. El Sol recruits and trains these promotores, and provides services in homes, schools, and churches, among other community areas, but primarily provides services to people where they are, rather than having people come to them for El Sol's services.
    - Ms. Reyes added that the promotores model is used by many non-profits (especially Latino non-profits) and that the Coachella Valley IRWM program benefitted from using the existing system and promotores program.
    - Ms. del Toro noted that the promotores program is expanding.
    - Mr. Sinclair added that Loma Linda University has a training program with El Sol.

Mr. Carranza explained that PUCDC works primarily in the East Valley. He said that the DAC Outreach Program was the first opportunity to expose the reality of the needs of the East Valley. Mr. Carranza stressed that this was only possible because of the non-profits' existing relationships with communities. PUCDC's community base is Polanco parks, approximately 30 parks with a total of 3,000 to 5,000 residents. Mr. Carranza said that the residents of these communities have a good understanding of their critical issues, and stated that the Short-Term Arsenic Treatment Program (funded under a Proposition 84 Round 1 Implementation grant) has been successful because the residents PUCDC serves identified arsenic as an issue. Mr. Carranza continued by explaining that efforts to find solutions began with feedback from the community, followed by interactive exchanges of ideas and information, which leads to the formulation of potential and viable solutions. Information was documented by the survey, and accessible. The workshops held in June were successful and allowed communities to identify their top issues and priorities. Overall, Mr. Carranza noted that communities were optimistic. He said that this was the largest outreach program and that the survey was very comprehensive. Some of the challenges to past outreach are that Polanco parks are dispersed and not well documented, and residents may perceive surveys as a threat to their community due to history of problems associated with having identified park issues. Agencies need to use the networks and relationships that local non-profits have with these parks just to find them and to let them know that surveyors will be visiting and do not pose a threat to their continued residence in the parks or a threat to the park's existence. Mr. Carranza explained that the combination of promotores with Polanco park leadership led to the success of the survey process and explaining the purpose of the survey to residents. Promotores and Polanco park leaders were able to utilize the strong community networks to let people know about the survey quickly and effectively. The combined efforts of these two groups also promoted cultural fluency for surveyors, which is important for effective outreach and awareness. Mr. Carranza finished by announcing that the first Institute of Community Training will be launched in the spring, and will include training on how to sustain mobile home park infrastructure. He emphasized that Polanco park communities love to learn and desire to have their communities be in compliance with regulations.

Questions/Comments

- John Soulliere, Mission Springs Water District (MSWD) said that there is a difference between data for the sake of data and using the survey process as an introduction to communities, and then leveraging it to build relationships. Mr. Soulliere congratulated the DAC Outreach Program team for going beyond the State's requirements and building these relationships.
    - Mr. Sinclair emphasized that the surveys were a true collaboration with the partner non-profits
- How long was the outreach/survey conducted?
    - Three months
- Was every household surveyed?
    - Households to be surveyed were selected based on appropriate statistical methods. Households represented 20-30 parks, with a random selection of addresses based on existing DAC maps, and an extra 100 households (50 from the East Valley and 50 from the West Valley) surveyed based on the non-profits' networks and knowledge of DACs.
- Many DAC communities are not on any maps. Identifying these communities is a huge asset for the region.
- What was the consideration for defining DACs? What is DWR's definition?
    - DACs are defined as communities with 80% or less of the Statewide MHI. Communities with 60% or less of Statewide MHI are considered severely disadvantaged.
- Did you only survey severely disadvantaged communities?
    - No, the randomly selected ones were chosen from severely DAC areas, but the additional 100 households selected by El Sol and PUCDC were not necessarily in severely DAC areas on the map.
- The next state water bond is concerned about leaving out DACs. However, there is concern over gaps from the census data.
    - This study first looked at data from the census block level, then tried assessing for severely DAC areas using affordability index. However, income is really the only metric that we currently have or are able to use unless there are people in the region who can help identify where DACs exist (such as NGOs like El Sol and PUCDC). Poverty areas can be helpful in identifying DACs, but it all depends on scale. Some DACs are located immediately adjacent to wealthy areas, and this detail can get lost.
- What kind of language should be considered for the bond in order not to lose DACs? What income level?
    - DWR guidelines say 80% of MHI qualifies as a DAC or a more detailed study can be used to identify DACs.
    - There is no uniformity across state agencies on how to identify DACs or what qualifies as a DAC.
    - Clear legislative intent would be helpful.
- The problem with identifying DACs is that communities don't even show up in surveys or the census. There needs to be a way to document them.

- Census does not visit everywhere
- This challenge will be discussed in the final survey report
- Polanco parks have fewer than 13 homes, and permitting is faster for them. They are only in the East Valley. The West Valley doesn't have Polanco parks.

Following this discussion, Mr. Sinclair presented the findings of the survey results. He presented maps of the results and discussed some of the major findings. He noted that because the data came from surveys and was not independently confirmed, it represents only the perceived situation by residents, and cannot be assumed to be the actual situation. Mr. Sinclair explained that residents in the East Valley were more aware of their water sources than residents of the West Valley, and that the East Valley had a poorer perception of the quality of their tap water. Though the East Valley seemed have more on-site wastewater treatment systems (such as septic systems), people were often unaware of what type of wastewater systems they used. West Valley residents were frequently unaware of what wastewater system they had. Generally, residents were aware of flood problems, and reported flood issues in areas within mapped flood zones or near the Whitewater River Stormwater Channel.

Questions/Comments

- Did the team survey only the park owners or did it survey residents?
  - Surveys were conducted with residents – not all park owners were notified in advance of the survey.
  - Park owners were used as a link to the communities, but the survey focus was on the residents.
  - *This will be clarified in the DAC chapter of the 2014 Coachella Valley IRWM Plan and other areas of the 2014 Plan that discuss the survey results.*

**DAC Project Overview**

Kathy Caldwell introduced the DAC Project by explaining that the DAC workshops validated the results of the survey when workshop participants identified key issues and where these were located. Ms. Caldwell explained that DAC Workshops were another way to get information about issues and locations. She stated that the workshops generally reinforced the known issues, and that the issues were (1) wastewater, (2) drinking water, and (3) flood.

DAC projects had to meet the following criteria to be considered by the DAC Outreach Program:

- Does the project address an identified issue?
- Does the project have an implementing agency?
- Is the project consistent with the 2009 IRWM Plan objectives?
- Will the project either leverage other funding or be able to leverage other funding in the future?
- Is the project cost effective?

Questions/Comments

- Future meetings should consider including non-water/sewer parties because attendees at the DAC Workshops brought up a wide variety of issues. Other agencies could have leveraged those meetings.
  - Many of the issues brought up during the workshop are problems communities could solve themselves but did not know that they could or how to do so.

### *DAC Project 1: Educational Materials*

Mr. Daniel Cozad presented the first DAC Project, Educational Materials. He noted that El Sol is currently translated the materials from English to Spanish, and that the Spanish version would be available for public review by December 1, 2013. The educational materials contain basic information regarding sewer and septic systems, system maintenance, which agencies are in charge of which systems or issues, and contact information by type of issue that will enable communities to get the help they need for their issues.

Questions/Comments

- Comments are still being accepted on the handouts, the English versions are available as Appendix G in the Public Draft 2014 Coachella Valley IRWM Plan, and some copies are available as workshop handouts.
    - Many of the contact numbers are not local. Can local numbers be provided?
    - *The County will provide local numbers for as many of the listed agencies as possible*.
- This handout was designed as a resource for the Coachella Valley, but also as a template for other areas, which could replace all the contact information with the appropriate information for their regions.

### *DAC Project 2: Connection Opportunities*

Leslie Dumas, RMC, presented the second DAC Project, Connection Opportunities. This project was designed to help identify water and wastewater connection opportunities for DACs in the region. Through the use of multiple mapped data, DACs that appeared to be near service areas were sorted into connection feasibility classes based on distance to existing water and wastewater mains. Next steps are to clarify the data, starting with high feasibility sites. We will also need to learn more about the feasibility are each sites. Periodically the sites will need to be reprioritized and continued outreach should be conducted.

Questions/Comments

- How was the “Multiple sites to one pipeline” classification scored for feasibility? Some sites may be in a different distance classification than other sites within a single “multiple sites to one pipeline” site.
    - This was mainly a judgment call. For any of these sites, a further investigation of feasibility must be conducted.
- Can we use a cost per dwelling unit when assessing projects?
    - Part of the recommended next steps for assessing feasibility includes costs and willingness, etc.
- Did the analysis consider pressure zone, pump stations, or lifting?
    - No, that was beyond the scope of the project
    - The East Valley is flat, so any projects in that area would need pump stations and lifts.
- Was the analysis done Valley-wide or only in the survey areas?
    - Valley-wide.
- Do we need to look at the permanence of the communities? Don’t some of these parks move or only have seasonal residents?

    - Not all parks move.
    - Need to determine the feasibility criteria
- Some communities may have other, non-physical, circumstances that would exclude or affect their feasibility (example: are they up to code?)
    - Despite the feasibility analysis, there is a chance that we may encounter other issues when implementing connections.
    - Parks are working to be in compliance, and trying to address all code violations or issues as a package. For example, projects to bring parks into fire code compliance could provide an opportunity to add a municipal connection.

***DAC Project 3: Polanco Park Septic Upgrades***

Rich Bichette, RMC, presented the third DAC Project, Polanco Park Septic Upgrades. This project was designed to help assist local DACs in addressing public health issues and potential groundwater contamination, as well as provide guidance for implementing such a project. It will also serve to prepare these communities for future funding opportunities. Mr. Bichette gave an overview of the project and the process for designing septic upgrades for Polanco Park. Using four demonstration sites, the project has developed a roadmap for similar projects. Steps include soils testing, assessing wastewater treatment alternatives - conventional septic systems, nitrogen removal (for areas with high nitrogen or nutrient issues, not applicable to the Coachella Valley), emerging technology, and centralized and decentralized options. Mr. Bichette explained that for the region's Polanco Parks used in this project, a decentralized conventional system was best, with one system serving 2-3 homes. Mr. Bichette explained that the framework created by this project outlines the steps required to determine the type of system as well as potential permits that may be required. The project also prepared design plans, which have positioned the sites for future permitting.

<u>Questions/Comments</u>

- Did this project consider the steps and costs required to clean up the results of failed systems?
    - No. Typically cleaning would be done when installing the new system, but Mr. Bichette was not certain of the regulations or potential regulatory penalties.
- Motivation for this project is the fund regional projects in the future. The framework will allow regional projects to be developed for Proposition 84 Round 3 Implementation grants. This will allow the Region to get money that can be used to solve wastewater and septic problems and implement the framework. This project does not implement the framework or design.
- Funding was for design only?
    - There was no funding for implementation. It is difficult to get large amounts of money for sewer project serving small populations. Septic provides a near-term, cheaper, solution until funding and opportunity are available for conversion to sewer.
    - Grants are small but will still be able to implement these designs.
- What are the average construction budgets for these designs?
    - It costs $10,000 - $15,000 per system. Each system serves 2-3 homes. Approximately 6 systems per park. Construction costs would be between $60,000 and $90,000 per park. Engineering only costs about $5,000 per park.

### *DAC Project 4: DAC Groundwater Quality Treatment*

Leslie Dumas, presented the fourth DAC Project, DAC Groundwater Quality Treatment. Ms. Dumas explained that this project was designed to be used as a template for bringing safe drinking water to communities. It is a model project that can easily be implemented by local DAC organizations. In the region, five constituents of concern may be present in groundwater, of which the greatest concern is arsenic. Of the different treatment systems considered by the project, only reverse osmosis was effective as treating all five constituents, including arsenic. The project identified key challenges to providing clean drinking water to DACs. These challenges included regulatory requirements, the ability of point-of-use (POU) systems address multiple contaminants, the cost of units and unit maintenance, sustainability of treatment system programs, obstacles to installation, and brine disposal (for point-of-entry systems). Ms. Dumas explained that the project team coordinated with local non-profits and other organizations working with DACs and working on drinking water concerns. The project developed a guide for buying, installing, and testing under the counter reverse osmosis systems. It also developed an operations and maintenance (O&M) manual for monitoring and maintain systems. For smaller system (those with fewer than 15 connections), the Rotary Club's POU treatment system program is a good model. The project also recommended that for larger systems (those with over 15 connections), the Short-Term Arsenic Treatment Program be used as a guide for an effective DAC drinking water treatment program.

Questions/Comments

- Does the county regulate communities with 25 units?
    - The county regulates all permitted mobile home parks, no matter their size.
- Are the data used for this project going to be shared?
    - Yes, and the draft report for this project will be available for public review and comment by December 1, 2013.

### Program Deliverables

Kathy Caldwell presented the outcomes of the DAC Outreach Program and the deliverables that will be completed as part of the DAC Outreach Program. Ms. Caldwell described how the DAC Outreach Program led to the development of a new chapter in the 2014 Coachella Valley IRWM Plan on DACs that was mad available for review with the Public Draft of the 2014 Plan on November 4, 2013 (available on the CVRWMG website, www.cvrwmg.org). She noted that the appendices for the DAC chapter will be available (online and sent out via email) for review and comment by December 1, 2013. These appendices will contain the deliverables from each of the four DAC projects. Ms. Caldwell also explained that local organizations also wrote a memorandum on DAC participation in the IRWM Program, with a focus on challenges to DAC participation. The primary deliverable for the DAC Outreach Program, in addition to the individual DAC project deliverables, is a DAC Outreach Program Model that can be used in other areas of the State that face similar DAC issues.

### Review of Accomplishments

Kathy Caldwell reviewed the accomplishments of the Coachella Valley DAC Outreach Program, including the outreach meetings and workshops, Promotores and student training, survey results, DAC proejcts, the region's contribution to Statewide DAC efforts, and an increased DWR commitment to the region.

**Next Steps**

Kathy Caldwell presented the next steps for the DAC Outreach Program. These steps include the timeline for deliverables presented below, as well as identification of opportunities to continue DAC engagement and coordination, addressing challenges to outreach, applying for Proposition 84 Round 3 Implementation Grant funding, and completion and implementation of the 2014 Coachella Valley IRWM Plan.

- Program deliverables available for public comments and review – December 1, 2013
- Program deliverables submitted to DWR – December 2013
- Completion of the 4 DAC projects – December 2013

**Question and Answer Session**

Workshop attendees were encouraged to stay for the 2014 Coachella Valley IRWM Plan Public Workshop to be held that afternoon (1:00 – 3:00 pm) in the same room.

# Coachella Valley Regional Water Management Group
# Public Workshop
# Draft 2014 IRWM Plan Update

**Wednesday November 6, 2013**
**1:00 – 3:00 pm**

**Coachella Valley Water District**
**Training Room**
**75-515 Hovley Lane East**
**Palm Desert, CA 92211**

## DRAFT NOTES

*Action items in italics*

**Attendees:**

**Planning Partners**

Dale Schafer, Imperial IRWM
Evon Willhoff, DWR
Frank Kopcinski, CRLA
Jennifer Henke, Coachella Valley Mosquito & Vector Control District
Jim Schmitt, Coachella Valley Engineering
Jim Sullivan, CVAG
Jon Rokke, RWQCB
Laura Massie, CRLA
Margaret Park, Agua Caliente Band of Cahuilla Indians
Melissa Sparks, DWR
Michele Hasson, Leadership Counsel
Mike Gialdini, Supervisor Benoit
Octavio Gonzalez, Rep for Raul Ruiz MD
Phoebe Seaton, Leadership Counsel
Ron Buchwald, Valley Sanitary District
Tim Roberts, SCSD

**CVRWMG**

Berlinda Blackburn, CWA
Castulo R. Estrada, CWA
Sara Toyoda, IWA
Mark Krause, DWA
Katie Ruark, DWA
David Tate, DWA
Patti Reyes, CVWD
Ivory Reyburn, CVWD
John Soulliere, MSWD
Rosalyn Prickett, RMC
Crystal Mohr, RMC
Sally Johnson, RMC
Daniel Cozad, IPM
Diana Cozad, IPM

**Meeting Objectives:**

A. Keep participants up-to-date on the Coachella Valley IRWM Program, including schedule and key milestones
B. Present Draft IRWM Plan and solicit feedback
C. Share/capture other relevant thoughts and ideas for future discussion

**Meeting Notes:**

## Welcome and Introductions

Ms. Patti Reyes, Coachella Valley Water District (CVWD), welcomed everyone to the meeting. Introductions were made around the room.

## IRWM Program Overview and Planning Activities

Ms. Rosalyn Prickett, RMC Water and Environment, provided an overview of the IRWM Program. Ms. Prickett explained that IRWM planning is a regional planning strategy that involves stakeholder input and coordination between local agencies. In the Coachella Valley IRWM region, the program is headed by the Coachella Valley Regional Water Management Group (CVRWMG) consisting of five local water supply agencies (Coachella Water Authority, CVWD, Desert Water Agency, Indio Water Authority, and Mission Springs Water District). Ms. Prickett presented the IRWM grant funding the Region has been awarded, including a $4 million Proposition 84 Round 1 Implementation Grant, and the preliminarily awarded $5.24 million Proposition 84 Round 2 Implementation Grant. Ms. Reyes added that the region has been successful when asking for smaller amounts of money. For DAC projects, this means funding short-term solutions that keep project moving. Ms. Reyes noted that projects with lower costs and high number of beneficiaries are more successful in funding applications. Ms. Reyes told attendees that projects are selected for inclusion in funding applications because they met the needs and objectives of the 2010 IRWM Plan. She asked attendees to consider if the 2014 Draft IRWM Plan addressed their agency's goals when reviewing the draft plan. Ms. Reyes added that compared to the 2010 IRWM Plan, the 2014 Plan has had more time to gather detailed information for the Region, and therefore is more comprehensive than the 2010 Plan.

Ms. Pricket presented the role of the IRWM Plan in making the region eligible for Proposition 84 grant funds, and then presented the key components of the 2014 IRWM Plan Update process:

- Stakeholder Outreach
- Disadvantaged Community (DAC) Groundwater Quality Evaluation
- Salt and Nutrient Management
- Integrated Flood Management
- Groundwater Monitoring Assessment, and
- IRWM Plan Update

### *Salt and Nutrient Management Program (SNMP) Strategy*

Ms. Prickett presented the Salt and Nutrient Management Strategy developed as part of the 2014 IRWM planning process. She explained that it was developed with the CVRWMG and included three stakeholder workshops do discuss local groundwater and key concerns and receive feedback on the draft SNMP workplan, which was presented to the Regional Water Quality Control Board. Ms. Prickett added that this was just one phase of a multiphase process, and presented the steps that had already been undertaken as well as where the SNMP was expected to go from here.

### *Disadvantaged Community (DAC) Groundwater Quality Study*

The DAC Groundwater Quality Study sought to determine where poor groundwater quality was reported within DACs. Ms. Prickett explained that the study used local, State, and federal data, along with constituents of concern (arsenic, fluoride, nitrate, uranium, and hexavalent chromium), areas of concern, and existing groundwater plans to analyze groundwater quality

issues and potential solutions in DACs. The study found that many DACs are in rural or outlying areas, though some are within or adjacent to water agency services areas. Reverse osmosis systems were determined to be the best treatment option for DACs not on municipal supply. The study recommended expanding the existing Short-Term Arsenic Treatment program.

Questions/Comments

- How is adjacent to service area defined?
    - Adjacent to service area were areas near portions of an agency service area with pipelines (not all of a service area necessarily has pipelines). The focus was on outlying areas, and there is not a specific distance that led to an area being considered "adjacent". Did look at the other groundwater study completed as part of the DAC Outreach Program (and presented at the Nov. 6, 2013 morning workshop) to help determine this.
- Hexavalent chromium does not have an MCL yet, so how was it evaluated?
    - Originally hexavalent chromium was not included, but after the draft MCL was released it was added because it was a good opportunity to reassess our data so we did so in anticipation of future regulation using the draft MCL as our standard.

***Integrated Flood Management Study***

Ms. Prickett reviewed the Integrated Flood Management (IFM) study that was conducted for the 2014 IRWM Plan. She explained that the study created a mapping tool that incorporates IFM opportunity mapping (based on various features of an area) to identify which IFM approaches are applicable for a given area in the region. She also explained that IFM strategies were screened for use in the desert, that the study created a detailed fact sheet for IFM techniques, and that it defined priorities for implementation of IFM based on flood exposure.

Questions/Comments

- Where are the IFM fact sheets?
    - The fact sheet can be found in the IFM appendix to the 2014 IRWM Plan, but most of the information from the study and fact sheets has been synthesized and incorporated into the plan itself.
- What data sources were used?
    - This will also be in the IFM appendix to the Plan (appendix to be released by December 1, 2013).

***Groundwater Monitoring Assessment***

The Groundwater Monitoring Assessment compiled existing programs and program evaluations, and evaluated monitoring programs and the existing recommendations in the context of new work. It identified additional improvements and recommendations for basin-wide groundwater evaluation and quality monitoring.

Questions/Comments

- Using this process can we pinpoint what needs funding, and how to make them an IRWM project?
    - The draft 2014 IRWM Plan is available for review and can be downloaded from the CVRWMG website. *See the flyer for directions on how to access the plan.*

***Stakeholder Outreach***

Ms. Pricket presented a brief overview of the region's stakeholder outreach, including Planning Partners meetings and Issues Groups for DACs, Tribal Nations, SNMP, and IFM.

**Draft IRWM Plan Update**

Ms. Crystal Mohr, RMC, presented the 2014 Draft Coachella Valley IRWM Plan. Ms. Mohr presented the purpose and general and key changes for each chapter of the Plan to inform attendees of potential items they may want to focus on during their review of the draft 2014 Plan. The ten Plan chapters Ms. Mohr presented were Region Description, Issues and Needs, Disadvantaged Communities, Tribal Water Resources, Objectives, Stakeholder Involvement, Resource Management Strategies, Project Evaluation and Prioritization, Agency Coordination, and Framework for Implementation. The two chapters that were not presented were Introduction and References.

Mr. Daniel Cozad, IPM, presented the Disadvantaged Communities chapter. He explained that this chapter was developed as a result of the DAC Outreach Program and to highlight the importance of DAC participation in the Coachella Valley IRWM Program.

Ms. Mohr presented the Tribal Water Resources chapter as a new chapter for the 2014 IRWM Plan, and how this chapter was developed with input from five of the area tribes that chose to participate in the IRWM Program.

Other key changes that were presented included that the Water Supply section in the Region Description was fleshed out, and included discussion of DACs, people not on municipal supplies, and non-potable supplies. These changes were included because the Water Supply section from the 2010 Plan did not contain enough detail to fully describe the region's water supplies and water supply issues and needs. The Issues Group discussion included the four Issues Groups used during development of the 2014 IRWM Plan, but also a fifth "Ad-Hoc" Issues Group which provides the region flexibility to add Issues Groups as needed without amending the Plan. The Project Selection process description was updated to reflect the process used for the Proposition 84 Round 2 Implementation Grant (e.g., added interview step). It was noted that project scoring is tied to the project database, so project sponsors should enter information into each field in the database to maximize the points they receive.

<u>Questions and Comments</u>

- The plan is a valuable resource even for non-water organizations. It can answer a number of types of questions about water management in the Coachella Valley. Stakeholders are encouraged to comment on anything in the plan; comments are welcome through December 31, 2013.
- Can we get an update on next funding cycle?
    - The tentative schedule from DWR is a draft solicitation will be released in Summer 2014, so it likely a Final solicitation will be released in Fall 2014. This means applications will be due in early 2015.
    - When the draft solicitation is released, the Region will begin preparing for project selection by reassessing the project database and preparing for the project selection process.
    - Project selection is expected in late 2014.
- What if funding runs out?
    - DWR is trying to figure this out with IRWM strategic planning and the Water Board.
- How do you continue programs from the planning process if funds run out?
    - See Plan implementation section of the 2014 IRWM Plan. The CVRWMG has not made a commitment to fund the program if IRWM funding runs out, but it is committed to look for other sources of funding.

- Other funding sources may be contingent on IRWM Plans. The State has the ability to keep the region involved in IRWM planning through regulations or limiting funding opportunities to regions with IRWM Plans.
- Agencies had been skeptical about the amount of funding spent on outreach and communication but have found it to be invaluable; the agencies want to maintain these communications and relationships.

**Next Steps**

- Public review period of the 2014 Draft IRWM Plan is November 4th through December 31, 2013.
- Final appendices for the 2014 Draft IRWM Plan will be available: December 1st, 2013
- Submit comments:
  - Electronically: cvirwm@rmcwater.com
  - Hard Copy: Rosalyn Prickett, 10509 Vista Sorrento Parkway, Ste 205, San Diego, CA 92121

Flyers distributed at the meeting provide direction on how to download the 2014 Draft Coachella Valley IRWM Plan. It can be found on Library page of the CVRWMG website (www.cvrwmg.org), if visitors scroll down to the IRWM Plan. Let Ms. Prickett, know if you would like a copy of the Plan on a CD.

# Coachella Valley Integrated Regional Water Management
# Tribal Outreach Meeting

**August 14, 2012**
**11:00 am – 12:00 pm**

**Agua Caliente**
**5401 Dinah Shore Drive**
**Palm Springs 92264**

**DRAFT NOTES**
*Action items in italics*

**Attendance**

Margaret Park, Agua Caliente Band of Cahuilla Indians

Daniel Cozad, IPM
Rosalyn Prickett, RMC
Crystal Mohr, RMC

## Meeting Objectives

- Provide Updates on the IRWM Program
- Discuss Upcoming Grant Opportunity
- Define Characterization to be Included in Plan Update

## Agenda

### Updates on Coachella Valley IRWM Program

- Rosalyn Prickett provided an overview of the IRWM Program, noting that the Coachella Valley IRWM Region is currently updating the existing IRWM Plan. Updates will include a series of technical evaluations and workgroups to receive input from stakeholders throughout the Plan Update process.
- Daniel Cozad provided an overview of the DAC Outreach Program that is being conducted in parallel with the IRWM Plan Update through a separate grant from DWR.

### Proposition 84-Round 2 Grant Opportunity

- Rosalyn Prickett provided an overview of the Proposition 84 Round 2 Implementation Grant opportunity, including an estimate timeline based on the approximate due date for grant applications provided by DWR (March 2013).
- Margaret Park indicated that the Agua Caliente tribal group may be interested in submitting a project for Round 2 funding, and indicated that DWR requirements associated with CEQA, permitting, grant administration, and other items would not be a deterrent to the tribe.

**Tribal Characterization in IRWM Plan Update**

- Rosalyn Prickett provided an overview of the tribal characterization included in the existing IRWM Plan, noting that the RWMG received feedback that tribes would like to be characterized separately and not lumped together as one "tribal" group.
- Margaret Park indicated that in general, the tribes are not a unified group, and do not like to be referenced as such. It would be helpful in the IRWM Plan Update to include specific descriptions of each tribal group and their issues. This is especially important because the tribes vary geographically and socio-economically, and therefore have different issues.
- Margaret Park suggested that if the IRWM Plan needs to contain information that generalizes tribal issues, the CVRWMG should contact the state-level BIA representative (Doug Garcia) located in Sacramento, who has general knowledge of tribal issues in Coachella Valley. She noted that the Palm Desert BIA office only handles issues associated with the Agua Caliente tribal group, and that the Riverside BIA office manages tribal groups throughout Southern California.
- Margaret Park noted that most tribes have environmental staff that conduct groundwater quality and groundwater level monitoring. Much of this data is submitted to the United States Environmental Protection Agency (USEPA), and could possibly be collected through the USEPA.
- Margaret Park noted that most of the Agua Caliente tribal area is served by either DWA or CVWD for water and wastewater services. Further, she noted that information regarding the Agua Caliente's development plans is easily accessible. Agua Caliente has agreements with the cities of Rancho Mirage, Cathedral City, and Palm Springs, such that the general planning documents for these cities include land use and zoning projections for the Agua Caliente tribal areas. Because this information about the tribe is made publically available, Urban Water Management Plans, planning documents, and CEQA documents contain population and land use projections that are accurate, and provided directly to municipalities from the tribe.
    - Margaret Park noted that she believes the Torres-Martinez tribal group is working on a similar agreement with the County of Riverside.
- Margaret Park indicated that it would help to have a template that provides an overview of the type of information the CVRWMG is looking to include in the IRWM Plan Update pertaining to the Agua Caliente tribe.
    - *RMC to create and send a template that outlines information that would be helpful to include in the IRWM Plan Update.*
- Major issues for the Agua Caliente tribal group have remained relatively constant, and include three primary points:
    - Agencies need to recognize the tribe's water rights.
    - Concerns about TDS levels in Colorado River water, which is being pumped into 'pristine' water in the Coachella Valley Groundwater Basin.

    - Concerns about a lack of transparency on behalf of local water agencies. It has been the tribe's experience that agencies request substantial tribal data, but will not provide their own data or information about modeling and model projections.

- Rosalyn Prickett noted that issues pertaining to the tribe's water rights – or any water rights –are not appropriate for the IRWM Plan Update, and will not be included in the IRWM Plan Update.
- Daniel Cozad noted that concerns pertaining to TDS in imported water supplies will be discussed in the Salt and Nutrient Management Planning (SNMP) Technical Evaluation for the IRWM Plan Update. Mr. Cozad encouraged Ms. Park to come to the SNMP workgroup meeting prepared to discuss potential policy drivers that would allow the tribe to request that TDS restrictions in the Coachella Valley Groundwater Basin are less than those required by the Basin Plan (set by the MCL for TDS). Further, he requested that Ms. Park consider what impacts are felt by the tribe pertaining to increased salt loading into the Coachella Valley Groundwater Basin. These topics will be of importance to discuss at the workgroup meeting.
- Rosalyn Prickett asked if there are any specific water supply or water quality concerns pertaining to disadvantaged communities within the Agua Caliente tribal area. Ms. Park noted that much of the Agua Caliente area is not considered economically disadvantaged, and because most of the area is served by CVWD and DWA, the issues are not necessarily critical. Ms. Park noted that she has heard of issues associated with economic hardship in connecting to the sewer system within the Cathedral Cove area of Cathedral City.

**Next Steps**

- The Salt and Nutrient Management Plan Workgroup will meet on August 22nd, and Margaret Park plans to attend.
- The next Planning Partners meeting will be held on September 13th, and Rosalyn encouraged Margaret Park to attend.

# Coachella Valley Integrated Regional Water Management
# Tribal Outreach Meeting

**August 22, 2012**
**10:00 – 11:00 am**

**29 Palms Tribal EPA**
**47-250 Dillon Road**
**Coachella, CA 92236**

**DRAFT NOTES**
*Action items in italics*

**Attendance**

| | |
|---|---|
| Marshall Cheung, PhD, Tribal EPA | Daniel Cozad, IPM |
| Alison Millar, Environmental Scientist | Rosalyn Prickett, RMC |

## Meeting Objectives

- Provide Updates on the IRWM Program
- Discuss Upcoming Grant Opportunity
- Define Characterization to be Included in Plan Update

## Agenda

### Updates on Coachella Valley IRWM Program

- Rosalyn Prickett provided an overview of the IRWM Program, noting that the Coachella Valley IRWM Region is currently updating the existing IRWM Plan. Updates will include a series of technical evaluations and workgroups to receive input from stakeholders throughout the Plan Update process.
- Daniel Cozad provided an overview of the DAC Outreach Program that is being conducted in parallel with the IRWM Plan Update through a separate grant from DWR.

### Proposition 84-Round 2 Grant Opportunity

- Rosalyn Prickett provided an overview of the Proposition 84 Round 2 Implementation Grant opportunity, including an estimate timeline based on the approximate due date for grant applications provided by DWR (March 2013).
- Why are no tribes on the CVRWMG?
    - Tribes are invited to participate on the Planning Partners, but the CVRWMG is currently comprised of water managers in accordance with DWR standards.

- Attendance at Planning Partners meetings does not mean that tribes necessarily agree with the outcomes of the IRWM Program. Suggest meeting with the 29 Palms tribal council.
    - *Marshall to coordinate meeting with tribal council to gauge their interest.*
- Can you add tribal participation in the Planning Partners in the grant application? Tribes need funding/stipend for tribal participation.
    - Any funding for tribal participation would be project specific.

**Tribal Characterization in IRWM Plan Update**

- Rosalyn Prickett provided an overview of the tribal characterization included in the existing IRWM Plan, noting that the RWMG received feedback that tribes would like to be characterized separately and not lumped together as one "tribal" group.
- Marshall Cheung indicated that a major issue is groundwater quality – the tribes want CVWD to treat Colorado River water before it is used to recharge the groundwater basin. The other major issue is groundwater quantity.
- 29 Palms tribe uses City of Coachella water and sewer services, but also monitors local groundwater wells. Willing to share groundwater data if CVWD does first.
- Tribal EPA has full surface water quality regulatory authority.
- Should the Salt and Nutrient Management Plan be incorporated into tribal documents as Tribal EPA authority?
    - No, Tribal EPA only has jurisdiction over surface water, not groundwater.
- Stakeholder is a bad word to the tribes due to past experience. The tribes tried to exert pressure during the Coachella Valley Water Management Plan, but were "just stakeholders." They sent comment letters, which were not considered. The 2002 Plan was not fully implemented.
- Water quality is a right to the tribes – water needs to be good quality to be drinkable. Marshall Cheung is interested in the Salt and Nutrient Management Planning process.
    - *RMC to add Marshall Cheung to Salt and Nutrient Management Planning Workgroup list.*
- May need to go through formal government-to-government consultation process to engage the tribal council, possible through CVWD.
- *RMC to send template for tribal characterization to Marshall Cheung.*

**Next Steps**

- The Salt and Nutrient Management Plan Workgroup will meet on August 22nd, notes will be sent to Marshall, who will try to attend future meetings.
- The next Planning Partners meeting will be held on September 13th, and Rosalyn encouraged Marshall to attend.

# Coachella Valley Integrated Regional Water Management
# Tribal Outreach Meeting

**September 11, 2012**
**10:00 – 11:00 am**

**Cabazon Band of Mission Indians**
**84-245 Indio Springs Drive**
**Indio, CA 92203**

**DRAFT NOTES**
*Action items in italics*

**Attendance**

Becky Ross, Cabazon Band of Mission Indians
Jacquelyn Gonzales, Cabazon Band of Mission Indians
Daniel Cozad, IPM
Rosalyn Prickett, RMC
Crystal Mohr, RMC

## Meeting Objectives

- Provide Updates on the IRWM Program
- Discuss Upcoming Grant Opportunity
- Define Characterization to be Included in Plan Update

## Agenda

### Updates on Coachella Valley IRWM Program

- Rosalyn Prickett provided an overview of the IRWM Program, noting that the Coachella Valley IRWM Region is currently updating the existing IRWM Plan. Updates will include a series of technical evaluations and workgroups to receive input from stakeholders throughout the Plan Update process.
- Daniel Cozad provided an overview of the DAC Outreach Program that is being conducted in parallel with the IRWM Plan Update through a separate grant from DWR.
- Becky Ross indicated that it would be beneficial to have a meeting with all of the tribes together. Also, she noted that there is a coalition of tribal interests – the Four Winds Coalition –that may be helpful to meet with.
    - *RMC to follow-up with Becky Ross on the Four Winds Coalition*
- Jacquelyn Gonzales indicated that she is going to the California Water Plan (CWP) Tribal Meeting.
    - *RMC to follow-up with Jacquelyn Gonzales regarding the CWP meeting.*

**Proposition 84-Round 2 Grant Opportunity**

- Rosalyn Prickett provided an overview of the Proposition 84 Round 2 Implementation Grant opportunity, including an estimate timeline based on the approximate due date for grant applications provided by DWR (March 2013).

**Tribal Characterization in IRWM Plan Update**

- Rosalyn Prickett provided an overview of the tribal characterization included in the existing IRWM Plan, noting that the RWMG received feedback that tribes would like to be characterized separately and not lumped together as one "tribal" group.
- Becky Ross indicated that the tribes see water as a resource, not as something that is somebody's property. This makes water-related issues difficult to address.
- Becky Ross indicated that groundwater quality is the key issue of concern throughout the Coachella Valley, and in particular recharge with Colorado River water and subsequent ammonium perchlorate issues. In addition, arsenic is of particular concern in the East Valley.
- Flooding is also a major issue for the tribe, particularly within the East Valley.
- The Cabazon resort has the ability to connect to Indio Water Authority or the Coachella Valley Water District for water services. Tribes are not subject to wastewater and water treatment standards applicable to California, which makes permitting for water and wastewater activities difficult for the tribes.
- A major current concern of the tribe is the issue in Mecca regarding the Cabazon Resource Recovery Park. Air Quality Control Board reports have shown no impact from tribal facilities, yet the tribes are still under fire by the media and the public. Are IRWM funds able to pay for public outreach efforts?
    - *Yes, IRWM funding can be used for public outreach efforts <u>associated with water management</u>. We would recommend that public outreach be completed as part of a larger project – public outreach alone is likely not substantial enough to be competitive for Proposition 84 funding.*
    - The East Valley population needs education regarding groundwater quality issues – many people are not aware that the groundwater is not safe to drink.
- Agriculture uses are a concern due to the agricultural community's use of Coachella Canal water (ammonium perchlorate) and the addition of other pollutants to the soil and therefore the groundwater. This is of particular concern in the East Valley where many groundwater wells are less than 800 feet deep, and therefore pump contaminated water. Finally, arsenic is of a concern due to potential anthropogenic causes – grapes grown in the Coachella Valley historically used arsenic for pest control.
- Jacquelyn Gonzales noted that the IRWM Plan should acknowledge the tribe's traditional ecological knowledge (TEK) and the value this provides to the Region. TEK can dictate tribes' interest and investment in certain issues. For example, protection of native plant populations.

- Other groups that were suggested to contact (particularly for DAC Outreach) include: Mecca (ICUC) and East Coachella Valley Coalition (EVC-IVAN).
- *Jacquelyn Gonzales to provide a write-up of TEK to include within the IRWM Plan Update.*
- *Becky Ross to ask Business Committee for groundwater data for IRWM Program.*
- *RMC to send tribal template for tribal excerpts to Becky Ross and Jacqueline Gonzales.*
- *RMC to send a "mission statement" and summary of the salt and nutrient management planning effort and its nexus with the IRWM Program to Becky Ross and Jacqueline Gonzales, for distribution to tribal council.*
- *RMC to send the Call-for-Projects email and website link to Becky Ross and Jacqueline Gonzales.*

**Next Steps**

- The Salt and Nutrient Management Plan Workgroup will meet on August 22nd; Rosalyn encouraged the Cabazon tribal group to send a representative.
- The next Planning Partners meeting will be held on September 13th; Rosalyn encouraged the Cabazon tribal group to send a representative.

# Coachella Valley Integrated Regional Water Management
# Tribal Outreach Meeting

**September 13, 2012**
**9:00-10:00 am**

**Torres-Martinez**
**Coachella Valley Water District**
**Training Facility**
**75-515 Hovley Lane East**
**Palm Desert, CA 92260**

**DRAFT NOTES**
*Action items in italics*

**Attendance**

| | |
|---|---|
| Debi Livesay, Torres-Martinez | Daniel Cozad, IPM |
| Roland Ferrer, Torres-Martinez | Diana Cozad, IPM |
| | Rosalyn Prickett, RMC |
| | Crystal Mohr, RMC |

**Meeting Objectives**

- Provide Updates on the IRWM Program
- Discuss Upcoming Grant Opportunity
- Define Characterization to be Included in Plan Update

**Agenda**

**Updates on Coachella Valley IRWM Program**

- Daniel Cozad provided an overview of the IRWM Program, noting that the Coachella Valley IRWM Region is currently updating the existing IRWM Plan. Updates will include a series of technical evaluations and workgroups to receive input from stakeholders throughout the Plan Update process.
- Daniel Cozad provided an overview of the DAC Outreach Program that is being conducted in parallel with the IRWM Plan Update through a separate grant from DWR.

**Proposition 84-Round 2 Grant Opportunity**

- Daniel Cozad provided an overview of the Proposition 84-Round 2 Implementation Grant opportunity, including an estimate timeline based on the approximate due date for grant applications provided by DWR (March 2013).
- Debi Livesay indicated that the Torres-Martinez tribal group plans to submit a project for grant funding. The project would include water and sewer connections to the CVWD system from Avenue 62 to Avenue 64. This project would provide

services to the main community within the Torres-Martinez tribal lands, which is also a mapped disadvantaged community.

- Torres-Martinez reports that there are water quality issues associated with ammonium perchlorate from Colorado River water. According to the tribe, the groundwater wells that are being used on the tribal lands are very close to recharge points, and are therefore highly impacted by ammonium perchlorate. This issue is a priority for the Regional Water Quality Control Board.
    - This project would shift tribal members to municipal supplies from groundwater wells.
    - *Debi Livesay will send sampling reports indicating levels of ammonium perchlorate to RMC.*
- Torres-Martinez has a will-serve letter from CVWD to connect to the sewer system. Need to clarify how tribal members will pay for connection fees – potentially set up a payment plan with CVWD.
- The timing of the projects needs to be worked out to ensure that it aligns with the Round 2 grant cycle. For timing purposes it may be appropriate to pursue the sewer project during Round 2, and the water supply project during Round 3.
- *Debi Livesay will follow-up with Jonathan Rash of Indian Health Services next week regarding additional engineering information for the water supply component, and will follow-up with RMC to determine if additional support is needed.*
- *Debi Livesay will determine if appropriate matching funds are available for the proposed Torres-Martinez projects.*
- *RMC will have internal discussions to determine the appropriate engineer that could provide DAC technical support to the Torres-Martinez group for their proposed projects.*

- Debi Livesay also expressed concern for stormwater and sewer capacity issues within Salton City, which could potentially be addressed with the assistance of Proposition 84 grant funding. She indicated that any project in this area would need engineering support.

**Tribal Characterization in IRWM Plan Update**

- Rosalyn Prickett provided an overview of the tribal characterization included in the existing IRWM Plan, noting that it is important to characterize the issues faced by the Region because that helps to lay the groundwork for the Region's needs – this process helps to determine which projects within the IRWM Plan can fulfill the Region's most pressing needs.
- Debi Livesay noted that flooding and stormwater are key issues, and the Torres-Martinez tribe has no money to address these issues. CVWD intends to review issues associated with flooding from what is referred to as the "Oasis Slope," in

order to better understand this flooding issue. The tribe is working with the Army Corps of Engineers, who is able to provide modeling support, but still needs additional funding to address flooding.

    - Rosalyn Prickett suggested that the Torres-Martinez consider Proposition 1E funding, which provides grant funding for stormwater and flood projects.
    - *Debi Livesay to provide an overview of flooding locations and issues within the Torres-Martinez tribal lands; this information will be provided after it is reviewed by the tribal council.*

- Water quality data compiled by Tribal EPA is collected on the national EPA website. The contact person for this information is Helen McKinley.
- *RMC to create a template that outlines information that would be helpful to include in the IRWM Plan Update. RMC will send the template to Debi Livesay.*

**Next Steps**

- The next Salt and Nutrient Management Plan Workgroup will meet on September 26th, and Torres-Martinez representatives are encouraged to attend.

# Coachella Valley Integrated Regional Water Management
# Tribal Outreach Meeting

**September 13, 2012**
**3:00-4:00 pm**

**Augustine**
**Coachella Valley Water District**
**Training Facility**
**75-515 Hovley Lane East**
**Palm Desert, CA 92260**

**AGENDA**

### Attendance

| | |
|---|---|
| Les Ramirez, Augustine Band of Cahuilla Indians | Daniel Cozad, IPM |
| | Diana Cozad, IPM |
| | Rosalyn Prickett, RMC |
| | Crystal Mohr, RMC |

### Meeting Objectives

- Provide Updates on the IRWM Program
- Discuss Upcoming Grant Opportunity
- Define Characterization to be Included in Plan Update

### Agenda

### Updates on Coachella Valley IRWM Program

- Rosalyn Prickett provided an overview of the IRWM Program, noting that the Coachella Valley IRWM Region is currently updating the existing IRWM Plan. Updates will include a series of technical evaluations and workgroups to receive input from stakeholders throughout the Plan Update process.
- Daniel Cozad provided an overview of the DAC Outreach Program that is being conducted in parallel with the IRWM Plan Update through a separate grant from DWR.
- Les Ramirez noted that from the Augustine tribe's point of view, the value of IRWM is participating in a larger discussion of water issues in the Coachella Valley.
- Les Ramirez indicated interest in the salt and nutrient management planning effort, and would be particularly interested if meetings were available via webcast/ teleconference. The tribe is concerned with 3 key issues related to water quality:
    - the salts in agricultural tail water,
    - the water quality of Colorado River water being used for recharge, and

    - the fact that the Region's high-quality aquifer is being degraded by TDS.
- *RMC to add Les Ramirez to the Salt and Nutrient Management Workgroup meeting invitation.*

**Proposition 84-Round 2 Grant Opportunity**

- Rosalyn Prickett provided an overview of the Proposition 84 Round 2 Implementation Grant opportunity, including an estimate timeline based on the approximate due date for grant applications provided by DWR (March 2013).
- Les Ramirez indicated that the Augustine tribe is not interested in applying for Proposition 84 funding – tribal issues can be addressed with the tribe's own resources. He also indicated that the tribe could potentially be interested in providing support to DACs – in general, the tribe sees the importance and value of being a good neighbor to those in Coachella Valley.

**Tribal Characterization in IRWM Plan Update**

- Rosalyn Prickett provided an overview of the tribal characterization included in the existing IRWM Plan, noting that the RWMG received feedback that tribes would like to be characterized separately and not lumped together as one "tribal" group.
- Les Ramirez provided his thanks for the separate tribal meetings, indicating that it is important for the tribes to individually provide their own information.
- Les Ramirez explained the tribe's perspective on the salt and nutrient issue, noting that any litigation would not be fruitful because it would focus on groundwater quantity not quality. There needs to be an operational solution to the issue, which needs to be established with the CVRWMG agencies to better manage the basin and preserve water quality.
    - Why should the region pay to address the issue (treating TDS and ammonium perchlorate from Colorado River water) when it is only a few agencies that are causing the issue?
    - In addition, it seems more logical to treat water before it is pumped into the groundwater, rather than requiring all individual users to treat the water before it is used.
- As far as the tribe's water supply, the tribe has its own water supply through groundwater wells. Wastewater is sent to CVWD's system.
- The Whitewater River is adjudicated – Augustine has rights that are not quantified. However, groundwater is not adjudicated, so there is a need to find ways to address mutual issues together, for all users. From the tribe's perspective, they want to find a way to maintain the reservation as a homeland for their people in perpetuity – this requires usable groundwater (quality and quantity).
- The tribe is concerned with how salts that accumulate in soils are flushed for agricultural purposes. Flushing is necessary to maintain some crops, but may exacerbate issues in the Salton Sea. The tribe's focus is being fair with respect to these issues, and understanding how they may contribute to any resolution.

- The tribe is also concerned with discharges to the Salton Sea. Discharges are required to maintain levels in the Salton Sea, however agricultural water discharges continue to impact the sea's water quality. With regards to the Salton Sea, the main issue is how to permit discharges of salts to the Salton Sea.
- There is an inherent conflict between the Winter's Doctrine and California water law. The Winter's Doctrine states that tribes do not have to use their water rights, these rights are in reserve. However, California has a "use it or lose it" water law system.
- The tribe is not able to share data – this information is held in the tribal trust.
- In general, Augustine is interested in seeking a rational approach to Coachella Valley water management, and would like to be proactive instead of reactive.
- The tribe is concerned with flooding issues along Avenue 54 and Harrison Avenue. Need to identify appropriate structural improvements.
- The tribe is also concerned with the quality of stormwater runoff; will work with the City of Coachella to address safety, roadway improvements, and the intersection of roadway/runoff stormwater collection and CVWD's regional stormwater system.

**Next Steps**

- The Salt and Nutrient Management Plan Workgroup will meet on September 26th, and Les Ramirez is interested in attending if available via webinar.

# Coachella Valley Integrated Regional Water Management Tribal Outreach Meeting

**October 22, 2013**
**9:00 – 11:00 am**

**Coachella Valley Water District**
**75-515 Hovley Lane East**
**Palm Desert, CA**

**DRAFT NOTES**
*Action items in italics*

## Attendance

Margaret Park, Agua Caliente Band of Cahuilla Indians
John Soulliere, MSWD
Katie Ruark, DWA
David Tate, DWA
Mark Krause, DWA
Sara Toyoda, IWA
Castulo Estrada, CWA
Daniel Cozad, IPM
Crystal Mohr, RMC

## Meeting Objectives

- Provide Updates on the IRWM Program
- Discuss Draft Tribal Water Resources Chapter
- Announce Upcoming Meetings and Opportunities to Comment on the IRWM Plan

## Agenda

### Updates on Coachella Valley IRWM Program

- Daniel Cozad provided an overview of the IRWM Program, noting that the Coachella Valley IRWM Region is currently wrapping up the update to the existing IRWM Plan.
- Mr. Cozad provided a brief overview of the series of technical evaluations and workgroups that were conducted to receive input from stakeholders throughout the Plan Update process. Mr. Cozad also provided an overview of the DAC Outreach Program that is being conducted in parallel with the IRWM Plan Update through a separate grant from DWR. The DAC Outreach Program will be complete by the end of 2013, and the final 2014 IRWM Plan Update will be finalized in early 2014.
- Mr. Cozad also noted that in their draft Proposition 84-Round 2 Implementation Grant awards, DWR recommended that the Coachella Valley IRWM Region receive 100% of their funding request. If the Region is awarded this full grant amount, a portion of the grant will go to the Torres-Martinez Tribe to extend a water pipeline to a housing subdivision within their Reservation.

**Discuss Draft Tribal Water Resources Chapter**

- Crystal Mohr provided an overview of the draft Tribal Water Resources Chapter that was sent out to the Region's Tribal Nations for pre-review. The purpose of the chapter is to include a synthesis of information pertaining to Tribal Water Resources. This chapter, in essence, includes a synthesis of the Tribal-related information in the Region Description and Issues and Needs Chapters, but at a greater level of detail than in the 2010 IRWM Plan. This approach was also taken for the Disadvantaged Communities, and there will also be a stand-alone chapter in the 2014 IRWM Plan Update to discuss disadvantaged communities and their issues and needs.
- Ms. Mohr then went through the chapter, explaining the various sections and their purpose as well as how they correspond to other chapters of the IRWM Plan.
- Katie Ruark noted that she thinks the Tribal Water Resources Chapter needs to explain the nexus that Tribes have to land use planning. If this information is not in the Tribal Water Resources Chapter, it should be in the Agency Coordination Chapter.
- Margaret Park asked why Table 5-1 specifically calls out ethnology and language.
    - The Twenty-Nine Palms Band of Indians had specifically noted that they are often mistaken as being ethnically Cahuilla, when in fact they are Chemehuevi. We called this information out in the table to highlight the different Tribes' ethnicities.
- Katie Ruark asked if Section 5.3.5 regarding the Torres-Martinez Tribe could include more information about the Tribe's wetlands along the Salton Sea. It is unclear who is responsible for the wetlands, what other agencies are involved, and what the water rights are associated with the wetlands.
    - *RMC will contact Debi Livesay of the Torres-Martinez Tribe for input on this question.*
- Margaret Park asked if the Tribal Water Resources Chapter could clarify that the one-on-one meetings held in 2012 with the Tribal Nations were with tribal staff and not with Tribal Council.
- Margaret Park asked why the Tribal Water Resources Chapter had a specific call-out for the California Water Plan Update.
    - This information was included, because it is an adopted water-related planning document that has information about tribal water resources, and therefore was used as a reference document. In addition, because the IRWM Plan will be ultimately sent to DWR (and is funded through a DWR grant), it seemed appropriate to acknowledge DWR's planning efforts related to tribal water resources.
- Margaret Park noted that she will be sending new information for Section 5.3.1 regarding the Agua Caliente Tribe.
- Mark Krause asked Ms. Park if she will send information about the Tribe's management or plans to manage surface water resources.
    - Ms. Park stated that the content for Section 5.3.1 is still in development, and she did could not speak to the precise content.
- David Tate asked if the asterisks on Page 5-1 of the chapter could be reversed to only highlight the Tribe who is not involved in the IRWM planning process.

**Next Steps**

- Mr. Cozad thanked Ms. Park and the rest of the meeting attendees for participating, and noted that there are several upcoming items to be aware of:
    a. Public Comment Period for 2014 IRWM Plan Update: Nov. 4th – Dec. 31st
    b. Final Disadvantaged Communities Workshop:
        i. November 6th 10:00 am – 12:00 pm
        ii. Please RSVP to cmohr@rmcwater.com or (858) 875-7421
    c. Public Workshop on the IRWM Plan: November 6th (1-3 pm)

## Coachella Valley IRWM Outreach – Fall 2013/Winter 2014

During Fall 2013 and early Winter 2014, CVRWMG representatives made presentations on the IRWM Program to a number of stakeholder groups in the Coachella Valley and surrounding region. To improve attendance and reduce meeting fatigue, these presentations were included as an agenda item at regular meetings held by the stakeholder groups, and were not separate meetings hosted by the CVRWMG.

| | Date | Meeting Title | Time | Location | Presenter |
|---|---|---|---|---|---|
| 2013 | November 5 | Coachella Valley Irrigated Lands Coalition | 1:30pm – 2:30pm | Peter Rabbit Farms<br>85810 Peter Rabbit Lane, Coachella, CA 92236 | Patti Reyes, CVWD |
| | November 7 | Desert Valley Builders Association – Legislative Affairs Forum | 7:30 a.m. | City of Rancho Mirage<br>69-825 Highway 111, Rancho Mirage, CA | John Soulliere, MSWD |
| | November 13 | MS4 Desert Task Force | 9:00 a.m. | Palm Desert Administrative Conference Room<br>73-510 Fred Waring Drive, Palm Desert, CA | Berlinda Blackburn, CWA;<br>Sara Toyoda, IWA |
| | November 14 | Regional Water Quality Control Board | 9:00a.m., after hearing items | RWQCB Offices<br>73-720 Fred Waring Drive, Suite 100, Palm Desert, CA 92260 | Katie Ruark, DWA |
| | November 14 | CVAG Energy/Environmental Resources Workgroup | 12 p.m. | CVAG Offices<br>73-710 Fred Waring Drive, Suite 119, Palm Desert, CA 92260 | Katie Ruark, DWA |
| | November 19 | CVAG Technical Advisory Committee | 11:30 a.m. | CVAG Offices<br>73-710 Fred Waring Drive, Suite 119, Palm Desert, CA 92260 | Sara Toyoda, IWA |
| | December 4 | County Planning Commission | 9 a.m. – 1 p.m. | County Administration Center<br>4080 Lemon Street, 1st Floor Board Chambers<br>Riverside, CA 92501 | Patti Reyes, CVWD |
| 2014 | January 13 | Coachella Valley Housing Review Committee | 3 p.m. – 5 p.m. | 45-701 Monroe Street, Suite G<br>Indio, CA 92201 | Patti Reyes, CVWD |

# Appendix VI-E: Public Outreach and Involvement Plan and Disadvantaged Communities Outreach Plan

This appendix contains the Public Outreach and Involvement Plan that was created for the 2018 Coachella Valley Integrated Regional Water Management (IRWM)/Stormwater Resource (SWR)Plan. It also includes the DAC Outreach Plan as a subsection of the Public Outreach and Communications Plan.

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# Public Outreach and Involvement Plan

National Experience. Local Focus.

**Coachella Valley Integrated Regional Water Management (IRWM) & Stormwater Resources (SWR) Plan Update**

| | |
|---|---|
| **Prepared for:** | Coachella Valley Regional Water Management Group<br>Coachella Valley Planning Partners |
| **Prepared by:** | Rosalyn Prickett, Becky McDonnell |
| **Reviewed by:** | Alexis Cahalin, Enrique Lopezcalva |
| **Date:** | September 26, 2017 |
| **Reference:** | 0574-002.00 |

# 1 Introduction

The Coachella Water Authority (CWA), Coachella Valley Water District (CVWD), Desert Water Agency (DWA), Indio Water Authority (IWA), Mission Springs Water District (MSWD), and Valley Sanitary District (VSD) – collectively referred to as the Coachella Valley Regional Water Management Group (CVRWMG) – have established an Integrated Regional Water Management (IRWM) Program consistent with guidelines established by the California Department of Water Resources (DWR). The IRWM planning process is intended "to coordinate and share information concerning water supply planning programs and projects and other information, and to improve and maintain overall communication among the Members involved" (from Section 4.1.1 of the August 2014 MOU). This effort addresses the Coachella Valley IRWM Region boundaries initially identified through DWR's Region Acceptance Process and updated through the *2018 IRWM/SWR Plan Update*. DWR recently released *2016 IRWM Program Guidelines*, which prompted the current *IRWM/SWR Plan Update*.

The State Water Resources Control Board (SWRCB) recently established the Storm Water Grant Program (SWGP), which requires agencies to develop Storm Water Resource Plans (SWRPs) to be eligible for grants for stormwater and dry weather runoff capture projects. As part of the program, the SWRCB adopted guidelines to assist agencies in developing adequate SWRPs. The SWRP must address the requirements listed in the California Water Code (CWC) and be developed in accordance with the SWRCB's *2015 SWRP Guidelines*. The Guidelines encourage collaborative partnerships among water supply and stormwater agencies, non-governmental organizations, and other water utilities in managing stormwater as a resource. Per the Guidelines, certain existing planning documents and ordinances may be used as a "functionally equivalent Plan" in lieu of a separate SWRP. Thus, the CVRWMG has decided to prepare a functionally-equivalent SWRP in combination with the IRWM Plan Update.

The CVRWMG is continuing its established stakeholder outreach process to achieve the following goals:

- Support development and adoption of the *IRWM/SWR Plan Update*, which will meet the *2016 IRWM Program Guidelines* established by DWR and the *2015 SWRP Guidelines* established by SWRCB,
- Build awareness that storm water and dry weather runoff projects may be underutilized water sources and identify potential projects, and
- Maintain support among key stakeholders and public for the IRWM Program, grant processes, and plan implementation.

In addition to supporting the integrated management of water resources in the region, the *IRWM /SWR Plan Update* will maintain the Coachella Valley IRWM Region's ability to receive grant funding through

Proposition 1 and other sources. A proactive approach to implementing public outreach and information dissemination will assist the CVRWMG in generating broad-based support for the effort. This Public Outreach and Involvement Plan identifies a variety of outreach mechanisms to improve general awareness of the Coachella Valley IRWM program and provide means for all interested parties to stay engaged during the planning process and plan implementation.

**Table 1** contains a summary of the near-term outreach activities planned for the *IRWM/SWR Plan Update.* Update to eight (8) Planning Partners meeting may be conducted during the planning process; note that only five (5) Planning Partners meetings are shown in the preliminary list below.

**Table 1: Summary of Outreach Activities for *2018 IRWM Plan/SWRP Update***

| Activity | Anticipated Date | Discussion / Topic |
|---|---|---|
| Website | Ongoing | Monthly updates |
| Stakeholder email list, including DACs/EDAs | Ongoing | Regular updates/announcements, as needed |
| Online Project Database (OPTI) | Ongoing | Always open for project proponents to add/edit projects and review other projects in region<br>Online access to User guide |
| Outreach Flyers | As Needed | To advertise meetings/workshops, Call for Projects, and release of *IRWM/SWR Plan Update* |
| Planning Partners Meeting | Sept 28, 2017 | Kick-off *IRWM/SWR Plan Update*<br>Gather info on potential projects that will be submitted |
| Planning Partners Meeting | January 2018 | Discuss watershed characterization, Plan objectives, and scoring criteria<br>Provide OPTI tutorial for next round of funding |
| Call for Projects | February 2018 | Open Call for Projects for inclusion in *IRWM/SWR Plan Update* |
| Planning Partners Meeting | March/April 2018 | Export project list and scoring from OPTI<br>Discuss benefits analysis/calculator |
| Public Workshop/ Planning Partners Meeting | May 2018 | *IRWM/SWR Plan Update* – Public Review Draft |
| Public Comment Period | May – June 2018 | Accept comments on Public Review Draft |
| Planning Partners Meeting | September 2018 | Present *IRWM/SWR Plan Update* - Final |

This Public Outreach and Involvement Plan is organized into the following components:

- Stakeholder Coordination and Public Involvement
- Disadvantaged Communities (DAC) Outreach
- Tribal Outreach and Coordination

This Plan may be updated as needed throughout the IRWM planning process as stakeholder outreach and communication methods are refined.

# 2 Stakeholder Coordination and Public Involvement

## 2.1 Purpose

The goal of stakeholder coordination is to provide a means for the Region's various entities with interests and/or authority over water management to maintain an active level of involvement in the IRWM program and plan implementation. These entities have a vested interest in local water resources and can assist in articulating the needs of the Region and their membership during the planning phase, as well as implementing water management projects in the future. Opposition to the *IRWM/SWR Plan Update* by entities with water management authority could present a significant obstacle to plan implementation if these groups are not given ample opportunity to contribute to the definition of and approach to addressing regional priorities.

The goal of public involvement is to increase awareness, understanding, and support for the Coachella Valley IRWM Plan and associated SWRP among the general public. The benefits of keeping the general public informed of the IRWM Program and *IRWM/SWR Plan Update* include educating constituents and politicians about the importance and interrelation of water management strategies, increasing regional as well as local support for projects, and generating broad-based support for continued regional coordination. Stakeholders from throughout Coachella Valley can provide leadership, innovation, and expertise in planning and conducting water management (including stormwater) projects that benefit local communities.

## 2.2 Participants

All interested stakeholders and members of the general public are invited to maintain coordination with the CVRWMG and Coachella Valley IRWM Program.

Individuals representing the following groups have been identified as potential stakeholders:

- State, county and municipal governments
- MS4 Copermittees
- Community councils
- Environmental conservation and natural resources organizations
- Resource agencies and special interest groups
- Flood control districts
- Farm Bureau and agricultural interests
- Academic institutions
- Regional planning organization
- Stormwater management agencies
- Desert Task Force
- Wastewater and water agencies
- School districts
- Private pumpers and large landscape irrigators
- Disadvantaged and environmental justice communities
- Elected officials
- Native American Tribes
- Recreational interests
- Regulatory agencies
- Development community

Interested members of the general public may include:

- Private homeowners or landowners
- Landscape architects and contractors
- Chambers of Commerce
- Commercial, industrial, and residential developers
- Home owners associations
- Garden clubs and organizations
- Rotary clubs and other service clubs

Outreach to the general public, plus the above groups, will be conducted to solicit multi-benefit stormwater projects and to provide guidance to develop/prioritize projects that offer greatest benefits targeting regional and watershed priorities. **Table 7** (at the end of this Plan) lists of all Coachella Valley IRWM Region stakeholders. All stakeholders identified by the CVRWMG and Planning Partners (discussed below) have been contacted and invited to participate in the program.

### 2.2.1 Planning Partners

One of the first steps in soliciting public involvement was to establish a list of key stakeholders that can serve in an advisory capacity. This advisory group, otherwise known as the Planning Partners, were established early in the IRWM planning process to help the CVRWMG identify the preliminary list of critical water resources issues that should be the focus of early stakeholder meetings. The Planning Partners consist of CVRWMG partners and other stakeholders in the region, including the County of Riverside, Coachella Valley cities, special districts, public agencies, non-governmental organizations, and Tribal Nations.

The Planning Partners played a valuable role in shaping key elements of the *2010* and *2014 IRWM Plans*, such as helping to establish goals and objectives, developing prioritization criteria for projects, reviewing and weighing in on draft Plan chapters, and implementing Plan activities. The Planning Partners will continue to play an important role in the development of the *IRWM/SWR Plan Update*. The *2015 SWRP Guidelines* requires plans to provide for and document community participation in the plan development and implementation. The *IRWM/SWR Plan Update* will achieve this by involving the Planning Partners in the watershed characterization, benefits quantification, and new prioritization criteria for storm water projects. The goal of the Planning Partners is balanced membership and participation from representatives of all significant water resource issue areas in the Valley. **Table 2** below provides a current list of the Planning Partners; however, additional Planning Partners may be added as the IRWM Program evolves.

Planning Partners meetings will take place on a quarterly basis, as needed. The agenda for these meetings will be set by the content for the development of the relevant stage of the IRWM Program and the needed materials, information, feedback, and recommendations from the Planning Partners. Meetings will be held regularly, and will be focused on discussing key program milestones, including project solicitation and prioritization and development of the *IRWM/SWR Plan Update*. Meetings are generally held during business hours in a central location to allow for participation by stakeholders throughout the Coachella Valley. As appropriate, meetings may be located in disadvantaged areas to facilitate attendance by members of the general public.

The Planning Partners are the primary advisory group for development of the *IRWM/SWR Plan Update* and other phases of the IRWM Program. They are involved with all facets of Plan development and implementation. They comprise many of the project submissions and are therefore essential to plan implementation. Planning Partners also provide support for public outreach efforts. The general public who may wish to participate in the IRWM planning process may contact their city and district representatives of the Planning Partners, and may interact with any member of the Planning Partners that they wish.

**Table 2. Coachella Valley Planning Partners**

| No. | Agency / Organization |
|---|---|
| **CVRWMG** | |
| **1** | City of Coachella/Coachella Water Authority |
| **2** | City of Indio/Indio Water Authority |
| **3** | Coachella Valley Water District |
| **4** | Desert Water Agency |
| **5** | Mission Springs Water District |
| **6** | Valley Sanitary District |
| **Planning Partners** | |
| **1** | Agua Caliente Band of Cahuilla Indians |
| **2** | Augustine Band of Cahuilla Indians |
| **3** | Annenberg Trust at Sunnylands |
| **4** | Borrego Water District |
| **5** | Building Healthy Communities |
| **6** | Cabazon Band of Mission Indians |
| **7** | California Department of Water Resources |
| **8** | California Department of Housing and Community Development |
| **9** | California Rural Legal Assistance, Inc. |
| **10** | California State University - San Bernardino |
| **11** | Center for Collaborative Policy |
| **12** | City of Cathedral City |
| **13** | City of Desert Hot Springs |
| **14** | City of Palm Desert |
| **15** | City of Palm Springs |
| **16** | City of Rancho Mirage |
| **17** | Clean Water Action |
| **18** | Clinicas de Salud |
| **19** | Coachella Valley Association of Governments |
| **20** | Coachella Valley Economic Partnership |
| **21** | Coachella Valley Housing Coalition |
| **22** | Coachella Valley Mosquito and Vector Control District |
| **23** | Colorado River Regional Water Quality Control Board |
| **24** | County of Riverside |
| **25** | Desert Alliance for Community Empowerment |
| **26** | Desert Edge Community Council |
| **27** | Desert Empire Homes |
| **28** | Desert Healthcare District |
| **29** | Desert Highland Gateway Health & Wellness |
| **30** | East Valley Housing Review Committee |
| **31** | El Sol Neighborhood Educational Center |
| **32** | Environmental Justice Coalition for Water |
| **33** | Friends of the Desert Mountains |

| No. | Agency / Organization |
|---|---|
| **34** | Hi-Lo Desert Golf Association |
| **35** | Imperial Irrigation District |
| **36** | Leadership Counsel for Justice and Accountability |
| **37** | Lideres Campesinas |
| **38** | Mojave Water Agency |
| **39** | Morongo Band of Mission Indians |
| **40** | Natural Science Collaborative of the Desert Region |
| **41** | Pueblo Unido Community Development Corporation |
| **42** | Representative from Assemblymember Garcia |
| **43** | Representative from Senator Jeff Stone |
| **44** | Representative from Assemblymember Chad Mayes |
| **45** | Representative from Supervisor V. Manuel Perez |
| **46** | Riverside County Flood Control and Water Conservation District |
| **47** | Riverside County Economic Development Agency |
| **48** | Rural Community Assistance Corporation |
| **49** | Salton Community Services District |
| **50** | San Gorgonio Pass Water Agency |
| **51** | Torres-Martinez Desert Cahuilla Indians |
| **52** | Twenty-Nine Palms Band of Mission Indians |
| **53** | University of California – Irvine |
| **54** | University of California - Riverside |
| **55** | U.S. Bureau of Indian Affairs |
| **56** | U.S. Department of Agriculture |

### 2.2.2 Issues Groups

The Coachella Valley IRWM RAP presented many issue areas that were important to the stakeholders in the Coachella Valley and established separate, formal Issues Groups to address them. The format of these Issues Groups was originally envisioned as formal workgroups with specific leadership, terms, meeting, and other governance requirements. Instead, key planning issues have been addressed in an informal manner through ad-hoc Issues Groups – where a specific planning topic was addressed through 2-3 meetings and then the group was disbanded. This revised format was implemented due to low stakeholder turnout at Issues Groups meetings and was revised to increase participation in critical decisions.

In total, four Issues Groups have been formed: Disadvantaged Communities (DAC), Native American Tribes, Salt and Nutrient Management Planning (SNMP), and Integrated Flood Management (IFM). No additional Issues Groups are anticipated at this time; however, they may be implemented ad-hoc if the need arises during the *IRWM/SWR Plan Update*.

#### DAC Issues Group

DAC needs and issues were identified as special and different than other groups at the initiation of planning efforts. The DAC Issues Group meetings began in May 2010 and concluded in January 2014. **Table 3** indicates the principal organizations that were represented the meetings.

**Table 3: DAC Issues Group Participants**

| Organization |
|---|
| California Rural Legal Assistance, Inc. |
| Clean Water Action |
| Community Water Center |
| Desert Alliance for Community Empowerment |
| Desert Edge Community Council |
| El Sol Neighborhood Educational Center |
| Environmental Justice Coalition for Water |
| Loma Linda University |
| Pueblo Unido Community Development Corporation |
| Poder Popular |
| Representative from Assemblymember Perez |

## Native American Tribes Issues Group

The Native American Tribes Issues Group that was active during development of the *2010 IRWM Plan* brought specific issues of cultural water use and special needs related to sovereign tribes in the Region. Like other Valley users, the tribes are concerned about regional water issues such as groundwater supply and quality. Tribal principals, as well as representatives the U.S. Bureau of Indian Affairs, were included in this Issues Group. **Table 4** indicates the organizations that participated in the Native American Tribes Issues Group.

The Native American Tribes Issues Group met several times in 2010, and was re-contacted in 2012 as part of the *2014 IRWM Plan Update* process. While tribal members met together as an Issues Group during development of the *2010 IRWM Plan*, tribal members requested that the CVRWMG hold separate meetings with each tribe to discuss the *2014 IRWM Plan Update*. One meeting was held with each tribe during development of the *2014 IRWM Plan Update* to gain feedback and information for the Plan. In the future, the Native American Tribes Issues Group may meet to discuss tribal-related water resources issues or as future items arise such as future rounds of grant funding.

**Table 4: Native American Tribes Issues Group Participants**

| Organization |
|---|
| Agua Caliente Band of Cahuilla Indians |
| Augustine Band of Mission Indians |
| Cabazon Band of Mission Indians |
| Morongo Band of Mission Indians |
| Torres-Martinez Desert Cahuilla Indians |
| Twenty-Nine Palms Band of Mission Indians |
| Bureau of Indian Affairs |
| Indian Health Services |
| Tribal Environmental Protection Agency |

## SNMP Issues Group

The SNMP Issues Group met from August to November 2012, during development of the *2014 IRWM Plan Update*, to develop the work plan for the Region's Salt and Nutrient Management Plan. The group discussed salinity management strategies, direction received from the Regional Water Quality Control Board, and

work plan elements. **Table 5** lists the organizations that participated in the SNMP Issues Group, in addition to the CVRWMG members.

**Table 5: SNMP Issues Group Participants**

| Organization |
|---|
| Regional Water Quality Control Board |
| Agua Caliente Band of Cahuilla Indians |
| Augustine Band of Mission Indians |
| Hi-Lo Desert Golf Course Superintendent's Association |
| Myoma Dunes Water Company |
| Salton Community Services District |
| General Public (Farmer) |

### IFM Issues Group

The IFM Issues Group met from January to September 2013, during development of the *2014 IRWM Plan Update*, to identify common flooding problems/sources, deficiencies in existing storm water/drainage facilities, and multi-benefit project opportunities. **Table 6** lists the organizations that participated in the IFM Issues Group, in addition to the CVRWMG members.

**Table 6: IFM Issues Group Participants**

| Organization |
|---|
| Coachella Valley Mosquito and Vector Control District |
| Agua Caliente Band of Cahuilla Indians |
| Coachella Valley Association of Governments |
| City of Cathedral City |
| City of Desert Hot Springs |
| City of Rancho Mirage |
| County of Riverside, Supervisor Benoit |
| County of Riverside, Transportation Department |
| Salton Community Services District |
| Pueblo Unido Community Development Corporation |

## 2.3 Outreach Activities

CVRWMG believes that public access is critical to the success of the IRWM Program. The CVRWMG has taken a strategic approach to public outreach using the following tactics:

A. Develop an initial public outreach plan that can be executed by any combination of agency staff or consultants.
B. Determine best management practices for the dissemination of information for public review and input (e.g. print media, agency public information personnel, email and website).
C. Make suggestions for establishing public meetings or reformatting of current meeting schedules to enhance public participation.
D. Refine the timeline for the IRWM process in such a way that appropriate dates for notification of public meetings, workshops, sub-committee meeting, etc. can be documented and addressed in a logical and orderly manner.

E. Apprise the members at each meeting, and sooner if necessary, as to the issues and needs for supporting public outreach.

The public is notified of meetings and given specific contact information, and participants are given sufficient time to prepare. The first opportunity for the public to attend IRWM program meetings was concurrent with the RAP application in October 2009. Since 2009, Planning Partners, Issues Groups, and public meetings have been held at various times and in conjunction with various milestones and phases of the IRWM Program.

Workshops are the core of stakeholder and public participation. Initial stakeholder workshops were aimed at formulation of interest groups for more specific development of concepts and funding proposals. The public workshops and Issues Groups are organized to help guide the actions and policies of the CVRWMG and support plan development and implementation. The CVRWMG recognizes the need and importance of public participation and will work diligently to make sure that not only the public is listened to, but that its valuable advice helps create the best IRWM Program possible for the region.

## Public Workshops

Public workshops have, and will continue to be, conducted to enable stakeholders and the general public to help guide the actions and policies of the CVRWMG, as well as support the development of future phases of the IRWM Program. Public workshops may be held at variable times of day as needed and in different geographic locations within the Region. As appropriate, meetings will be located in disadvantaged areas to facilitate attendance by members of the local public. Email notifications and telephone calls targeting DACs and EDAs will encourage participation in public workshops.

A public workshop is planned during the *IRWM/SWR Plan Update* to present the draft plan and solicit stakeholder and public feedback on its contents. Workshop preparation will include advertising on the website and through the existing stakeholder communication list, as well as other media to encourage public participation. Additional preparation will also include public meeting notices and invitations, development and distribution public workshop presentations, meeting handouts and notes, distribution of comment/feedback questionnaires, and compilation and summarization of public responses obtained during the workshops.

## Website

A Coachella Valley IRWM website (http://www.cvrwmg.org/) was developed as a key component of the regional outreach program. The website contains a wealth of information about the IRWM Program, including: explanation of the IRWM Program and funding opportunities; issues identification, goals and objectives, and other planning materials; the adopted *2010 IRWM Plan*; the adopted *2014 IRWM Plan Update*; information about potential IRWM projects to be included in grant applications; information about the CVRWMG; Planning Partners and Issues Group meeting agendas, summaries, and presentations; and other helpful links. Materials related to the planning process the complete *IRWM/SWR Plan Update* will be uploaded to the website once final. The website continues to be updated and amended on a monthly basis as the IRWM Program continues.

## Newsletters

Information regarding upcoming meetings may be relayed to the general public via fliers posted at community facilities, city and county office buildings, and announcements published in local media and organizational newsletters. An electronic newsletter may be produced at major milestones of the IRWM program, as needed to ensure stakeholders are being engaged.

### Press Releases

The CVRWMG will encourage local newspapers to provide coverage of meetings or to provide updates on the progress of IRWM planning efforts. Media relations provide a credible and economic approach to achieving widespread dissemination of key project information. Studies show that information presented to the public through a third party, such as the media, is more readily believed by the public, as opposed to advertising or other methods of information coming directly from the source. Press releases may be distributed quarterly or in conjunction with major milestones of the IRWM Program, including an open call for projects and *IRWM/SWR Plan Update* approval, as well as other important junctures.

### Online Project Database

To facilitate communications among planners and project proponents, the CVRWMG has developed an online project database that provides universal access to information about IRWM projects in the Coachella Valley region. The project database allows project proponents and other interested parties to add, edit, and review project proposals throughout the region. This tool will be updated to accommodate projects for the SWRP, as well to provide a single clearinghouse for both sets of projects. The enhancements will include updating project input forms for the additional SWRP information needs, map-based visualizations of projects, project search and reporting tools, and other advanced queries. Trainings for users will be available, as well as an updated user guide.

This enhanced tool, coupled with the public workshop, is intended to connect stakeholders with one another to identify and enhance synergies among projects, hopefully leading to better integration and stronger partnerships. Having a "living" project list online also allows project sponsors to edit and refine their projects to maximize multi-benefit outcomes. Finally, the online project database will enhance CVRWMG efforts to inform the general public about collaborative IRWM and SWRP approaches through concrete project examples.

### Correspondence

An electronic email list of stakeholders and interested parties, and any special subgroups, will be maintained and updated throughout the *IRWM/SWR Plan Update* process. Email notices, the primary method of communication, will be sent to announce the availability of new materials on the website, meeting notes, and upcoming meetings.

# 3 Disadvantaged Communities Outreach

There are several terms that are used in referencing disadvantaged communities throughout this Outreach Plan. A Disadvantaged Community (DAC) is defined as a community with an annual median household income of that is less than 80% of the statewide annual median household income. Environmental Justice (EJ) is defined as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." An Economically Distressed Area (EDA) is a community with a population of 20,000 persons or less, a rural county, or a reasonably isolated and divisible segment of a larger community where the segment of the population is 20,000 persons or less, with a median household income of less than 85% of the statewide median household income, and with one or more of the following conditions: (1) financial hardship, (2) unemployment rate at least 2% higher than the statewide average, and/or (3) low population density. [1]

## 3.1 Purpose

The goal of DAC outreach is to identify and obtain input from groups that may be otherwise restricted from participating in the IRWM planning and implementation efforts due to financial constraints. Through

targeted outreach, the CVRWMG has sought to learn more about the major water-related concerns facing these groups such that long-term implementation of the IRWM Program is responsive to those needs. Outreach to organizations also involved with EJ issues ensures that water management activities implemented under the Coachella Valley IRWM Program do not unduly burden DACs (e.g., through plant siting decisions). Involvement by DAC and EDA stakeholders in the SWRP development process is also essential to ensure that environmental injustice within local watersheds is addressed.

Regional DAC outreach effort was coordinated with the DAC Outreach Demonstration Program that was conducted in the Coachella Valley through a separately-funded grant from DWR in 2013/2014 (described in detail below). The DAC Outreach Demonstration Program for the CVIRWM was developed concurrently with the *2014 IRWM Plan Update* and was incorporated as Volume II of the Plan. The Program can be found here: http://www.cvrwmg.org/dac.php.

## 3.2 Participants

Numerous local and statewide DAC and EJ organizations were targeted during outreach for the Coachella Valley IRWM Program:

- Building Healthy Communities
- California Rural Legal Assistance Inc (CRLA)
- Clean Water Action
- Coachella Valley Economic Partnership
- Coachella Valley Housing Coalition
- Community Water Center
- Desert Alliance for Community Empowerment
- Desert Edge Community Council
- El Sol Neighborhood Educational Center
- Environmental Justice Coalition for Water (EJCW)
- Leadership Counsel for Justice and Accountability
- Building Healthy Communities
- California Rural Legal Assistance Inc (CRLA)
- Coachella Valley Economic Partnership
- Coachella Valley Housing Coalition
- Clean Water Action
- Community Water Center
- Desert Alliance for Community Empowerment
- Desert Edge Community Council
- El Sol Neighborhood Educational Center
- Environmental Justice Coalition for Water (EJCW)
- Leadership Counsel for Justice and Accountability
- Poder Popular
- Pueblo Unido Community Development Corporation
- Inland Congregation United for Change (ICUC)
- Representative from Assemblymember Garcia
- Representative from Senator Jeff Stone
- Representative from Assemblymember Chad Mayes
- Rural Community Assistance Corporation

Communities targeted as part of the DAC and EJ 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, or income. The CVRWMG has conducted work through the DAC Outreach Demonstration Program to tailor a more regionally-specific definition of DACs and identify representatives of those communities.

## 3.3 Outreach Activities

### DAC/EJ Outreach Meetings

After completion of the DAC Outreach Contract, the CVRWMG has continued to facilitate meetings with DAC members to better understand their critical water supply and water quality needs and to identify potential solutions. Initial meetings, conducted under the DAC Outreach Contract, focused on bringing any groups that were not involved in the earlier efforts up to speed and informing all groups about recent activities and opportunities. Subsequent meetings expanded the methods of outreach in DAC/EJ communities, updated those groups which may not be able to attend or participate in broader Planning Partner meetings, and developed IRWM planning efforts to meet the needs of each community. The DAC outreach meetings aimed to facilitate the integration of disparate project needs into meaningful programs to better manage water supply and water quality in underserved areas. The CVRWMG will continue to reach out to DACs throughout the development of the *IRWM/SWR Plan Update*. Additional DAC/EJ outreach meetings may be held, as needed, to ensure DAC needs are considered in the SWRP additions to the plan.

Some of the outreach meetings may be held at times convenient for DAC representatives (in the evening) and in different geographic locations within the Region. Meeting preparation includes public meeting notices and invitations; development and distribution of presentations, meeting handouts and notes; and coordination of speakers/presenters.

### Notices and Newsletters

Upon completion of the DAC Outreach Contract, the CVRWMG has continued to notify members of DACs of the current state of the Coachella Valley's water-related resources, the IRWM program, and solutions being generated to address their needs. The focus of these efforts is to continue to identify the critical needs of the targeted communities.

### Technical Support for DACs

Through the work completed for the *2014 IRWM Plan Update* and the DAC Outreach Program, critical DAC issues and conflicts have been relatively well defined. However, DAC representatives often do lack the resources or technical capacity to develop project submittals that address those critical needs. The CVRWMG has continued to work with those project sponsors during the grant solicitations to develop project scopes, budgets, and cost estimates to help ensure that DAC projects are developed in sufficient detail to be included in the IRWM Plan Update and future funding applications. Multiple DAC projects were funded through the Proposition 84 IRWM funding rounds as a result of this ongoing support.

# 4 Tribal Outreach and Coordination

## 4.1 Purpose

The goal of engaging the Valley's tribal governments is to better understand their critical water resources issues and needs. Through targeted outreach, the CVRWMG seeks to learn more about the major water-related concerns facing the tribes such that long-term implementation of the IRWM Plan is responsive to those needs.

## 4.2 Participants

Tribal participants were contacted based on input from currently identified tribal representatives and the Planning Partners. The following six Native American tribes in the region were targeted during outreach for the IRWM program:

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Mission Indians
- Cabazon Band of Mission Indians
- Morongo Band of Mission Indians
- Torres-Martinez Desert Cahuilla Indians
- Twenty-Nine Palms Band of Mission Indians

Additionally, meetings may include the Bureau of Indian Affairs or other tribal coordinating agencies or groups as appropriate.

## 4.3 Outreach Activities

### Tribal Outreach Meetings

The CVRWMG hosted one-on-one meetings with five of the aforementioned tribal representatives and one Issues Group meeting open to all tribal representatives to better understand their critical water supply and water quality needs and to identify potential solutions as part of the *2014 IRWM Plan Update*. Tribal outreach meetings aimed to inform the tribes about the IRWM program and its purpose, the local IRWM planning process, and upcoming funding opportunities. These meetings also focused on clarifying the tribe's water resources issues and needs, and identifying integrated project concepts that address those needs. The CVRWMG will continue to reach out to these tribes throughout the development of the *IRWM/SWR Plan Update*.

### Notices and Newsletters

CVRWMG staff have worked with community leaders to identify appropriate methods for notifying members of the tribes of the current state of the IRWM program and timing of project submittals. These methods may include techniques such as notices at community gathering sites, newsletters, or mailings. The focus of these efforts is to identify the tribes' critical water resources needs and how those are represented in the IRWM Plan. In addition, one-on-one communication between tribal representatives and the CVRWMG will continue to be used to encourage participation in IRWM public meetings.

**Table 7: Coachella Valley IRWM Region Stakeholders**

| Agency | Contacted | Stakeholder List | Planning Partners |
|---|---|---|---|
| **CVRWMG** | | | |
| Coachella Valley Water District | | ✓ | ✓ |
| Coachella Water Authority | | ✓ | ✓ |
| Desert Water Agency | | ✓ | ✓ |
| Indio Water Authority | | ✓ | ✓ |
| Mission Springs Water District | | ✓ | ✓ |
| Valley Sanitary District | | ✓ | ✓ |
| **Cities** | | | |
| City of Cathedral City | ✓ | ✓ | ✓ |
| City of Coachella | ✓ | ✓ | ✓ |
| City of Desert Hot Springs | ✓ | ✓ | |
| City of Indian Wells | ✓ | | |
| City of Indio | ✓ | ✓ | ✓ |
| City of La Quinta | ✓ | | |
| City of Rancho Mirage | ✓ | | |
| City of Palm Desert | ✓ | ✓ | ✓ |

| Agency | Contacted | Stakeholder List | Planning Partners |
|---|---|---|---|
| City of Palm Springs | ✓ | ✓ | |
| **County of Riverside** | | | |
| Coachella Valley Economic Partnership | ✓ | ✓ | ✓ |
| Riverside County Transportation and Land Management Agency | ✓ | ✓ | |
| Riverside County Department of Health | ✓ | ✓ | |
| Riverside County Regional Park District | ✓ | | |
| Riverside County Economic Development Agency | ✓ | ✓ | |
| Riverside County Flood Control and Water Conservation District | ✓ | ✓ | ✓ |
| **Community Councils** | | | |
| Bermuda Dunes Community Council | ✓ | | |
| Desert Edge Community Council | ✓ | ✓ | |
| Desert Palms Community Council | ✓ | | |
| Indio Hills Community Council | ✓ | | |
| Mecca Community Council | ✓ | | |
| North Shore Community Council | ✓ | | |
| Oasis Community Council | ✓ | | |
| Sky Valley Community Council | ✓ | | |
| Thermal Community Council | ✓ | | |
| Thousand Palms Community Council | ✓ | | |
| Vista Santa Rosa Community Council | ✓ | | |
| **Elected Officials** | | | |
| Senator Jeff Stone | ✓ | ✓ | ✓ |
| Assemblymember Eduardo Garcia (56th Dist.) | ✓ | | |
| Assemblymember Chad Mayes (42th Dist.) | ✓ | ✓ | |
| Supervisor Manuel Perez (4th Dist.) | | | |
| **Resource Agencies** | | | |
| California Department of Fish and Wildlife | ✓ | | |
| California Department of Water Resources | ✓ | ✓ | ✓ |
| Colorado River Regional Water Quality Control Board | ✓ | ✓ | ✓ |
| Indian Health Services | ✓ | | |
| U.S. Bureau of Indian Affairs | ✓ | ✓ | |
| U.S. Bureau of Land Management | ✓ | | |
| U.S. Department of Agriculture | ✓ | ✓ | |
| **Special Interests** | | | |
| Big Morongo Preserve | ✓ | | |
| Bighorn Research Institute | ✓ | | |
| Building Healthy Communities | | ✓ | |
| Building Industry Association | ✓ | | |
| Center for Collaborative Policy | | ✓ | |
| Center for Natural Land Management (fringed toed lizard preserve) | ✓ | | |
| Clean Water Action | ✓ | ✓ | |
| Coachella Valley Archaeological Society | ✓ | | |
| Coachella Valley Association of Governments | ✓ | ✓ | |
| Coachella Valley Conservation Commission | ✓ | | |
| Coachella Valley Economic Partnership | | ✓ | ✓ |
| Coachella Valley Housing Coalition | | ✓ | |

| Agency | Contacted | Stakeholder List | Planning Partners |
|---|---|---|---|
| Coachella Valley Mosquito and Vector Control | ✓ | ✓ | |
| Coachella Valley Mountains Conservancy | ✓ | | |
| Coachella Valley Parks and Recreation District | ✓ | | |
| Coachella Valley Resource Conservation District | ✓ | | |
| Council of Mexican Federations in North America | ✓ | | |
| Deep Canyon Desert Research | ✓ | | |
| Desert Alliance for Community Empowerment | ✓ | ✓ | |
| Desert Empire Homes | | ✓ | ✓ |
| Desert Recreation District | ✓ | | |
| East Valley Housing Review Committee | | ✓ | |
| Friends of the Desert Mountains | ✓ | ✓ | |
| Groundwater Guardians | ✓ | | |
| Hi-Lo Golf Course Superintendents Association | ✓ | ✓ | |
| Inland Congregations United for Change | ✓ | | |
| League of Women Voters | ✓ | | |
| Natural Science Collaborative of the Desert Region | | ✓ | |
| Sierra Club | ✓ | | |
| Wildlands Conservancy | ✓ | | |
| **Tribes** | | | |
| Agua Caliente Band of Cahuilla Indians | ✓ | ✓ | ✓ |
| Augustine Band of Mission Indians | ✓ | ✓ | ✓ |
| Cabazon Band of Mission Indians | ✓ | ✓ | ✓ |
| Morongo Band of Mission Indians | ✓ | ✓ | |
| Torres-Martinez Desert Cahuilla Indians | ✓ | ✓ | ✓ |
| Twenty-Nine Palms Band of Mission Indians | ✓ | ✓ | ✓ |
| Inter-tribal Council | ✓ | | |
| **School Districts** | | | |
| Coachella Valley Unified School District | ✓ | | |
| Desert Sands Unified School District | ✓ | | |
| Palm Springs Unified School District | ✓ | | |
| **Academia** | | | |
| California State University San Bernardino | ✓ | ✓ | |
| Loma Linda University | ✓ | ✓ | |
| University of California Irvine | ✓ | ✓ | |
| University of California Riverside | ✓ | | |
| **Other Water/Wastewater Companies** | | | |
| Borrego Water District | ✓ | ✓ | |
| Imperial Irrigation District | ✓ | ✓ | ✓ |
| Hi-Desert Water District | | ✓ | ✓ |
| Mojave Water Agency | ✓ | ✓ | ✓ |
| Myoma Dunes Mutual Water Company | ✓ | | |
| Salton Community Services District | ✓ | ✓ | |
| San Gorgonio Pass Water Agency | ✓ | ✓ | |
| **Private Pumpers and Large Irrigators** | | | |
| Agricultural pumpers | ✓ | | |
| Home Owners' Associations | ✓ | | |
| Golf courses | ✓ | | |
| Nurseries | ✓ | | |

| Agency | Contacted | Stakeholder List | Planning Partners |
|---|---|---|---|
| **Disadvantaged Community Organizations** | | | |
| California Rural Legal Assistance, Inc. | ✓ | ✓ | |
| Clean Water Action | ✓ | ✓ | |
| Community Water Center | ✓ | ✓ | |
| Desert Alliance for Community Empowerment | ✓ | ✓ | |
| El Sol Neighborhood Educational Center | | ✓ | |
| Environmental Justice Coalition for Water | ✓ | ✓ | |
| Leadership Counsel for Justice and Accountability | ✓ | ✓ | ✓ |
| Poder Popular | ✓ | | |
| Pueblo Unido CDC | ✓ | ✓ | ✓ |
| Rural Community Assistance Corporation | ✓ | ✓ | ✓ |

# Appendix VI-F: Public Comments

This appendix includes all of the comments received during the public comment period for the draft 2018 Coachella Valley IRWM/SWR Plan (August 20, 2018 through September 21, 2018).

In addition to the comment letters, this appendix includes a comment matrix that includes notes regarding if, how, and/or why comments received during the public comment period were incorporated into the final 2018 IRWM/SWR Plan.

Comment letters were received from the Agua Caliente Band of Cahuilla Indians, the City of Indio, and the Colorado River Basin Regional Board.

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## Comments Received on the Draft 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan

| # | Date Received | Commenter | Plan Section | Page Number | Comment | Response |
|---|---|---|---|---|---|---|
| 1 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | General | N/A | ("Groundwater is currently the largest source of water supply for the Region."<br>"Collecting groundwater data is vitally important in the Region to ensure adequate water quality and supply.")<br><br>The tribe appreciates the efforts made by the CVRWMG to include all referenced materials in the appendix package; however, the 510 pages of appendices accompanied by a 510 page Plan document is difficult to navigate in a 30-day comment period. To help stakeholders and other readers, the Tribe suggests that an effort be made to streamline this process by providing links in the Plan to the locations of the citations within the appendices so that readers can more readily find this information. | We appreciate the comment and the driver behind it. Given the size of the document, unfortunately, due to the level of effort and the structure of the document, we cannot update the report with hyperlinks at this time. |
| 2 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.2.1 Watershed | 2-6 | The plan states "The Whitewater River Watershed consists of sparsely populated mountains, desert, and agricultural lands with few impervious urban areas." Later in the same paragraph on P 2-6, the Plan states "…with increased development in the Region, natural recharge areas have been disrupted. Large urban areas have led to impervious surface that generate greater runoff flows and decrease groundwater recharge." The Tribe recommends re-wording this paragraph for consistency, removing the contradiction. | Comment incorporated and reflected in the report. |
| 3 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.2.2 Water Systems and Distribution | 2-8 to 2-10 | This section provides information about quantities of water extracted from the groundwater basin as well as recharge areas and quantities. The first reference to groundwater quantity is on Page 2-8 where it notes "(t)he Coachella Valley Groundwater Basin has an estimated storage capacity of approximately 40 million acre-feet of water." Page 2-10 lists "recent annual pumping volumes" by each water purveyor in total, then in a separate paragraph it notes the sub-basin each water purveyor pumps from. To help stakeholders and other readers, the Tribe would like to see a new table with the groundwater information broken down by sub-basin (using a common set of sub-basins, as suggested in the preceding paragraph) to allow for comparison. The table would need to include:<br>1. Sub-basin name<br>2. Sub-basin storage capacity (AF)<br>3. Annual pumping volume from each sub-basin<br>4. Annual recharge to each sub-basin<br>5. Annual overdraft in each sub-basin<br>6. Cumulative overdraft in each sub-basin | The CVRWMG endeavors to base management actions on the most relevant and accurate information available. Given the complex interactions between and among subbasins and differing importance for regional water management, including significant variation in storage capacity, recharge, and pumping volumes, a subbasin-to-subbasin comparison is not always possible or useful as a planning mechanism. The requested information is available for the Indio and Mission Creek Subbasins in the SGMA Annual Reports, which can be accessed here:<br><br>http://www.cvwd.org/357/Sustainable-Groundwater-Management-Act<br><br>The SGMA Annual Reports are prepared annually as a requirement of SGMA. |
| 4 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.2.2 Water Systems and Distribution | 2-12 | The Plan states "Recent years have experienced a less than average rate of natural recharge, approximately 40,000 AFY on average from 2000-2009." The Tribe believes the information cited on the average rate of natural recharge is dated and questions why the CVRWMG is not utilizing more current data. For this reason, the Tribe recommends that this paragraph is updated with the most recent data or discuss why the data is not available. | The report will be updated to include more recent values. |
| 5 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.2.2 Water Systems and Distribution | 2-12 | The Plan states that the facility has an average annual recharge goal of 100,000 AFY. It is unclear whether the facility has achieved this goal in recent years. (i.e. 2010 to present) since the Plan only includes information regarding 2017 performance. The Tribe recommends that the Plan include a table that compares the actual yearly rate of recharge for years 2010 to present to the annual recharge goal of 100,000 AFY, or discussion that contains this information. | The following sentence will be added to the report:<br><br>"From 2010 to 2017, the average amount of water delivered to the Whitewater River Groundwater Replenishment Facility was 146,315 AF with a maximum of 385,994 AF in 2017, and a minimum of 865 AF in 2015." |
| 6 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.2.2 Water Systems and Distribution | 2-13 | The Plan states "…from 2000 to 2009 there was an average annual groundwater storage loss of 110,000 AFY in the Whitewater River Subbasin." The Tribe recommends that this statement be updated to also include current information (i.e., 2010 to present) so this stakeholders and other readers can see what progress, if any, has been achieved towards eliminating overdraft conditions. | The following sentence will be added to the report:<br><br>"Since 2009, the 10-year average change in storage has been positive, with an upward trend from 2009-2017 (CVWD 2017). |
| 7 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.2.2 Water Systems and Distribution | 2-17 | Phasing of the sentence "Surface water that is not diverted by the Tribe is put to beneficial use, such as groundwater recharge" suggests that water diversions by the Tribe are not being put to beneficial use. | The sentence will be changed to "Surface water that is not diverted for beneficial use by the Tribe is put to other beneficial uses such as groundwater storage for municipal and agricultural uses." |

## Comments Received on the Draft 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan

| # | Date Received | Commenter | Plan Section | Page Number | Comment | Response |
|---|---|---|---|---|---|---|
| 8 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.3.1 Land Use Agencies | 2-40 (Table 2-7) | The Plan explains that the population figures in Table 2-7 are based on the 2015 American Communities Survey (ACS) 2011-2015 Population Estimates data and notes that the population estimates "do not take into consideration seasonal population which increases significantly between October and May..." A similar statement was made in the 2014 IRWM Plan. It is unclear whether the members of the CVRWMG are tracking water usage associated with the Valley's seasonal population. For this reason, the Tribe requests that the Plan more clearly and adequately address the seasonality of the Valley's population and how this affects water usage. It would be helpful to also include the most recent data, which as of writing is 2017. Here is the information from the US Census for select cities int he west Whitewater River:.... | Water supply agencies that are members of the CVRWMG keep track of water use on a monthly basis based on billing records. The effect of the seasonal population is clearly identifiable in the water consumption data available from the Region's water utilities. The footnote will be modified to say " These population figures are based on 2015 American Communities Survey (ACS) 2011-2015 Population Estimates data. As such, they do not take into consideration seasonal population, which increases significantly between October and May due to the Region's mild winter climate. The water use and wastewater generation by the seasonal population is considered in the Region's water and wastewater agencies forecasts and plans, such as the UWMPs" |
| 9 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.5.1 Groundwater Quality | 2-55 | The Plan states "Basin-wide groundwater quality is difficult to characterize as groundwater quality varies throughout the Valley. The water quality in a given well depends upon well depth (or the screened interval of the water supply well), proximity to faults, presend of surface contaminants, proximity to recharge basins, and other hydrogeologic features." If true, this statement is somewhat troubling because it implies a lack of coordination between members of the CVRWMG and a lack of comprehensive information on the subject. If there is any validity to this statement, the Tribe recommends that CVRWMG members develop a state-of-the-art groundwater quality database for the Valley that incorporates all data into a format useable for each member and the various stakeholders. Further, does the Region 7 Water Quality Review Board agree with this statement? | The report will be changed to read: "Basin-wide groundwater quality varies naturally throughout the Coachella Valley depending on proximity to faults and other hydrogeological features. Groundwater quality can also vary depending on proximity to recharge basins or to the presence of surface contaminants. At individual wells, water quality depends on the depth of the well and screened intervals. Public water systems in the Region consistently monitor groundwater production wells to ensure compliance with drinking water quality standards. Water supply agencies in the Region also monitor the groundwater to comply with permit requirements and as part of other required and voluntary groundwater monitoring programs. |
| 10 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.4.1 Water Supply | 2-43 (Table 2-8) | The title of Table 2-8 is misleading. Groundwater is the primary source of water supply to the Valley. However, due to almost total depletion of the Valley's groundwater basins over the years, external sources have been used as the primary supply for these basins. So, it is misleading to suggest that the external supply sources noted in Table 2-8 are in addition to groundwater - they are the groundwater once recharge. Furthermore, Table 2-8 identifies SWP Exchange water as a different supply source than from the Colorado River. This is also misleading since the Valley does not currently receive SWP Exchange water. The Tribe requests that the Plan more clearly identify whether a portion of the SWP Exchange water noted in the Table is actually Colorado River water or whether the SWP Exchange water noted in the Table is water that a CVRWMG member may be legally entitled to but has not received. | The title of the table will be changed to "Summary of Coachella Valley Non-Groundwater Supply Sources" Also, "Natural Inflow" in the table will be changed to "Natural Surface Inflow". The SWP item will include an additional footnote reading "3: Actual SWP water is not received in the region due to limitations in the infrastructure to deliver it. The SWP water into the region is exchanged for Colorado River water as part of an agreement with Metropolitan Water District of Southern California. |
| 11 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.4.1 Water Supply | 2-43 (Table 2-8) | The SWP Exchange uses the historical water deliveries prediction of 43%, rather than DWR's numbers which average 62% of the total Table A deliveries. It is unclear why this table does not also include variation and uncertainty for the non-SWP water sources. For example, the Colorado River is projected to be near a "shortage" declaration on January 1, 2019, and currently projected to be found in "shortage" on January 1, 2020. | Table 2-8 will be edited to include SWP reliability of 50% and 65% representing the low end and high end of expected long-term average reliability. To date, CVWD has had 100% reliabiity for its imported Colorado River water source and there is currently no basis for forecasting reliability under potential uncertain future conditions. |
| 12 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.4.2 Water Demand | 2-48 | "The total potable water (water that meets drinking water standards) demand for the CVRWMG agencies is projected to increase by approximately 32% from 197,911 AFY in 2020 to 289,980 AFY in 2035." Note, this is inconsistent with a similar statement on page 3-1 stating "by approximately 50%." Moreover, (289,980/197,911)*100%=146.5%, which is a 46.5% increase. | The sentence will be changed to "The total potable water (water that meets drinking water standards) demand for the CVRWMG agencies is projected to increase approximately 47% from 197,911 AFY in 2020 to 289,980 AFY in 2035." |

## Comments Received on the Draft 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan

| # | Date Received | Commenter | Plan Section | Page Number | Comment | Response |
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| 13 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.4.2 Water Demand | 2-47 (Table 2-12 & Table 2-13) | Table 2-12 shows 2017 DWA Potable Demand is 27,648 AFY. In Table 2-13, the 2020 DWA Projected Demand is 42,670 AFY (36,570 AFY potable municipal + 6,100 AFY non-potable recycled) demand. This shows between 2017 and 2020, DWA Potable Demand will increase significantly by 32%. Further on Page 2-48, the Plan notes that "DWA has a diverse source of water supply, including groundwater, surface water, imported water, and recycled water." This description of water use is misleading; 5% of potable water supply is surface water, and 95% of the water supply is groundwater. In short, the basin is pumped for water, and then replenished with imported Colorado River water - imported water is not in addition to groundwater, it replaces groundwater previously pumped from the basin. | 1) Comment on demand: A footnote will be added to Table 2-12 to indicate that demands in 2017 are effected by multiple demand management and water use efficiency measures applied during the recent/current drought, as wells as lower than expected population growth due the 2008 economic downturn. Additionally, a footnote will be added to Table 2-13 to indicate that, due to recent water use efficiency measures and the lower demands currently being observed, the forecasted demands for 2020 may not be realized in that year. We will also indicate that the forecasts in the table correspond to the most recent demand forecasts available at the time of production of this plan and are well documented in the agencies' Urban Water Management Plans.<br>2) Comment on Supply: the sentence will be modified to read: "DWA's supply portfolio includes groundwater, surface water, imported water and recycled water". With respect to the groundwater use, imported water used for groundwater replenishment constitutes a distinct source of water with respect to native groundwater and it is common practice by agencies, and appropriate from a technical stand point, to refer to imported replenishment water as a separate source. The surface water for replenishment is subject to different drivers of surplus and shortage than local groundwater, and it is managed and administered separately from native groundwater, up to the point where it is extracted for use. |
| 14 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.4.2 Water Demand | 2-52 | Here, the Plan shows the monthly service and meter charges of each CVWMG agency. DWA is the only agency that does not use a tiered system. "DWA does not use a tiered rate system but does not impose an increased rate for customers at higher elevation, based on DWA Zone Areas (locations) and has a drought surcharge that can be imposed when necessary." The Tribe requests further clarification in the Plan for why DWA does not use a tiered system especially when tiered rate systems have been shown to reduce water usage. | The purpose of this section is to accurately show the rate structure for each agency. The plan does not advocate any one particular rate structure. Without tiered rates, Desert Water Agency has been able to achieve water use reduction figures similar to those achieved by neighboring agencies in both short and long-term. |
| 15 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.5.1 Groundwater Quality | 2-55 | The Plan states "Naturally occurring substances as uranium, arsenic, chromium, and fluoride have been detected, and are likely due to natural geological conditions." The Tribe suggests adding a few sentences to help clarify to the reader what the member agencies have done to investigate the sources of these substances, some of which are cancer-causing, and how the member agencies arrived to the claim that they are "likely due to natural geologic conditions." | The report will be updated to include additional language supporting that statement. |
| 16 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 2.6 Social and Cultural Make-up | 2-70 | "Population growth in Coachella Valley increased by 49.5% from 2000-2015, which is faster than the US (14%), and California (15%) rates." Sentence is unclear. This is presumably the increase in population of the valley as a whole was 49.5% over this time period, not the increase in the growth rate of the population, or annual compounding growth rates. Population growth was not evenly distributed. Using numbers from the US Census for the years 2000-2015, cities in the West Whitewater River area had large population growth, but less than 49.5% growth:... | The word rate will be deleted from the sentence. |
| 17 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 3.1.5 Water Quality | 3-16 | The Plan states "Although groundwater quality is generally considered high in the Region, groundwater quality is a concern in isolated areas of the Region." The Tribe requests that the Plan more clearly depict these isolated areas of concern. The Plan also states that there are wells that have detected high salinity, arsenic, nitrate, fluoride, ammonium perchlorate, chromium-6, uranium, several organic compounds, PCE, and others. Again, the Tribe recommends that the Plan include a depiction that shows the location of current and emerging water quality issues. | The plan is an overall narrative of water quality within the Coachella Valley. The individual agency or district that serves water to a particular area would be best suited to provide more information regarding isolated areas. |
| 18 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 3.1.9 Tribal Nations | 3-30 | Section starts by a comparison to DAC issues, rather than starting with the specific issues identified by tribal governments and tribal water management. While several Tribes do include DAC areas and similar problems, tribal land is located throughout the Coachella Valley, and so the section should start on shared tribal issues. | The report has been modified to include this distinction. |
| 19 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 3.1.10 Summary of Water Management Issues | 3-32 (Table 3-2) | Groundwater quality section should include perchlorate and uranium as issues of concern. Perchlorate is an issue identified in a project in Appendix VI-H, and has been detected in tribal wells. Uranium is actively managed by the Mission Springs Water District through wellhead treatment "at a significant cost" (Appendix VI-H). | Perchlorate and uranium are listed in Section 3.1.5 as issues of general concern. Section 2.5.1 also listed uranium as a contaminant of concern and the report will add a discussion of perchlorate to that section as well. |

## Comments Received on the Draft 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan

| # | Date Received | Commenter | Plan Section | Page Number | Comment | Response |
|---|---|---|---|---|---|---|
| 20 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 3.2.1 Project Impacts and Effects of Climate Change | 3-36 | An additional flood risk that can be exacerbated by wildfires is non-native invasive vegetation species. Land that has been cleared by wildlife is more susceptible to regrowth of non-native species such as fountain grass and tamarisk. The species can out-compete native species and dominate riparian areas. Once established, tamarisk in particular can cause a decrease in water filtration and increase water degradation. The Tribe recommends incorporating a discussion of this type of potential risk as it relates to climate charge. | The report will be modified to include:<br><br>"Although lands that have been subject to stochastic events such as wildfire can potentially be susceptible to invasion by non-native vegetation, such as non-native grass and/or tamarisk, native species often re-sprout vigorously following fire. If lands were previously dominated by native vegetation, these native species typically re-establish first and can outcompete non-native species that may be introduced afterwards. Where non-native species establish, there can be changes to the soil hydrology and chemistry." |
| 21 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 5.1 Coachella Valley Tribes | 5-2 (Table 5-1) | Table 5-1 identifies Agua Caliente Ethnology/Language as "Pass Cahuilla" and correct Tribal Member Population to 504. | Corrected Tribal Member Population to 504. |
| 22 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 5.4.1 Tribal Water Resources Concerns | 5-9 | "However, arsenic and hexavalent chromium are not found in Colorado River water but are believed to be naturally-occurring in the geologic formations of the Coachella Valley, and perchlorate in Colorado River water has been remediated at the source (CVWD 2012)." [emphasis added] A categorical statement such as the bolded text is generally false for all natural waters, this includes the Colorado River where both hexavalent chromium and arsenic have been measured. The general statement here is similar to the other descriptions of tribal lands which are somewhat unclear that tribal lands are found throughout the Coachella Valley.<br><br>In terms of arsenic this is additionally misleading. As shown in Figure 1 of Appendix VI-J, groundwater arsenic concentrations under tribal lands in the East Whitewater River Valley are generally significantly higher than Colorado River water. However, as also shown in the same figure, natural groundwater under tribal lands in the West Valley generally have concentrations of arsenic less than the detection limit. | The identified sentence will be modified to read:"Arsenic and hexavalent chromium are naturally occurring in the geologic formations of some areas of the Coachella Valley, and no evidence suggests that Colorado River water is the source of existing detections. Moreover, perchlorate in Colorado River water has been remediated at the source (CVWD 2012)." |
| 23 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 9.1 IRWM Regional Priorities | 9-4 | As was noted in the 2014 Plan, Priority 7 is to create a data management system. The Tribe has made this comment repeatedly throughout the years, when given an opportunity to comment on various agency water management plans, and continues to strongly support the development of an online database. There is no mention of a comprehensive database of all water information to improve transparency and management of the regional water resources and enable greater public participation. CVRWMG could best serve federally recognized tribes, its stakeholder, and the public at large by organizing information about the region from these websites into a coherent and usable source of water information. | A regional data management system continues to be of interest in the Region. Financial resources for the development of such system have not been identified. Resources to keep such system relevant by adding more data and maintaining its functionality and value are significant. That continues to be the main hurdle in implementation of such as system. As of the production of this document, no specific funding sources or plans exist for its implementation. The State of California maintains a publicly available water quality database, known as Groundwater Ambient Monitoring and Assessment Program, that contains information regarding water quality in the Coachella Valley. |
| 24 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 9.5.3 Stormwater Resource Plan Project Prioritization Process | 9-29 | As projects move forward from conceptual to the implementation stages, the Tribe recommends that the CVRWMG or project sponsors provide adequate notice to appropriate tribes, stakeholders, and other readers about the comment periods for projects that have been included in the project database. | The IRWM process includes regular meetings with planning partners where we keep them up to date on the evolution of the program. This includes communication when projects in the database are moving from the conceptual phase in the database to being included in a grant application. If and when projects in the grant application are funded, the CVRWMG provides information on the grant award and continues communication on the overall program through emails and Planning Partners meetings. The CVRWMG is committed to continuing communication by email, website and Planning Partners meetings. |
| 25 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 9.5.4 Integrated Metrics-Based Analysis of Project Benefits | 9-44 | It is unclear how "increased urban green space" is considered an environmental benefit and how increased urban green space achieves the objectives of the Plan since, arguably, the increase of urban green space in a desert environment such as the Valley increases water demand. For this reason, the Tribe recommends rewording this sentence as to promote increased pervious surfaces and not green space. | The sentence will be changed to "increase in urban natural landscape and pervious surface" |

## Comments Received on the Draft 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan

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| 26 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 5.5 Tribal Participation in Water Resources Planning | 5-10 to 5-11 | Tribal participation in development of the 2018 plan is not described. Out reach and discussions describe earlier 2010 and 2014 meetings and outreach. | The document will be changed as follows: Second paragraph on page 5-11 first sentence will be changed from to "The CVRWMG has sought to implement this statewide priority at the local level by conscientiously engaging the Tribes in the 2014 IRWM Plan Update with continued input through Planning Partners meeting in the 2018 Update." Also, the last sentence in the same paragraph will be changed to: "Tribes, as members of the Planning Partners, have continued to attend Planning Partners meetings and have provided feedback in the process of developing this IRWM/SWR Plan, including the prioritization of benefits for stormwater projects as part of a workshop exercise. This chapter is based on those communications. |
| 27 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | 11.5 Finance | 11-35 | All project proponents that receive IRWM grant funding will generate project progress reports to be submitted to CVWD with quarterly invoices." [emphasis added] The previous paragraphs indicated that "CVRWMG is the Responsible Agency in charge of evaluating" so it is unclear if this it should be CVRWMG or CVWD in the above. | Sentence revised to "All project proponents that receive IRWM grant funding will generate project progress reports to be submitted to the Lead Agency with quarterly invoices." |
| 28 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | Appendix VI-H | | Of the 53 pages of listed projects included as of February 23, 2018, only two projects "Desert Cahuilla Wetlands Expansion" and the "Whitewater Channel Extension to Connect with Current Salton Sea Water Level" are indicated as being organized under the auspices of a tribal government. The first being "Tribal Government" (not indicating which tribe), and the second being "Torres Martinez Desert Cahuilla." This number seems very low considering the identified tribal needs and concerns in the document. | The database historically follows some trends where projects are added or updated as grant opportunities become available. At the time of the public draft, it is the case that there are only two projects from tribal governments. Given that Round 1 of the Implementation grants is launching now (with DWR releasing the guidelines for the grants) there will be a new call for projects issued in November 2018. There will also be a Planning Partners meeting on November 8, 2018 to solicit projects and encourage tribes to submit. |
| 29 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | Appendix VI-H | | The proposed "Perris Dam Remediation Program" is outside of the IRWM planning region. The listed need statement does not explain the relevance of the project to the IRWM region. | The database will be corrected as necessary |
| 30 | 9/20/2018 | Agua Caliente Band of Cahuilla Indians | Appendix VI-H | | "Torres Martinez Septic to Sewer Conversion Project" states 'This project will eliminate virtually raw Colorado River water into the homes. Because it is sitting on a recharge site, there is no way to eliminate the contaminates. The ammonium perchlorate was recently tested, and the results were at 6.9 ppb exceeding California State Standards.' More details regarding this measurement such as where and when would be useful to understand this project. | The program will follow up with project sponsors to vet this project description<br><br>The project description was provided by the project proponent and we will forward the comment for them to update the database. |
| 31 | 9/21/2018 | Sara Toyoda - City of Indio | 3.1.4 | 3-16 | Stormwater Capture: You may want to acknowledge that many cities have been requiring this since long before the Board required it. | The text has been modified to read: “Stormwater capture has been identified as a potential method to augment local water supplies in the Coachella Valley. Stormwater retention systems located in strategic areas of suitable geology could capture runoff from surrounding mountains within the Whitewater River and Mission Creek Subbasins (CVWD 2012; CVWD et al. 2013; CVWD 2016a). The 2013 MS4 permit requires builders of new developments to include stormwater capture and recharge infrastructure (Regional Board 2013). Water agencies will need to coordinate with the local cities and the County of Riverside to maximize use of stormwater capture and recharge infrastructure related to development, because management of development requirements is not under the purview of the water agencies (CVWD et al. 2013). While the 2013 MS4 permit requirement solidifies this strategy for runoff management, stormwater capture and beneficial use is a long-standing strategy in the Coachella Valley, where MS4 permittees have required stormwater onsite retention (detention and infiltration) through municipal ordinances years before the 2013 MS4 permit.” |
| 32 | 9/21/2018 | Sara Toyoda - City of Indio | 2.8.1 Legislative and Policy Context | 2-80 | In the current MS4 permit negotiations climate change is addressed through stormwater retention in order to reduce flooding associated with sudden intense storms and to increase groundwater supply to mitigate against longer more frequent droughts. | The report will be modified to reflect this with the last sentence on the page changed to: "Central to these adaptation efforts will be the full implementation of IRWM/SWR Plans, MS4 permits, and municipal ordinances, which address regionally-appropriate management practices that incorporate climate change adaptation. The plans will evaluate and provide a comprehensive, economical, and sustainable water use strategy at the watershed level for California. |
| 33 | 9/21/2018 | Sara Toyoda - City of Indio | 3.1.5 Water Quality | 3-23 | I don't think stormwater is a concern for wells they are improperly constructed. I see that the statement in the current text is referenced but I don't think properly built wells would be contaminated from stormwater. | Report has been modified to read: "Contamination of drinking water wells from agricultural and urban stormwater runoff is a concern for improperly constructed or sealed wells in the Coachella Valley IRWM Region (CVWD 2012)." |

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| # | Date Received | Commenter | Plan Section | Page Number | Comment | Response |
|---|---|---|---|---|---|---|
| 34 | 9/21/2018 | Sara Toyoda - City of Indio | 3.1.4 Stormwater | | First paragraph references consistent flow in the CVSC east of Washington Street. I don't think this is correct. I think the only consistent flow is after Valley Sanitary District near Dillon Road. | The backbone of this system is the Region's 49-mile Whitewater River Stormwater Channel/Coachella Valley Stormwater Channel (WRSC/CVSC). West of Washington Street, the channel is referred to as the WRSC; east of Washington Street, the channel is referred to as the CVSC. The WRSC follows the natural Whitewater River, and flows in the WRSC are ephemeral, while the CVSC is the channelized portion of the Whitewater River, and generally contains flow year-round east of Dillon Road from agricultural drains, permitted discharges, and stormwater runoff from occasional storm flows. |
| 35 | 9/21/2018 | Sara Toyoda - City of Indio | 8.4.3 Increase Water Supply | 8-17 | Include information about the NPDES efforts for stormwater retention and infiltration | As part of the Whitewater Watershed Protection Program, many efforts to capture and infiltrate stormwater are being implemented including the water quality management plan which includes infiltration as one of its BMP's. The Whitewater BMP Design Handbook for Low Impact Development includes infiltration basins and trenches which can be used as a tool for stormwater quality management. |
| 36 | 9/21/2018 | Sara Toyoda - City of Indio | 8.4.4 Improve Water Quality | 8-28 | Under the picture please remove "City of Indio Pollution Prevention materials identify over-irrigation as a violation of the NPDES permit" Not sure what the materials say but irrigation run-off is not a violation of the permit. | The caption will be changed to read "over-irrigating landscape can result in dry-weather urban runoff that may result in pollutant transport" |
| 37 | 9/21/2018 | Sara Toyoda - City of Indio | 8.4.4 Improve Water Quality | 8-31 | This should include the inspections done by the MS4 Permitees. The SWMP includes provisions to inspect certain commercial/industrial facilities for outreach and to reduce the possibility of any illegal discharges. The detection and elimination of illicit discharges also requires field screening during maintenance and upkeep of the MS4 systems. | The report will include an additional bullet category for "Inspections by MS4 permitees: The Storm Water Management Plan includes provisions to inspect some commercial and industrial facilities. Inspection includes outreach and verifications to prevent and reduce the possibility of illegal discharges. Field screening during maintenance and upkeep of the MS4 systems for the detection and elimination of illicit discharges is also required." |
| 38 | 9/21/2018 | Sara Toyoda - City of Indio | 8.4.5 Improve Flood Management | 8-33 | Should include the retention and infiltration efforts required by ordinances for stormwater. | Under the title "Coachella Valley Efforts" and before the specific bullets, the document will add "Listed below are specific programs, projects, and facilities with flood risk management primary components. In addition to these elements below, stormwater retention and infiltration efforts are present in the Region in stormwater ordinances and as part of the NPDES". |
| 39 | 9/21/2018 | Sara Toyoda - City of Indio | 8.4.6 Practice Resources Stewardship | 8-39 | The Construction General Permit that covers most construction sites in the Valley does not allow pollution including sediment to leave the site and certainly not into receiving waters. | Under the title "Coachella Valley Efforts" on page 8-39 we will include a bullet: Sediment Management at Site Level: Construction Permits in the Region include specific sediment management requirements to avoid sediment from construction activities from reaching receiving waters" |
| 40 | 9/21/2018 | Sara Toyoda - City of Indio | 8.4.7 People & Water | 8-41 | The NPDES public outreach program should be included https://www.rcwatershed.org. Also the individual permitees also support the RC watershed outreach and supplement with their own outreach. | We will include an additional bullet with under Outreach and Engagement: "NPDES Public Outreach Program and Website": the Riverside County Watershed Protection website includes outreach and practical content educating residents, businesses, schools and everyone in the watershed. The site includes news, resources, and clear and specific actions residents, businesses and schools can take to actively contribute to watershed protection." |
| 41 | 9/21/2018 | Sara Toyoda - City of Indio | 8.5 Adapting Resource Management Strategies to Climate Change | 8-49 | Does Conjunctive Management and Groundwater Storage include recharge from retention basins. If not, please add Retention Basin Recharge separately. | Yes, it does. We will make it explicit adding "Including Stormwater Retention Basins" in parenthesis |
| 42 | 9/21/2018 | Sara Toyoda - City of Indio | 8.5 Adapting Resource Management Strategies to Climate Change | 8-50 | Add Stormwater Retention | We will add a footnote to the table to indicate that "stormwater retention is included in Urban Runoff Management, Flood Management, and Integrated Flood Management" |
| 43 | 9/21/2018 | Sara Toyoda - City of Indio | 11.1.1 Overview of Benefits | 11-6 | I think an addition to the bulleted included projects should be<br>-New or upgraded MS4 systems that include retention and infiltration | We will include that as an additional bullet |

## Comments Received on the Draft 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan

| # | Date Received | Commenter | Plan Section | Page Number | Comment | Response |
|---|---|---|---|---|---|---|
| 44 | 9/21/2018 | Sara Toyoda - City of Indio | 11.3.1 Overview of Data Needs | 11-29 | Due to the arid nature of the Valley, many would be MS4 sampling sites are often dry and cannot be consistently sampled. | We will add a final sentence stating: an important consideration in data collection is the hydrology and precipitation patterns and seasonality in the Region, where many sampling sites cannot generate year-round data as they are often dry. " |
| 45 | 9/28/2018 | Cathy Sanford - Colorado River Basin Regional Board | 2.5.1 Groundwater Quality | 2-58 (Table 2-19) | Table 2-19 lists the quality of water sources and states the secondary maximum contaminant levels (S-MCLs) for total dissolved solids (TDS) as 1,000 and 1,500 milligrams per liter (mg/L). Table 2-19 is incomplete and misleading because it does not include the 'recommended' consumer acceptance level of 500 mg/L TDS cited in CCR, Title 22, Table 64449-B (Consumer Acceptance Contaminant Level Ranges). Table 64449-B cites three ranges of consumer acceptability for TDS contaminant levels; a recommended limit of 500 mg/L; an upper limit of 1,000 mg/L; and a short-term limit of 1,500 mg/L. Providing water for municipal use with a recommended TDS of 500 mg/L or less is desirable for a higher degree of consumer acceptance. Water with 1,000 mg/L TDS is acceptable only if it is neither reasonable nor feasible to provide more suitable waters, and a level of 1,500 mg/L TDS is acceptable only for existing community water systems on a temporary basis. | Table 2-19 will be modified to indicate that the "Consumer Acceptance Contaminant Level Ranges" are 500-1,500 mg/L for TDS. The footnote will be modified to indicate that the Consumer Acceptance Contaminant Level of 500 mg/L is the recommended value desirable for the highest consumer acceptance; 1,000 mg/L is the upper limit of the consumer acceptance level; and 1,500 mg/L is the short-term consumer acceptance level. |
| 46 | 9/28/2018 | Cathy Sanford - Colorado River Basin Regional Board | 3.1.5 Water Quality | 3-18 | [TDS concentrations in the groundwater basin need to be managed properly to prevent long-term degradation of groundwater quality in the basin. Potential options to manage TDS concentrations may have high costs; however, in accordance with the Recycled Water Policy, the agencies are currently developing a Salt and Nutrient Management Plan to address this constituent throughout the Region (CVWD 2012; CVWD et al. 2013).]<br><br>Staff concur that TDS levels in groundwater need to be managed properly, and an adequate SNMP will facilitate this. During generation of the Coachella Valley SNMP, Regional Water Board staff communicated several technical concerns, in particular:<br>a. determination of ambient groundwater quality,<br>b. assigning a water quality objective for TDS that was not protective of existing water quality, and<br>c. lack of adequate monitoring or implementation measures to manage all salt loading in the basin on a sustainable basis.<br>The June 2015 SNMP does not adequately address these concerns, and we advised the Regional Water Board not to approve or accept the SNMP until staff's technical concerns were satisfactorily addressed.<br>The Coachella Valley SNMP is incomplete and does not fully comply with the Recycled Water Policy (Resolution 2013-0003). Regional Water Board staff encourages recovering the SNMP Issues Group to address the inadequacies of the SNMP as development of an adequate SNMP for the Coachella Valley will supplement the IRWM/SWR Plan as stated, and will address many of staff's concerns regarding protection of water quality in the Coachella Valley Groundwater Basin. | The Coachella Valley Salt and Nutrient Management Plan (CVSNMP) was completed in exact accordance with the State's Recycled Water Policy via a comprehensive stakeholder process that included six stakeholder meetings and three comment periods. Many positive changes to the plan were made as a direct result of stakeholder input including RWQCB staff input. Fourteen meetings were held with RWQCB staff to encourage input and address concerns. We presented the final CVSNMP to the Boards of the Coachella Valley Water District (CVWD), Desert Water Agency (DWA) and Indio Water Authority (IWA) and each board adopted the final plan.<br><br>The CVSNMP accurately characterizes the water quality of the Coachella Valley Groundwater Basin, includes all the required elements applicable to local existing and planned recycled water use projects, and identifies Management Strategies and recommends a Monitoring Plan that protects groundwater beneficial uses and supports future recycled water use needed to provide a sustainable groundwater supply for the Coachella Valley.<br><br>The text will be modified to read:<br>"TDS concentrations in the groundwater basin need to be managed properly to prevent long-term degradation of groundwater quality in the basin. Potential options to manage TDS concentrations may have high costs; however, in accordance with the Recycled Water Policy, the agencies submitted a Salt and Nutrient Management Plan to the RWQCB to address this constituent throughout the Coachella Valley (MWH 2015). |
| 47 | 9/28/2018 | Cathy Sanford - Colorado River Basin Regional Board | 8.4.4 Improve Water Quality | 8-30 | [The SNMP was completed in June 2015, provides guidance for basin-wide management of salts and nutrients, and …]<br><br>The Coachella Valley SNMP cannot provide guidance for basin-wide management of salts and nutrients as it does not propose sufficient verification monitoring or implementation measures to adequately quantify or manage salt and nutrient loading in the Coachella Valley Groundwater Basin from all identified sources, on a long-term, sustainable basis.<br>Imported water from the Colorado River has introduced nearly a ton of salts (TDS) per acre foot of recharge volume into the groundwater basin, however omitted from the SNMP and from this IRWM/SWR Plan are measures to manage long-term salt loading from this significant sources of salt to the Coachella Valley. | The Coachella Valley Salt and Nutrient Management Plan (CVSNMP), completed in exact accordance with the State's Recycled Water Policy, identifies Management Strategies and recommends a Monitoring Plan that protects groundwater beneficial uses and supports future recycled water use needed to provide a sustainable groundwater supply for the Coachella Valley. The agencies are implementing this monitoring plan.<br><br>The document will be updated to read: "The SNMP was completed in June 2015, and the implementing agencies are currently in the process of addressing comments from the Regional Water Quality Control Board for a plan that will provide guidance for basin-wide management of salts and nutrients." |

## Comments Received on the Draft 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan

| # | Date Received | Commenter | Plan Section | Page Number | Comment | Response |
|---|---|---|---|---|---|---|
| 48 | 9/28/2018 | Cathy Sanford - Colorado River Basin Regional Board | 10.2.5 Technical Evaluations for the IRWM/SWR Plan | 10-30 | [SNMP actions and efforts are included in the Alternative Groundwater Sustainability Plans (GSPs) as part of the Sustainable Groundwater Management Act (SGMA) context and compliance.]<br><br>As the Coachella Valley SNMP is neither approved nor complete, it does not qualify as a supplemental document and may not be considered as context for or in compliance with SGMA, as stated in the IRWM/SWR Plan. | The Coachella Valley Salt and Nutrient Management Plan (CVSNMP), completed in exact accordance with the State's Recycled Water Policy, identifies Management Strategies and recommends a Monitoring Plan that protects groundwater beneficial uses and supports future recycled water use needed to provide a sustainable groundwater supply for the Coachella Valley. The agencies are implementing this monitoring plan. As such, it is critically important that it be included and considered in any basin planning, such as the SGMA Alternative GSPs.<br><br>The report will be modified as follows: "When completed and approved, the SNMP actions and efforts will supplement the Alternative GSPs as part of the SGMA context and compliance. |
| 49 | | CVWD | 2.2.6 Agricultural Water | 2-29 | In Desalinated Water section, second paragraph, first sentece, please remove "by 2025".<br><br>Please change the fourth sentence to "In addition, it was determined that semi-perched brackish groundwater will be utilized instead of agricultural drain water for desalination. The 2010 Coachella Valley WMP Update indicates that the amount of water recovered through water desalination will range from 55,000 to 85,000 AFY." | In Desalinated Water section, second paragraph, first sentece, "by 2025" was removed.<br><br>The fourth sentence was changed to "In addition, it was determined that semi-perched brackish groundwater will be utilized instead of agricultural drain water for desalination. The 2010 Coachella Valley WMP Update indicates that the amount of water recovered through water desalination will range from 55,000 to 85,000 AFY." |
| 50 | | CVWD | 2.4.2 Water Demand | 2-51 | In the first paragraph, fifth sentence change "desalination of local agricultural drain water" to "desalination of local semi-perched brackish groundwater". | In the first paragraph, fifth sentence has been changed from "desalination of local agricultural drain water" to "desalination of local semi-perched brackish groundwater". |
| 51 | | CVWD | 6.1.1 Determining Objectives | 6-6 | In Objective D, change "desalination of agricultural drain water" to "desalination of semi-perched brackish groundwater". | In Objective D, change "desalination of agricultural drain water" to "desalination of semi-perched brackish groundwater". |
| 52 | | CVWD | Table 6-2 | 6-16 | Remove "drain water" and "agricultural drain water" from the table. Just talk about Water Desalination capacity. | Comment incorporated and reflected in the report. |
| 53 | | CVWD | 8.4.3 Increase Water Supply (Desalination) | 8-19 | For the section CVWD Agricultural Drain Water Desalination Project, please change to "CVWD Desalination Project. The Coachella Valley is evaluating the development of up to 85,000 AFY of semi-perched brackish groundwater". | For the section CVWD Agricultural Drain Water Desalination Project, please change to "CVWD Desalination Project. The Coachella Valley is evaluating the development of up to 85,000 AFY of semi-perched brackish groundwater". |
| 54 | | CVWD | 8.4.4 Improve Water Quality | 8-28 | For the section CVWD Agricultural Drain Water Desalination Project, please change to "CVWD Desalination Project. As summarized in the Desalination section above, this project is currently being evaluated by the CVWD, and one of its main purposes is to treat and reuse semi-perched brackish groundwater at a quality appropriate for agricultural irrigation". | For the section CVWD Agricultural Drain Water Desalination Project, please change to "CVWD Desalination Project. As summarized in the Desalination section above, this project is currently being evaluated by the CVWD, and one of its main purposes is to treat and reuse semi-perched brackish groundwater at a quality appropriate for agricultural irrigation". |
| 55 | | CVWD | 10.2.2 Non-Potable Water Supplies | 10-24 | In the first paragaph, first sentence, change to "The 2010 Coachella Valley WMP recommends that a water desalination program be developed, and states that the amount of water recovered through water desalination will potentially range from 55,000 to 85,000 AFY. Water would be taken for desalination from the semi-perched brackish groundwater and would be delivered to the Coachella Canal distribution system for non-potable use.<br><br>Please delete the sentence "Based on non-potable demand projections as preseneted in CVWD's 2015 UWMP, the initial phase of the this program will need to be implemented by 2025 to supplement Canal water supply." | In the first paragaph, first sentence, change to "The 2010 Coachella Valley WMP recommends that a water desalination program be developed, and states that the amount of water recovered through water desalination will potentially range from 55,000 to 85,000 AFY. Water would be taken for desalination from the semi-perched brackish groundwater and would be delivered to the Coachella Canal distribution system for non-potable use.<br><br>Please delete the sentence "Based on non-potable demand projections as preseneted in CVWD's 2015 UWMP, the initial phase of the this program will need to be implemented by 2025 to supplement Canal water supply." |

# Appendix VI-G: Work Plan for the Coachella Valley Groundwater Basin's Salt and Nutrient Management Planning Strategy

This appendix includes the final Work Plan developed for the Salt and Nutrient Management Planning Strategy technical study conducted as part of the 2014 Coachella Valley IRWM Plan update process.

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# Work Plan for the Coachella Valley Groundwater Basin's Salt & Nutrient Management Plan

## BACKGROUND

The State of California adopted the Recycled Water Policy (Policy) that requires Salt and Nutrient Management Plans (SNMPs) be developed to manage salts, nutrients, and other significant chemical compounds on a watershed- or basin-wide basis. The Policy specifies that SNMPs be developed in a cooperative and collaborative manner among water and wastewater agencies and other salt/nutrient stakeholders. The SNMPs are intended to help streamline permitting of new recycled water projects while ensuring compliance with water quality objectives and protection of beneficial uses. For each groundwater basin, a SNMP is to be provided to the Regional Water Quality Control Board (RWQCB) no later than May 2014. An extension of up to 2 years may be granted by the RWQCB if the region demonstrates substantial progress by the May 2014 deadline.

In 2011, the Coachella Valley Regional Water Management Group (CVRWMG) began preliminary discussions about preparing a SNMP for the Coachella Valley. In order to either meet the May 2014 deadline or show substantial progress in developing its SNMP, the CVRWMG is working toward consensus on a SNMP strategy and scope of work by early 2013.

The CVRWMG application for Planning Grant Funding included budget for initial scoping of the salt and nutrient planning to augment the Integrated Regional Watershed Management (IRWM) plan for the Coachella Valley. The grant was awarded, and the consulting team of RMC Water and Environment and Integrated Planning and Management, Inc. were contracted to initiate the scoping.

To date, three public workshops have been held on August 22, 2012, September 26, 2012, and November 28, 2012 with good interaction between stakeholders interested in the SNMP. Based on the direction from the CVRWMG, interests, comments and concerns of the stakeholders, and input from the Colorado River Regional Water Quality Control Board (RWQCB), the consulting team has prepared this Work Plan for preparation of the Coachella Valley Groundwater Basin Salt and Nutrient Management Plan. Included in this Work Plan is the list of roles and responsibilities for the entities that will be involved in the development of the SNMP, the scope of work, and a schedule for work plan implementation.

# ROLES AND RESPONSIBILITIES

The following defines the team structure and roles and responsibilities for completing the SNMP.

## Acronyms, Groups, and Roles

**CVRWMG (Coachella Valley Regional Water Management Group)**

Members: Coachella Valley Water District, Coachella Water Authority, Desert Water Agency, Indio Water Authority, and Mission Springs Water District

Roles: Responsible for maintaining the Stakeholder List and identifying members that need to be included. Responsible for establishing and overseeing the Technical Working Group. Will review work product, provide data, manage the Technical Working Group, manage Stakeholders, make or seek agreement on policy decisions and direction and ensure integration of the SNMP into the Coachella Valley Integrated Regional Water Management Plan (IRWMP).

**Technical Team**

Members: Technical experts to be determined for each task including, but not limited to, agencies, their consultants, RWQCB and other key regulatory personnel, and other organizations as deemed appropriate by the CVRWMG.

Roles: Perform technical work related to SNMP development, from collecting data to final analysis and documentation of the SNMP. This technical work may be conducted by CVRWMG agency staff, a consultant or other combination that is acceptable to the stakeholders and approved by the CVRWMG. When decided, the final roles of the Technical Team members will require further clarification as to who is performing the work and who will be reviewing and approving the work products.

**Stakeholders**

Members: Open to all public agencies, including the RWQCB, other regulators, Tribes, environmental organizations, and other interested members of the community. Note: The current stakeholder list is shown in work plan section.

Roles: Provide public input and review major milestone tasks.

# DRAFT WORK PLAN

As part of the development of the Coachella Valley Basin SNMP Work Plan, the current CVRWMG and Stakeholders explored several of the issues that are likely to be addressed as part of the SNMP process. One of the challenges identified for this SNMP was the number of issues and size/scale of the SNMP, especially given the current Basin Plan's lack of sub-basin distinction. Therefore, the SNMP process is being developed using a phased approach that it will allow it to be completed over time in an incremental manner. The following defines the three plan development phases:

- **Phase 1: Initial SNMP Scoping and SNMP Work Plan Development**
  - Invite Stakeholders group for scoping early in the process
  - Develop the process, scope, and schedule for SNMP development (i.e. this Work Plan)
- **Phase 2: Initial SNMP development**
  - Characterize the groundwater basin(s), including estimating the assimilative capacity of the basin(s)
  - Identify salt / nutrient loadings and trends
  - Identify any supplemental monitoring needs
  - Identify water management goals and potential strategies, including any potential basin plan amendments recommendations
  - Conduct anti-degradation process
  - Finalize Phase 2 SNMP, including:
    - Develop initial implementation and monitoring plans
    - Develop initial SNMP data management, reporting, and audit processes
    - Determine CEQA/NEPA compliance needs
    - Documentation of SNMP
- **Phase 3: Finalize SNMP**
  - Conduct any necessary supplemental monitoring
  - Update salt / nutrient loading and trends (as necessary)
  - Update water management goals and strategies (as necessary)
  - Support processing of any recommended Basin Plan Amendments with the RWQCB
  - Update anti-degradation process (as necessary)
  - Finalize Phase 3 SNMP, including:
    - Update the implementation and monitoring plans
    - Update the SNMP data management, reporting, and audit process
    - Develop environmental documentation for any proposed Basin Plan Amendments
    - Documentation of SNMP

The following Work Plan describes the tasks necessary to prepare a Salt/Nutrient Management Plan (SNMP) for the Coachella Valley Groundwater Basin. Detailed tasks are shown for Phase 2, and an outline of some possible tasks necessary for Phase 3 are included.

# Phase 2 Work Plan

## Task 1. Establish Collaborative Process

The primary purpose of this task is to assist the CVRWMG in refining the stakeholder process established during the Scoping and Work Plan Development (Phase 1) to ensure that the process meets State Policy requirements and represents the community. This will occur by continuing to engage stakeholders in the SNMP development process, establishing plan goals and objectives, gathering input on technical analysis tasks, and collaboratively developing implementation and basin management measures. The CVRWMG will direct or lead the collaborative process.

### Subtask 1.1 Develop Working Groups

Active participants in the SNMP process are assumed to fall into one of two groups intended to help guide and gain input for the SNMP.

1) **Stakeholders.** This group will consist of those whose activities and operations may impact salt and nutrient management in the Basin, including agricultural interests, private well owners, environmental groups, regulatory staff, and the general public. The current stakeholder list developed by the CVRWMG as part of the IRWMP and SNMP Work Plan development process will be used as the initial list of stakeholders (see current list of Stakeholder in table below). Additional stakeholders will be solicited by the CVRWMG prior to initiation of the SNMP and throughout the SNMP development process. This can be done as part of the IRWMP public workshops or separately. The CVRWMG shall maintain the stakeholder list and coordinate all workshop notifications and deliverable distributions with stakeholders.
2) **Technical Team.** This group consists of those who contribute technical information, conduct the technical analyses, develop the SNMP, and provide initial technical reviews prior to the CVRWMG reviews and Stakeholder meetings. The CVRWMG shall establish the Technical Team members, oversee their work, and coordinate their activities. This group is proposed to consist of the staff and designated technical consultants from local water and wastewater agencies and municipalities and staff from the Colorado River Basin (Region 7) Regional Water Quality Control Board. The CVRWMG will identify any other key members that should be included in the Technical Team. This technical work may be conducted by CVRWMG agency staff, a consultant(s), or other combination that is acceptable to the stakeholders and approved by the CVRWMG. When decided, the final roles of the Technical Team members will require further clarification as to who is performing the work and who is reviewing and approving the work products.

| Current Salt/Nutrient Management Planning Workgroup | |
|---|---|
| **Affiliation** | **Contact** |
| CVRWMG - Coachella Valley Water District | Patti Reyes |
| CVRWMG - Coachella Water Authority/Sanitation District | Berlinda Blackburn |
| CVRWMG - Desert Water Agency | Mark Krause |
| CVRWMG - Indio Water Authority | Brian Macy |
| CVRWMG - Mission Springs Water District | John Soulliere |
| 29 Palms Tribe | Marshall Cheung |
| Agricultural Sector | Peter Nelson |
| Agua Caliente Tribe | Margaret Park |
| Augustine Tribe | Les Ramirez |
| Cabazon Tribe | Becky Ross |
| Cabazon Tribe | Jacquelyn Gonzales |
| Cabazon Tribe | Paul Slama |
| City of Palm Springs | David Barakian |
| Coachella Valley Water District | Olivia Bennet |
| Coachella Valley Water District | Steve Bigley |
| Coachella Water Authority / Sanitation District | Jerry Jimenez |
| Coachella Water Authority / Sanitation District | Kirk Cloyd |
| Desert Water Agency | Mark Krause |
| Friends of the Desert Mountains | Buford Crites |
| Hi-Lo Desert Golf Course Superintendent's Association | Stu Rowland |
| Indio Water Authority | Sara Toyoda |
| Mission Springs Water District | Brent Gray |
| Mission Springs Water District | Mike Thornton |
| Myoma Dunes Mutual Water Company | Mark Meeler |
| Regional Water Quality Control Board | Abdi Haile |
| Regional Water Quality Control Board | Jon Rokke |
| Riverside County Executive Office | Mike Shetler |
| Riverside County Flood Control and Water Conservation District | Jason Uhley |
| Riverside County Flood Control and Water Conservation District | Scott Bruckner |
| Salton Community Services District | Jerry Santillan |
| San Gorgonio Pass Water Agency | Jeff Davis |
| Torres-Martinez Tribe | Debi Livesay |
| Valley Sanitary District | Joe Glowitz |

## Subtask 1.2 Conduct Technical Review Meetings

In addition to conducting the technical work, the Technical Team shall conduct six (6) Technical Review Meetings. Members of the CVRWMG shall also attend these Technical Review Meetings. The purpose of the meetings will be to discuss data collection efforts, review work in progress, review/discuss comments on work products, coordinate, prepare and follow-up from Stakeholder

meetings, and to solicit input/direction from the CVRWMG. The Technical Team shall prepare all meeting notices, agendas, and meeting summaries. Technical Review Meetings are planned at the following project milestones:

- Project kick-off and data collection
- Groundwater characterization review
- Salt/Nutrient loading assessment review
- Establish goals and identify management strategies for the SNMP
- Review anti-degradation process and assess management strategies
- Develop implementation and monitoring plans

### Subtask 1.3 Conduct Technical Review Conference Calls

The Technical Team shall conduct additional conference calls with all or sub-members of the Technical Team, as necessary, to discuss technical issues, preliminary analyses, etc. Any key decisions or major question should be brought up to the entire Technical Team or the CVRWMG as necessary.

### Subtask 1.4 Conduct SNMP Stakeholder Workshops

The Technical Team shall conduct five (5) stakeholder workshops for the purpose of presenting information, gathering input from stakeholders, and providing a forum for discussion of salt/nutrient issues. The Technical Team will prepare agendas, workshop notifications, sign-in lists, presentations, and summaries, and guide stakeholder discussion and technical presentations. The CVRWMG will review presentations prior to the workshops and provide comments to the Technical Team no later than three days prior to a workshop date. CVRWMG shall also assist with workshop location coordination. The Technical Team will distribute workshop notifications and materials prior to each workshop, and shall provide the following in support during each workshop:

**Workshop 1 – Review Basin Characterization.** At end of **Task 2**, the Technical Team will prepare for and present an overview of the State Policy on SNMPs and key elements in developing the SNMP, the SNMP development process, elements/sections of the SNMP, salt/nutrient constituents that will be assessed, and an overview of current understanding of the groundwater basin and potential salt/nutrient sources in the Basin.

**Workshop 2 – Review Salt / Nutrient Loading and Trends.** Following **Task 3,** the results of salt/nutrient loading analysis and assimilative capacity analysis will be presented by the Technical Team.

**Workshop 3 – Input on SNMP Goals and Management Strategies.** During **Task 4**, the Technical Team will present a summary of the goals established for the SNMP and the potential salinity/nutrient management strategies to be analyzed, along with the process for analyzing these strategies. Stakeholder input shall be considered by the Technical Team and CVRWMG.

**Workshop 4 – Review Anti-Degradation Process and Management Strategies**, Following **Task 5**, the Technical Team will present a summary of the evaluation of preferred management strategies and the results of the anti-degradation process.

**Workshop 5 – Review Draft SNMP**, During **Task 6,** the Technical Team will present the Draft SNMP to the stakeholders after the CVRWMG has reviewed and commented on the Draft Plan. This workshop will be a forum to discuss and respond to stakeholder comments on the Draft Plan. The Technical Team shall present the collaborative process used in development of the Draft Plan and the SNMP's key components.

***Task 1 Deliverables:***

- Technical Team and Stakeholder Working Group Lists
- Six (6) Technical Review Meetings
- Technical Team Conference calls, as necessary
- Five (5) SNMP Stakeholder Workshops
- For each Technical Team Review Meeting, Technical Team conference call, and Stakeholder workshop: announcements, agendas, meeting/conference call materials, including presentations and handouts, and summary notes

## Task 2. Conduct Basin Characterization

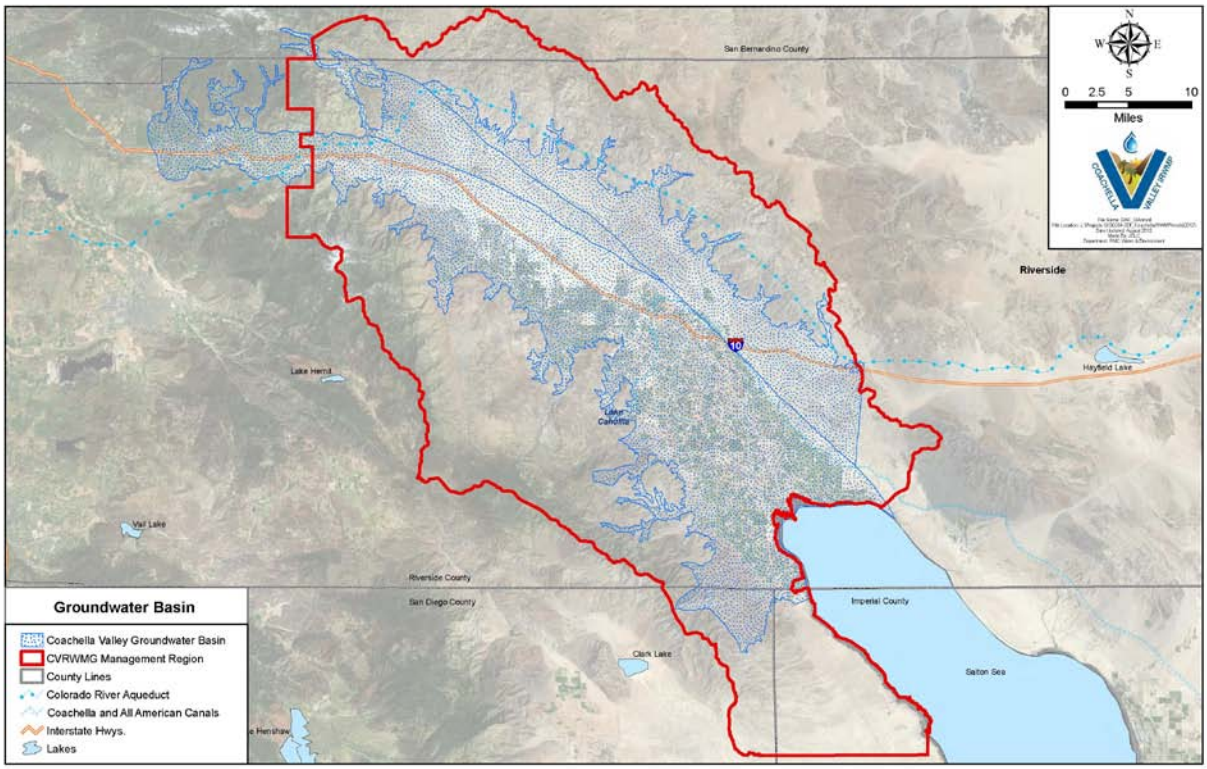
This task will involve identifying and characterizing the groundwater basin being assessed and delineating the study area.

### Subtask 2.1 Identify the Groundwater Basins Being Evaluated

The Technical Team will conduct work to define the groundwater basin and potential sub-basins or management areas, and identify the upstream tributary area that may contribute source loads to the basin. The study area will include all or portions of the San Gorgonio Pass, Whitewater (Indio), Garnet Hill, Murrieta, Mission Creek, and Desert Hot Springs groundwater sub-basins. Figure 1 shows the current project study area.

Any tributary lands that are suspected or known to influence groundwater flow or quality in the groundwater basin will be included. A determination of basis for the selected study area will be documented, and a Geographic Information Systems (GIS)-based map depicting the areal extent of the groundwater basin and proposed management areas, the proposed study area, and the tributary watershed will be prepared. This map will be posted on the CVRWMG website for public viewing.

**Figure 1: Coachella Valley Salt and Nutrient Management Plan Study Area**




## Subtask 2.2 Identify, Collect, and Review Existing Groundwater Studies and Data

The Technical Team shall identify and review prior groundwater management studies, hydrogeologic assessments, or evaluations that have assessed issues relevant to salinity and nutrient planning and/or groundwater basin management within the study area. This work will include region-wide, local and basin-specific studies, as applicable and available. Information to be collected will include, but is not limited to:

- Areas of groundwater recharge (including direct and/or indirect groundwater discharges into the Salton Sea)
- Estimation of groundwater storage capacity (and other studies related to a basin-wide water balance)
- Public, private, and agricultural supplies, usage, and water quality information
- Location of recycled water irrigation/application
- Recycled water quality
- Storm water runoff quality and permitted outfalls
- Projected future water demands (including recycled water)
- Projected future wastewater and recycled water production

- Location and quantity/quality of brined disposal
- Land use plans from CVAG

Technical data or assessments on which groundwater management studies were based will also be used. Appropriate agencies, groups, and co-permittees will be contacted to assist with identifying and obtaining these studies.

## Subtask 2.3 Document Beneficial Uses

The Technical Team shall perform a preliminary analysis to identify and quantify existing and likely potential future uses of groundwater in the basin. This work will include identifying and characterizing existing and planned municipal supply wells or projects and quantified pumping in the Basin, identifying and characterizing private groundwater wells and users in the Basin, quantifying or estimating the irrigation pumping from private wells, identifying areas where groundwater-dependent habitat is known to exist, quantifying the amount of groundwater uptake required by the habitat, and identifying the actual listed Beneficial Use(s) within the basin and sub-basin areas from the Basin Plan. Existing documentation, where available, will be used, including water agency records, well surveys and well records, County of Riverside permit records, and other relevant data. GIS-based mapping will be used to identify the locations of municipal and private wells.

Work conducted under this task would provide preliminary indication of uses that may need to be protected. Should differences between current existing or potential future use and Basin Plan Beneficial Uses be identified, significant additional work and study, potentially up to a Use Attainability Analysis, would be required to modify the beneficial uses. Such a change requires an amendment to the current Basin Plan and is not included in this scope of work.

## Subtask 2.4 Characterize Groundwater Quality and Occurrences

The Technical Team shall characterize existing and historic groundwater quantities and qualities within the Basin through review of existing studies and contact with agencies or groups engaged in ongoing data collection. The Technical Team will also identify and obtain additional data, as available, to fill identified data gaps. Work may include collecting, aggregating, and analyzing historic and current water quality data for the beneficial uses and objectives review, and for purposes of completing the salt/nutrient loading analysis and anti-degradation process. Geographic and depth-dependent distribution of concentrations will be assessed for the salinity and nutrient parameters of interest (determined in **Subtask 2.5**, below). GIS-based maps will be developed depicting groundwater quality, concentration contours, depth-to-water, groundwater flow directions, and key hydrogeologic features that may affect constituent transport. All data will be accumulated into GIS- and/or Excel-based database for subsequent analyses. GIS-based mapping will be posted on the CVRWMG website for public viewing.

## Subtask 2.5 Identify Salinity, Nutrient, and Constituents of Concern

The Technical Team shall identify recommended salinity and nutrient parameters to be addressed within the SNMP. The focus of this subtask shall be to identify constituents of concern relative to attainment of groundwater basin objectives and water quality standards as related to beneficial use for the groundwater basin. The recommended list of constituents of concern will be developed on the basis of prior groundwater studies, collected groundwater quality information, consultation

with Regional Board staff, and discussions with study partners and stakeholders.

Anticipated constituents to be considered include total dissolved solids (TDS) and/or Specific Electrical Conductance or Electrical Conductivity (EC), and may include one or more individual ions such as chlorine, sulfates, or sodium if such constituents are determined to be of concern; nitrate-nitrogen; and potentially iron and/or manganese. During Stakeholder Workshop 1, the relevance of the aforementioned constituents and other potential constituents shall be discussed, and input regarding other potential constituents will be received.

As noted, the CVRWMG is encouraged to coordinate with its technical team to maximize use of prior studies that have assessed groundwater hydrogeology, groundwater quality, and beneficial uses within the Coachella Valley groundwater basin.

### Subtask 2.6 Establish Baseline Conditions

Using the data collected and evaluated in the prior subtasks, a baseline period will be selected and baseline groundwater conditions identified using available data for that period. This baseline period will be utilized in subsequent tasks to establish basin assimilative capacity.

***Task 2 Deliverables:***

- Basin Study Area Map
- List of existing groundwater studies and hydrogeologic assessments in the Basin
- Well Listings in the Basin
- Well Location Map in the Basin
- Quantification of historical pumping (public and private wells), groundwater recharge, septic systems, recycled water usage, discharges, and runoff in the Basin
- Estimation of groundwater storage capacity (based on available data)
- An identification (list) of any groundwater-dependent habitat
- Groundwater Quality and Basin Characteristics GIS layers and Map
- Summary of preliminary existing and potential future Beneficial Uses within the Basins
- Baseline groundwater conditions
- List of Salinity and Nutrient Parameters and other Constituents of Concern to the SNMP
- Technical Memorandum (TM) summarizing the above
- Stakeholder Workshop 1 - Basin Characterization

## Task 3. Identify Salt / Nutrient Loading and Trends

This task will involve identifying, and the preliminary quantification of, salt and nutrient sources to the groundwater basin for the identified constituents of concern.

### Subtask 3.1 Identify Salinity and Nutrient Sources

The Technical Team shall identify land use characteristics, known point sources and non-point sources of salts and nutrients, and their locations. Water sources and their places of use shall be identified based on information gathered with input from appropriate water suppliers, irrigators, and stakeholders. The type or source of water used for outdoor irrigation for each parcel shall be defined using available information. Data collected under this task will be accumulated into GIS

and/or Excel databases for subsequent analyses. During the first Technical Team Review Meeting, and subsequently in Stakeholder Workshop 1, the Technical Team shall seek input regarding significant land cover changes that might have taken place since the date of available data to more accurately reflect current land cover data.

## Subtask 3.2 Quantify Salinity and Nutrient Source Loads

The Technical Team shall use existing available data to quantify salinity and nutrient sources in terms of volume, concentration, and/or mass loads using data and information collected in previous tasks, along with other salinity and nutrient source loading information, to conduct a loading analysis. The Technical Team shall prepare a preliminary water budget and mass load estimate for the study area, as well as for individual groundwater sub-basins or management areas.

The Technical Team shall conduct the initial source loading analysis using a GIS-based tool to input all data into a GIS format and to perform initial water budget and mass loading analyses. The GIS-based tool shall be used to conduct analyses of historical, existing, and projected future basin conditions and to identify any water quality trends. Salt and nutrient loads to each sub-basin or management area will be identified, as will the salinity and nutrient load sources that appear to be most important in influencing historical and projected groundwater quality trends.

The mass balance model will assume instantaneous mixing of waters within the groundwater basin and will be developed to analyze sub-basins or management areas that may have specific water quality or salt/nutrient source loadings that differ significantly from the rest of the basin.

Where data history on sources, water balance, and conditions is adequate for use in projecting future conditions, the Technical Team will perform an assessment of historic and projected future trends of salinity and nutrient concentrations in groundwater basins. This preliminary work could indicate an increase, decrease, or no expected changes in the future. More detailed study (Phase 3) would provide quantified future contaminant concentrations for the 20-year planning horizon.

## Subtask 3.3 Develop a Plan for Data Gaps

The Technical Team shall identify potential data gaps or needs based on the work completed in **Tasks 2 and 3**. Data gaps could include groundwater quality data, groundwater monitoring data, salinity and nutrient source data, and data for hydrogeologic and other groundwater modeling parameters. The Technical Team shall determine what additional data may be required to support future analysis or modeling efforts to be completed in Phase 3. If necessary, the Technical Team will develop a plan for obtaining the data, including the identification of responsible parties for collecting the data as part of the monitoring plan to be developed under **Task 6**.

***Task 3 Deliverables:***

- Salt and nutrient source location and loads maps
- Preliminary water budget and mass load estimates
- Preliminary salinity and nutrient source load assessment and evaluation of model results of existing and projected basin conditions
- Stakeholder Workshop 2: Salt/Nutrient Loading and Trends

***Task 3 Assumptions:***

- Loading assessments will include an initial analyses, a review by the Technical Team, and

then a final analyses for presentation to the Stakeholders

- A Technical Memorandum or other written summary in digital format will be developed that can be used in subsequent workshop presentations and handouts and for use in the Draft and Final Salt/Nutrient Management Plan. This summary will include appropriate figures and maps based on the analyses conducted.

## Task 4. Identify Water Management Goals and Potential Strategies

The purpose of this task is to identify the principal goals to be achieved by the SNMP and to develop an initial list of management strategies that may be appropriate for achieving the established goals.

### Subtask 4.1 Identify Water Supply and Water Quality Management Goals

The Technical Team shall identify the preferred goals of the key agencies that will implement the SNMP and other stakeholders, including processes for obtaining stakeholder input and resolving potential conflicts.

Working with the CVRWMG, the Technical Team shall develop an approach to solicit input from Stakeholders that will be used to identify and rank overall management goals to be achieved within the groundwater basin or sub-basin/management area. Desired goals may focus on source load reduction, treatment, providing other forms of water quality protection, or increased recycled water use. The selected goals should be specific to the needs and conditions of the basin, and will, in part, depend on:

- Existing groundwater quality and occurrence
- Existing salinity/nutrient source loads and locations
- Water agency needs and proposed supply projects
- Recycled water agency needs and proposed projects
- Existing Basin Plan objectives and compliance issues
- Water conservation considerations
- Potential within the basin to implement specific groundwater management strategies
- Basin assimilative capacity
- Funding/implementation considerations
- Future growth (development depends on water supply assessments)

The CVRWMG shall be responsible for managing and addressing potential stakeholder conflicts and refinement of the SNMP goals as may be necessary. The Technical Team will provide a Technical Memorandum or other written summary that can be used in subsequent workshop presentations and handouts and for use in the Draft and Final Salt/Nutrient Management Plan. This updated summary will include appropriate figures and maps based on the analyses conducted previously and the salt/nutrient management plan goals developed under this task.

### Subtask 4.2 Develop List of Potential Management Strategies

The Technical Team shall review possible salinity and nutrient management strategies, including those being implemented or under consideration by agencies, those identified in previous studies, and based on input from the CVRWMB and stakeholders. The Technical Team will develop a

preliminary list of alternative management strategies that are feasible for implementation in the groundwater basin, and obtain stakeholder input on the preliminary list. The following are potential strategies that may be considered:

| Summary of Potential Salinity/Nutrient Management Strategies | |
|---|---|
| **Category** | **Potential Salinity/Nutrient Management Strategy** |
| Wastewater salinity/nutrient source control | • Water softener control (ordinance and/or rebates)<br>• Local pretreatment limits (industrial discharge controls)<br>• Recycled water nutrient treatment<br>• Recycled water demineralization treatment |
| Public education | • Salinity source reduction best management practices<br>• Water softener use<br>• Irrigation best management practices<br>• Fertilizer use best management practices |
| Source load reduction | • Agency lease-holder requirements<br>• Fertilizer reduction requirements for recycled water users<br>• Source load diversion |
| Source water salinity control | • Brackish source water demineralization<br>• Modify ratios of local or imported water sources |
| Salt export | • Brine line<br>• Salt flushing to the Salton Sea or other location<br>• Concentrate management including disposal<br>• Zero liquid discharge involving salt sequestration |
| Groundwater recharge | • Imported water recharge<br>• Recycled water recharge<br>• Stormwater recharge<br>• Percolation basins<br>• Injection wells<br>• Aquifer Storage Recovery (ASR) wells |
| Groundwater management | • Conjunctive use<br>• Demineralization treatment<br>• In lieu (exchange use of untreated groundwater for recycled water)<br>• Decrease detention time<br>• Seasonal storage<br>• Carryover storage<br>• Emergency storage |
| Land use regulation | • Modify land use policy<br>• Require sewer connections |
| Water use efficiency (20 x 2020 goals) | • Landscape ordinance<br>• Water use restrictions<br>• Water conservation rate structures |

| Summary of Potential Salinity/Nutrient Management Strategies | |
|---|---|
| **Category** | **Potential Salinity/Nutrient Management Strategy** |
| | • Public education/behavior change |
| Stormwater/runoff management | • Stormwater BMPs to reduce salinity/nutrient loading<br>• Stormwater diversion to beneficial use<br>• Low flow runoff diversion |
| Regulatory | • Changes to current basin plan (work in conjunction with RWQCB in Phase 3):<br>  • Designated Beneficial Uses (See Task 2)<br>  • Numerical groundwater concentration objectives or narrative translation procedures<br>  • Implementation policies and projects |

## Subtask 4.3 Evaluate Feasibility of Potential Management Strategies

Following completion of **Subtask 4.2**, the Technical Team will evaluate the list of potential management strategies to identify and compare the most feasible strategies (including existing and proposed strategies) on the basis of factors such as:

- Costs (capital and O&M, including monitoring costs)
- Anticipated water quality improvements
- Local water supply development potential, including increasing the use of recycled waters or enhanced development of groundwater supplies
- Regulatory compliance
- Sustainability and funding considerations
- Ability to implement
- Environmental impacts

After this evaluation is complete, preferred management strategies will be recommended for implementation by the Technical Team using stakeholder feedback and a pre-defined decision process and will be carried forwarded into the anti-degradation process for further review and consideration (**Task 5**). The CVRWMG will oversee the evaluation process and make final decisions regarding the recommended strategies.

The methodology for evaluating and ranking the list of potential management strategies will be developed by the Technical Team to help determine which management strategies should be implemented to help address the various SNMP goals (preferred management strategies). If necessary, a decision methodology will be developed with input from the Stakeholders to help define and document the decision-making process. The potential costs for implementation, including monitoring needs, of the strategies should also be considered in the prioritization process.

## Subtask 4.4 Assimilative Capacity Analysis

Assimilative capacity represents a comparison of existing water quality concentrations to the limits set in the Colorado River RWQCB's Water Quality Control Plan (Basin Plan). In general, water quality better than the Basin Plan limits is an indicator of available assimilative capacity,

while water quality constituent levels above the Basin Plan limits indicate that load reduction measures may be necessary (or that Basin Plan objectives may need to be changed). In this subtask, the Technical Team will conduct several activities that will allow comparison of groundwater quality at representative locations within the basin to identified limits set in the Basin Plan to estimate the assimilative capacity of the groundwater basin, either in whole or by management area.

#### Step 1: Identify Basin Management Levels

The Technical Team will work with Colorado River RWQCB staff to identify a method for translating the existing narrative water quality objectives for Municipal Supply (MUN), Agricultural Supply (AGR) and Industrial Supply (IND), as documented in the Basin Plan, into basin management targets for the recommended list of constituents of concern developed in **Subtask 2.5**. These levels will be used in the subsequent steps to estimate the basin assimilative capacity.

#### Step 2: Compare Baseline Groundwater Quality Conditions with Basin Management Targets

After identifying the Basin Management Targets, baseline groundwater quality will be compared to the targets to determine if the current status of the basin with respect to the Basin Plan's management goals.

#### Step 3: Evaluate Fate and Transport of Salts and Nutrients in Groundwater Basin

The Technical Team will also perform a qualitative analysis of the fate and transport of the identified constituents of concern using the GIS-based mass balance model.

#### Step 4: Estimate Basin Assimilative Capacity

The results of the previous steps will then be brought together to estimate the groundwater basin's assimilative capacity.

This approach will facilitate future updates to the analysis as well as allow reviewers to monitor specific areas of concern within the basin.

***Task 4 Deliverables:***

- SNMP goals
- Summary of identified and ranked alternative management strategies
- Decision methodology for selecting the preferred strategy(ies)
- Stakeholder Workshop 3: SNMP Goals and Management Strategies
- Mass balance model and results
- Assimilative capacity analysis

***Task 4 Assumptions:***

- The CVRWMG shall be responsible for managing and addressing potential stakeholder conflicts and refinement of the SNMP goals and preferred management strategies.

# Task 5. Conduct Anti-Degradation Process

The anti-degradation process incorporates and builds, as well as informs, efforts performed in previous tasks to evaluate the preferred management strategies. Strategies developed under **Task 4** should be reconsidered as a result of the initial analyses. In addition, assumptions and/or data collection needs resulting from the Salt/Nutrient Loading and Trends Analysis may also have to be revised or updated as a result of this analysis.

## Subtask 5.1 Assess Load Reductions and Water Quality Improvements

The purpose of this task is to assess the existing and preferred water management strategies and their ability to meet the goals of the SNMP, including any salt/nutrient load reduction, other water quality goal, and water supply/beneficial use goals. The Technical Team will identify the necessary mass loading modeling scenarios to be analyzed on a projected basis to assess the effectiveness of each management strategy in meeting the SNMP goals. It is assumed that the mass balance tool developed under **Task 3** will be utilized to perform this analysis. Initial strategies that should be assessed will be those strategies currently employed by agencies. If additional strategies are needed to meet SNMP goals, then the additional analyses will consider new/additional strategies based on the preferences identified under **Task 4**.

## Subtask 5.2 Identify Preferred Management Strategies

The Technical Team shall evaluate the preferred management strategies identified in **Subtask 4.3**, along with any additional management strategies determined potentially feasible, to determine their compliance with the State's Anti-Degradation Policy (Resolution Number 68-16). Specifically, the assessment will:

- Determine if their implementation will degrade groundwater;
- Verify that they meet best practicable treatment or control (BPTC) requirements; or
- If the strategy is consistent with the maximum benefit to the people of the State.

After this evaluation is complete, the revised list of preferred management strategies will be recommended for implementation by the Technical Team using stakeholder feedback and a pre-defined decision process. The CVRWMG will oversee the evaluation process and make final decisions regarding the recommended strategies.

If any Basin Plan Amendments are recommended (including those identified in **Task 4**) after conducting the anti-degradation process and evaluation of management strategies, then the following steps should be undertaken as part of the Phase 2 effort:

- Identify required Basin Plan Amendments (e.g. changes to numerical objectives, implementation policies, or beneficial uses) associated with the preferred salinity/nutrient management strategies. This effort will most likely occur during Phase 2 activities, but additional amendments may be developed as part of the initial Phase 3 efforts as well.
- Coordinate with Regional Board staff to (1) reach agreement on the approach for Basin Plan amendment; (2) identify information needs necessary for the proposed Basin Plan Amendment; and (3) identify if data are available for proposed amendment.
- Under **Task 6**, develop a data collection or monitoring plan necessary to collect any necessary data as part of the Phase 3 process.

Actual Basin Plan Amendments would be prepared under Phase 3.

***Task 5 Deliverables:***

- Assessment of load reduction and/or water quality improvements (anti-degradation process) - Technical Memorandum
- Evaluation and selection of SNMP Management Strategies - Technical Memorandum, including any recommended Basin Plan Amendments for Phase 3
- Recommendations for any additional Basin Plan Amendments - Technical Memorandum
- Stakeholder Workshop 4: Anti-Degradation Process and Management Strategies

## Task 6. Finalize Phase 2 SNMP

This task will involve developing an implementation plan, identifying the metrics to evaluate effectiveness of selected salinity and nutrient management strategies, developing monitoring and audit plans, finalizing the SNMP, and working with the Colorado River Basin RWQCB (Region 7) to obtain approval of the Phase 2 SNMP and scope for the Phase 3 SNMP.

### Subtask 6.1 Develop Implementation Plan

The Technical Team will develop an Implementation Plan that will include the following components:

- Identification of the selected management strategies
- Activities to be implemented
- Phases of implementation
- Estimated costs
- Implementation timeframes

### Subtask 6.2 Identify Metrics and Develop Monitoring Program

The Technical Team shall identify metrics (measureable parameters) that can be used to evaluate the effectiveness of the selected salinity and nutrient management strategies following implementation. The Technical Team shall develop a monitoring program, including identification of the responsible agency, the schedule for implementation, and monitoring required to measure the effectiveness of any implemented groundwater management strategy. Existing monitoring efforts will be incorporated into the SNMP monitoring plan. Where possible, existing monitoring efforts will be adjusted to include any necessary SNMP monitoring needs. The costs for additional monitoring needs shall be considered when assessing the feasibility of the implementation strategies under **Task 5.2.** The monitoring program shall comply with the State Water Resources Control Board's (SWRCB's) policy on monitoring of contaminants of emerging concern (CECs) that is currently in draft form and expected to be approved in late 2012 or 2013. In addition, data collection/monitoring needs identified under **Tasks 3** will also be included in this monitoring plan. The metrics and monitoring plan shall be reviewed by the CVRWMG prior to input from the Stakeholder Workshop.

### Subtask 6.3 Develop SNMP Data Management, Reporting, and Audit Processes

The Technical Team shall establish the framework and schedule for how data will be managed,

including ongoing monitoring efforts, in addition to reporting and auditing processes. Auditing of the SNMP and its implementation will likely be conducted on a periodic basis and should include updating of the SNMP (based on adaptive management principles) and identifying the responsible agency or agencies for implementing the effectiveness assessment.

## Subtask 6.4 Determine CEQA/NEPA Compliance Needs

In conjunction with the RWQCB, the Technical Team shall determine how the recommended SNMP will need to conform to California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) requirements. In accordance with the SWRCB's Recycled Water Policy, the SNMP is required to be in compliance with CEQA to determine potential significant environmental impacts and identify measures to avoid or mitigate impacts where feasible.

However, under the California Secretary for Natural Resources, the SWRCB's basin planning process is exempt from certain requirements of CEQA, including the preparation of an Initial Study, Negative Declaration, and Environmental Impact Report [CCR, Title 14, §15251(g)].The SNMP may still be subject to other CEQA provisions, including the avoidance of significant adverse effects to the environment where feasible. Completion of an environmental checklist and a written report consisting of a description of the proposed activities, analysis of reasonable alternatives, and identification of mitigation measures to minimize potential significant adverse environmental impacts may still be required (CCR, Title 23, §3777(a)). In lieu of an Initial Study, Negative Declaration, and Environmental Impact Report, a Substitute Environmental Documentation (SED) may be required for any water quality control plan, state policy for water quality control, and other components of California's water quality management plan, prior to RWQCB approval or adoption. This assessment will identify if implementation of the recommended strategies or any identified Basin Plan Amendments (to be developed under Phase 3 of this work plan) will be subject to review under CEQA or NEPA and if an SED or other documentation will be necessary.

The Technical Team will support the RWQCB in preparing the necessary CEQA documentation for implementation of the SNMP. For the purposes of this work plan, it is assumed that all management strategies identified in previous tasks for implementation under the SNMP will be non-structural in nature (e.g. policies, monitoring). Therefore, the scope of work under this subtask is limited to:

- One scoping meeting to seek input on environmental information that should be considered;
- Completion of an environmental checklist evaluating environmental factors that may be potentially affected by the SNMP implementation;
- Preparation of a response to any comments received on the environmental checklist and during the scoping meeting; and
- A cover memorandum identifying the preferred management strategies and summarizing the results of the checklist and scoping meeting (including identification of any recommended mitigation measures).

If the recommended strategies or identified Basin Plan Amendments would be subject to review, then in conjunction with the RWQCB and as part of the Phase 2 work, the CVRWMG and the

Technical Team will:

- Identify the appropriate governing body (lead agency)
- Identify the required documentation and responsible parties

Since preparation of the Basin Plan Amendments are proposed under Phase 3, the Environmental Documentation process will occur in Phase 3 as well.

## Subtask 6.5 Finalization of the SNMP

The Technical Team shall prepare a Draft and Final Salt/Nutrient Management Plan that summarize the results of all deliverables described within **Tasks 1 through 6** into a comprehensive planning document that is stand-alone or that can be incorporated into the IRWM Plan Update.

***Task 6 Deliverables:***

- Summaries or Technical Memorandums from **Tasks 2 through 5**,
- SNMP Implementation Plan
- Performance metrics and monitoring plan
- SNMP Audit Plan
- Scope and Schedule for Phase 3 efforts, including any proposed Basin Plan modifications for Phase 3
- Assessment of any required CEQA/NEPA documentation
- Draft and Final Salt/Nutrient Management Plan
- Stakeholder Workshop 5: Draft SNMP

***Task 6 Assumptions:***

- One Draft Plan will be developed and after review by the CVRWMG, will be reviewed by the public stakeholders as part of Stakeholder Workshop 5. Comments from this review will then be incorporated into a Final Plan for approval by the CVRWMG.

# Phase 3 Tasks

The purpose of Phase 3 is to update the SNMP based on additional data and/or recommendations resulting from the Phase 2 tasks. Possible tasks for inclusion in Phase 3 may include the following. Please note, however, that this list does not constitute a complete Work Plan for Phase 3.

## Supplemental Monitoring

This task includes collecting of supplemental monitoring needs identified under Phase 2. Such data could be a limited, one-time collection effort or could become an ongoing monitoring/effort that is required to evaluate the SNMP performance measures.

## Update Salt/Nutrient Loading and Trends (if necessary)

This would be an update to the analysis conducted under Task 3 in Phase 2, and would only be necessary if new or updated data were collected.

## Update Water Management Goals and Strategies (if necessary)

This would be an update to the analysis conducted under Tasks 4 and 5 in Phase 2 and would only be necessary if there were significant changes due to new data and/or the salt/nutrient loading and trends analysis. In addition, new goals or strategies may be developed and initial performance feedback on the existing or early implementation strategies under Phase 2 may warrant a change in the preferred strategies. If any Basin Plan Amendments are proposed as part of the implementation strategies (from Phase 2 or 3), then potential steps for this process include:

- Identifying required Basin Plan Amendments
- Coordinate with RWQCB staff on approach/process amending the Basin Plan
- Develop necessary documentation in coordination with the finalization of the SNMP
- Submitting the documentation to the RWQCB for review
- Coordinating with the RWQCB and establishing a plan for developing and submitting the environmental documentation to the RWQCB, as required

## Update Anti-Degradation Process (if necessary)

This would be an update to the analysis conducted under Tasks 5 and 6 in Phase 2 and would only be necessary if new data were collected or updates were necessary as a result of changes in the salt/nutrient loading and trends analysis or changes made in the proposed water management goals or strategies.

## Update SNMP (if necessary)

The SNMP may be updated, if necessary, based on the result of afore-mentioned Phase 3 tasks.

# EXISTING DATA / REPORT BIBLIOGRAPHY

The following table lists a sample of currently known data/information that is being requested from agencies involved with the SNMP.

| Agency | Data/ Report | Date | Filename |
|---|---|---|---|
| **Coachella Valley Water District (CVWD)** | WQ Data / Coachella Canal at Avenue 52 East Annual Data 2007-2012 | Oct. 2, 2012 | Canal WQ Data 2007 to 2012.pdf |
| **CVWD** | WQ Table / TDS for Colorado River Aqueduct at San Jacinto Tunnel and Coachella Canal at Avenue 52 East Annual Data 2007-2012 | | Table 1_TDS for Colorado River Aqueduct and Coachella Canal Jan_2007 to Aug_2012.prf |
| **CVWD** | WQ Chart / TDS for Colorado River Aqueduct at San Jacinto Tunnel and Coachella Canal at Avenue 52 East Annual Data 2007-2012 | | Chart 1_TDS for Colorado River Aqueduct and Coachella Canal Jan_2007 to Aug_2012.prf |
| **Coachella Water Authority (CWA)** | | | |
| **Desert Water Agency (DWA)** | | | |
| **Indio Water Authority (IWA)** | | | |
| **Mission Springs Water District (MSWD)** | | | |

# Appendix VI-H: Coachella Valley IRWM Program Project List (as of December 14, 2018)

This appendix includes a list of all projects submitted for inclusion in the 2018 Coachella Valley IRWM/SWR Plan. The list is divided into an IRWM project list and a SWRP project list. Per requirements of the 2015 SWRP Guidelines, the SWRP projects are scored and ranked in three tiers.

The lists as printed are current as of December 14, 2018 but may be updated at any time. Please refer to the online project database for a current list of all projects included in the Plan. The project database can be accessed here: http://irwm.rmcwater.com/cv/login.php. Please be aware that users must register and login prior to viewing the database. Registration is free.

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| Project Title | Organization | Project Type | Project Description |
|---|---|---|---|
| Water Recycling Efficiency and Capacity Improvement Project | Desert Water Agency | Construction Project | From #19: To meet the proposed recycled water demands, capacity and production will be increased at the Agency owned water reclamation plant.<br><br>#20<br>The Agency proposes to install two wells to pump non-potable groundwater. This groundwater will be fed into the recycled water plant to supplement the water currently being treated during high demand water periods. A new 500,000-gallon water reservoir is being added, along with a new hydro pneumatic tank, increasing the water storage capacity at the plant. The project will also increase energy efficiency, through the installation of solar power generating modules. The solar power created will be used to offset power costs, reduce the electrical grid demand and carbon footprint of the recycled water plant. |
| Mid Valley Pipeline - Phase II | Coachella Valley Water District | Construction Project | The Mid-Valley Pipeline is a non-potable water distribution system to convey recycled water and Colorado River water to golf courses for irrigaion in lieu of groundwater. The project consists of two phases estimated at a total cost of approximately $75 million. Phase 1 is complete and consists of a booster station at the Coachella Canal in the City of Indio, approximately 7 miles of 54-inch pipeline along the Whitewater River Stormwater Channel, and 90 acre-feet of storage reservoirs at CVWD's WRP 10. Phase 1 pumps Colorado River water from the canal to the existing WRP 10 recycled water distribution system which serves 8 golf courses. Colorado River water augments the recycled water supply in summer months when golf course irrigation demand exceeds recycled water supply. Phase II is estimated to cost $35 million and consists of expansion of the WRP 10 distribution system to serve 50 golf courses with an average demand of 1,000 acre-feet per year each. |
| Posse Park Surface Water Treatment Plant | Indio Water Authority | Construction Project | IWA has signed a letter of intent to purchase 20,000 AFY of Delta water to be exchanged with Colorado River water to be delivered to the new SWTP via the Coachella Canal. A SWTP would increase IWA?s flexibility in serving its customers and would help reduce the groundwater overdraft in the area. The intention is that treated water from the SWTP would be primarily for potable use, but it may also be used as a blending source for future groundwater recharge.<br><br>The IWA Conceptual Design report evaluated six alternatives and identified full conventional pretreatment, low pressure membrane filtration, blending of filtered surface water with existing groundwater supplies and free chlorine for primary and residual disinfection as the prefered alternative.<br><br>The project will be designed and constructed in two phases with an initial capacity of 10 MGD and expanded once for an additional 4 MGD by 2025. |
| Fargo Canyon Spreading Facility | Indio Water Authority | Construction Project | Through the construction of a new diversion from the CRA, the project will provide for the storing of water within the Fargo Canyon aquifer through spreading. During a ?put? year, surplus Colorado River water or other surface water entitlements may be taken directly from the CRA and spread directly into the Fargo Canyon Spreading Basins. During a ?take? year, annual replenishment deliveries would be reduced by an equivalent amount of ?take? from the new storage account. Water normally delivered to the Valley via Metropolitan?s CRA would now be available for delivery to other water purveyors via exchange within Metropolitan?s water system. Valley-wide agencies would pump groundwater from the storage account, and thus would not require replenishment. This project presents a proactive approach to meeting future needs as well as providing a storage opportunity for agencies currently lacking adequate storage. |
| Belardo Road Pipeline Replacement | Desert Water Agency | Construction Project | The Desert Water Agency General Plan suggested that this pipeline be installed in 2009. Due to budget restraints, the project was postponed. There is a need to install the infastructure to increase the efficiency of the distribution system as well as minimize other water supply or quality problems relating to deterioration of other pipelines over time. This project is several years old and was stopped due to archeological reasons. This section of pipe will connect two sections of 24" pipeline allowing us to move water from north to south as intended in the general plan. Currently, the water must flow through smaller pipes, increasing head loss and reducing flow capacity. |
| Well Pumping Plants 44 and 45 of the Palm Springs Main Well Field | Desert Water Agency | Construction Project | The project consists of construction of two wells, followed by the construction and operation of associated pumping plants. Each well will be drilled to a depth of approximately 1,000 feet, and will have a 20 inch diameter casing fitted with about 400 feet of perforations. Each pumping plant will be designed to produce approximately 2,000 to 2,500 gallons per minute (gpm), and will be driven by a 400? horsepower electric motor. |

| Project Title | Organization | Project Type | Project Description |
|---|---|---|---|
| Groundwater Quality Protection Project | Mission Springs Water District | Construction Project | Areas M. F, D1 are part of a larger assessment district, which voters passed in 2004. In creating the Assessment District, voters provided $28 million of match funding which expires in 2014. Engineering design of the 10 sub areas that make up the assessment district is almost complete and funds are needed for construction.<br><br>The project will abate septic systems and protect both the drinking water supply and the hot water that is the basis of the spa economy for the city of DHS and the Coachella Valley. In some parts of the city the septic tank density is 2.3 to 2.8 times the density recommended by the Regional Water Quality Control Board. |
| Smart Water Conservation Programs | Indio Water Authority | Conservation | The Smart Water Conservation Programs will be used to help residence and stakeholders make smart water conservation decisions and also make conservation equipment more available. Home water audits are an excellent educational tool, and the IWA would like to provide indoor and outdoor audits. Turf conversion to drought tolerant plants is one of the most effective water conservation practices but the costs are prohibitive to many people. This project could make this option possible to many more people. Irrigation systems in the region are poorly designed, aged, and outdated. New irrigation products such as spray heads and smart controllers are available but more education is needed. Smart controllers are costly so different rebate options should be available.Additional programs include supplying consumers with plumbing retrofitting, water efficient shower heads and low flow toilets. Program monitoring will be used evaluate cost effectiveness and to enhance outreach and education. |
| Groundwater Elevation Monitoring--Regional project of CVRWMG | CVRWMG | Planning | Develop the groundwater elevation monitoring for the groundwater basins/subbasins in the Coachella Valley Water Management Region, so as to better manage the resource during normal, wet and dry water years. An entity must volunteer to be the monitoring agent by January 1, 2011, with reporting to begin by January 1, 2012. |
| Information Systems--a Regional Project of CVRWMG | CVRWMG | Planning | Conceptual design needed--information systems that will report on those metrics that relate to attainment of Plan objectives |
| Resource Action Programs | Mission Springs Water District | Conservation | MSWD will sponsor a RAP program which provides conservation kits containing water efficient fixtures such as a low flow showerhead and faucet aerators.<br><br>Program is administered in part through partner agencies that provide free financial counseling to families in economically disadvantaged communities.<br><br>Customers learn about the water saving fixtures they are being supplied with and how, along with good conservation habits, installing the efficient fixtures will reduce their monthly utility bills while conserving water.<br><br>In the 2008-2009 school year, the RAP "Living Wise" program administered thru 6th grade classrooms resulted in over 13,000 gallons saved annually per household - an annual community savings of over 5 million gallons of water. Bringing a similar program to adults in the community will result in additional significant savings. |
| Agricultural Conservation Program | Coachella Valley Water District | Conservation | CVWD has demonstrated through past Bureau of Reclamation sponsored programs that CVWD sponsored agricultural conservation programs with grower participation are effective. This Agricultural Conservation Program will provide a tiered approach to conservation, graduating to more stringent steps as necessary to achieve a goal of 14 percent conservation in agricultural irrigation. The steps are 1) grower education and training, 2) CVWD provided services such as scientific irrigation scheduling, scientific salinity management, moisture monitoring, and irrigation distribution uniformity evaluations, 3) irrigation system upgrades/retrofits which includes full or partial funding to convert from flood and sprinkler to micro-sprinkler and drip, 5) economic incentives to those who maintain a water use budget. |
| Semi-Perched Brackish Groundwater Treatment Facility for Agricultural Irrigation | Coachella Valley Water District | Conceptual Design | A brackish groundwater treatment pilot/feasibility study was completed in 2008 (Malcolm-Pirnei) testing treatment alternatives, brine management approaches, and source water supply capture. The study recommended capturing semi-perched brackish groundwater return flows (via bank filtration/pumping) for desalination using either reverse osmosis or nano filtration. It is proposed that the desalinated water would be used for agricultural irrigation in lieu of Colorado River Water. This would create new water for agricultural irrigation, making more Colorado River water and groundwater available for municipal use or recharge. Brine could also be reused for saline wetlands habitat. |
| Colorado River Water Treatment Facility for Municipal Use | Coachella Valley Water District | Conceptual Design | As growth occurs in the eastern Coachella Valley and farms convert to urban uses, agricultural demand for Colorado River Water water decreases. To avoid increased urban groundwater pumping, Colorado River water water will need to be treated for municipal use. A surface water treatment feasibility study was successfully completed by Malcolm-Pirnie in 2008 testing alternative treatment methods and system compatibility. It is proposed that facilities could be designed to treat up to 90,000 acre-feet per year of Colorado River water by 2045. |

| Project Title | Organization | Project Type | Project Description |
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| Groundwater Quality Protection Perez Road Sewers | City of Cathedral City | Construction Project | Replace existing septic tanks with sanitary sewers in the vicinity of Perez Road from Date Palm Drive to Campbell Street and from Kieley Road to Cathedral Canyon Channel. The project includes 6,820 feet of 8" diameter sewer and 4,324 feet of 15" sewer. The project will eliminate over 80 existing septic tanks and provide sanitary sewer service to 98 individual parcels. |
| Verbena Channel | Riverside County Flood Control and Water Conservation District | Construction Project | Verbena Channel is south of Dillon Road and north of Two Bunch Palms Trail, and will replace a storm drain and detention basin system from Camino Idilio approximately one mile north Verbena Drive at Park Lane. |
| Palm Springs MDP line 41 | Riverside County Flood Control and Water Conservation District | Construction Project | Project would construction flood control facilities benefitting the communities of Palm Springs and Cathedral City. Line 41 from Golf Center Drive westerly in East Palm Canyon Drive to Cherokee Way. |
| Groundwater Quality Protection South City Improvement District (SCID) | City of Cathedral City | Construction Project | The South City Improvement District involves constructing municipal wastewater collection systems and eliminating septic tanks that overlie regional aquifers. The project will build over five miles of wastewater pipelines and eliminate approximately 500 septic tanks?extending the municipal wastewater collection system to over 700 properties.<br><br>Septic tanks have infiltrated the region at a fast pace due to rapid growth in the area. The rapid spread of septic tanks has lead to increased levels of total dissolved solids and nitrate salts in regional groundwater. |
| Groundwater Quality Protection and Floodplain Management - Eagle Canyon Dam and Lines 43 and 41 | City of Cathedral City | Construction Project | The proposed project would include the construction, operation, and maintenance of an earthen dam, debris catchment and underground storm drain. The project will provide flood detention and flood hazard mitigation for the developed portion of Cathedral City located downstream of the canyon. The outlet works would be ungated and the dam would therefore only hold water for brief periods of<br>time following significant flood events. The debris basin would keep sediment and debris from flowing<br>downstream, and would be cleaned out on a periodic basis to prevent buildup of materials and storm water.<br><br>Storm water flows from the wash would be conveyed in 3300 linear feet of 42? drainage pipeline (Line 43), which extends to East Palm Canyon Drive (Highway 111) for approximately 1,000 LF, terminating at the West Cathedral Channel.<br><br>Prior to construction of the project, the Project Proponent anticipates remediation of potentially hazardous materials resulting from illegal dumping. |
| Water, Sewer and Drainage - North City Specific Plan | City of Cathedral City | Conceptual Design | A primary goal of the North City Specific Plan is to provide for sustainably-designed infrastructure in new development. Ensure that an adequate infrastructure system is in place for future<br>development in North City.<br><br>To conserve precious water resources, an area-wide reclaimed water system would be desirable. Per the CVWD Master Plan, a new sewer system will be installed to the southeast of the Specific Plan area that will direct the flow on the north side of the I-10 freeway to the Thousand Palms area.<br><br>There is currently no storm drain infrastructure within the Specific Plan area. CVWD will own and maintain future storm drain systems. Two major storm drain system backbone lines are recommended: (1) To serve the Edom Hill-Light Industrial District (2) To serve all new development along I-10. Two major channels are recommended to carry the runoff to a detention system or to the Whitewater Wash: (1) Morongo Wash and (2) Long Canyon/Willow Hole. |

| Project Title | Organization | Project Type | Project Description |
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| Eastern Coachella Valley Water Supply Project -- Small Water Systems | Coachella Valley Water District | Conceptual Design | In the eastern Coachella Valley, there are a number of rural communities that are not connected to Coachella Valley Water District's (CVWD's) potable water system. These communities are classified as disadvantaged communities (DACs) and depend on local private wells connected to independent small water systems (SWSs) to supply their drinking water. The local groundwater supplies of several of the SWSs have shown elevated concentrations of arsenic and other constituents that are currently regulated by the State or may be in the near future (e.g., hexavalent chromium).<br><br>To improve the reliability and potential safety of water supply to the SWSs, CVWD evaluated consolidation of the SWSs into CVWD's potable water system. CVWD evaluated and prioritized 42 SWSs for consolidation. This project will develop preliminary engineering and environmental compliance documents for the highest priority SWSs. CVWD is partnering with its DAC Infrastructure Task Force to implement the project in coordination with other water and wastewater infrastructure projects in the eastern Coachella Valley.<br><br>The 12 highest priority SWSs have been put into 2 groups. The first group (Valley View Mobile Home Park) will consolidate 9 SWSs with 135 service connections representing approximately 118 acre-feet per year. The second group (Saint Anthony Mobile Home Park) will consolidate 3 SWSs with 112 service connections representing approximately 106 acre-feet per year. Two preliminary engineering reports (PERs) and environmental compliance documents will be prepared. The PERs will include, but are not limited to, data collection, hydraulic modeling, water system and distribution system improvements, identification of property easements necessary, estimated capital construction costs and O&M costs, refined funding needs, and project schedule. |
| Pierce Community Infrastructure - Regional Water Treatment Facility (North) | Pueblo Unido CDC | Construction Project | Agricultural Worker families represent the local labor force that contributes approximately 500 million dollars a year in agriculture to the region. Farm workers constitute the back bone of our national food system sustainability. But despite their remarkable contribution, these hard working families is the largest disadvantaged community in the region plagued with extreme rates of poverty, unemployment, virtually non-existent access to critical social and economic development services, and lack of affordable and safe housing. The major barrier is the lack of basic infrastructure that has been detrimental in bringing new resources and opportunities to improve the quality of life.<br><br>The proposed Pierce Community Infrastructure ? Regional Water Treatment Facility consist of extending approximately 20,000 linear feet of pipeline from the nearest connection point located at Avenue 74 and Harrison Rd. The pipeline will be extended east along Av. 74, and north along Pierce St |
| Bridge Drainage System Design for 3 Whitewater River Bridges | City of Cathedral City | Conceptual Design | Bridge deck drainage is accomplished in the same manner as drainage of other curbed roadway sections, bridge decks are often less effectively drained because of lower cross slopes, uniform cross slopes for traffic lanes and shoulders, parapets that collect relatively large amounts of debris, drainage inlets and piping that are relatively small, and clogging of inlets and drainage systems. Bridge inlets<br>collect flow into relatively small ductile cast-iron or welded-steel chambers. By contrast, pavement systems have features that are much larger pre-cast, cast-in-place, or masonry structures. Such weight and size is incompatible with bridge structures. Bridge drains are typically steel tubes that must withstand vibrations and deflections better than the storm drains associated with pavement drainage. Requirements in the design of deck drainage systems differ in the following respects from roadway drainage systems:<br>Near total interception may be a desirable upgrade of expansion joints |
| Wetland, Riparian, and Pupfish Habitat for CVMSHCP and Natural Community Conservation Plan | Coachella Valley Water District | Protection/Restoration | This project consists of constructing 3 permanent habitats including 66 acres of wetland for California Black Rail and Yuma Clapper Rail, 44 acres of Sonoran Cottonwood-Willow riparian forest, 25 acres of managed replacement habitat for desert pupfish, and 5 acres of emergent wetland and riparian habitat in the Coachella Valley Storm Water Channel and Delta Conservation area. |
| Master Drainage Plan Implementation - Ramon Road Corridor | City of Cathedral City | Conceptual Design | Address intercepting runoff flows along Ramon Road between the White Water River and Date Palm Drive by utilizing the combination of storm drain pipe, and detention basin systems. However, due to the significant size of drainage facilities required to intercept all the flows reaching Ramon Road further studies of viable alternatives to intercept runoff flows along Ramon Road between the White Water River and Canyon Vista Road, east of existing high point along Ramon Road should be accomplished. The logic in looking at the set of alternatives is based on considering the high point east of Avenida Valdez as the terminus point for the Ramon Road system connecting at the Whitewater River. These additional alternatives also provide the City the opportunity to develop a phased implementation plan to intercept runoff flow tributary to Ramon Road at Date Palm Drive via a future system along Date Palm Drive. |

| Project Title | Organization | Project Type | Project Description |
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| IWA Recycled Water Program | Indio Water Authority | Construction Project | The proposed Indio Water Authority (IWA) Recycled Water project would include:<br><br>(1) installation and operation of a tertiary treatment system that complies with Title 22 Standards for recycled irrigation water,<br>(2) installation and/or conversion and operation of pipelines for recycled water conveyance,<br>(3) installation and operation of one or more groundwater recharge treatment facilities, and<br>(4) installation and operation of aquifer storage recovery (ASR) wells or conversion and operation of existing wells to ASR for groundwater recharge. The project components would be expected to be implemented in phases based upon recycled water availability and market demand.<br><br>Several treatment options would comply with Title 22 Standards for irrigation waterincluding tertiary filtration, tertiary microfiltration and membrane bioreactors. Title 22 effluent requirements for each treatment option are tailored to ensure the reliability of the specific treatment option. |
| Implement projects in the Desert Hot Springs Area Master Drainage Plan | Mission Springs Water District | Protection/Restoration | See Flood Control entry for full description. Additionally, project should investigate recharge of flood waters into Mission Creek Subbasin, as a source of "new water" for the basin and to offset high TDS of Colorado River Aqueduct water that is currently being percolated. |
| Whitewater River Region and Coachella Valley Stormwater Channel Site Specific Objective Evaluation | Riverside County Flood Control and Water Conservation District | Protection/Restoration | The proposed project will build upon existing data collected to evaluate bacterial indicator contributions from existing dischargers, natural sources and uncontrollable sources. The objective will be to determine if existing natural background and uncontrollable sources of bacterial indicators are causing exceedances of the default water quality objectives for recreational uses that are currently defined in the Colorado River RWQCB Water Quality Control Plan.<br><br>IF such sources are found to be causing the exceedances, the project will develop the necessary reports, ceqa documents and revised basin plan language necessary to support the incorporation of a Site Specific Objective for the CVSC into the RWQCB Water Quality Control Plan. |
| Cathedral City North City Specifc Plan - East Sub-Region | City of Cathedral City | Conceptual Design | A primary goal of the North City Specific Plan East - Subregion is to provide for sustainably-designed infrastructure in new development. Ensure that an adequate infrastructure system is in place for future development in the East-Subregion.<br><br>To conserve precious water resources, an area-wide reclaimed water system would be desirable. Per the CVWD Master Plan, a new sewer system will be installed to the east of the Specific Plan area that will direct the flow on the north side of the I-10 freeway to the Thousand Palms area.<br><br>There is currently no storm drain infrastructure within the planning area. CVWD will own and maintain future storm drain systems. Two major storm drain system backbone lines that are recommended in the North City Specific Plan would be continued eastward to the Thousand Palms area and sized for the future planned area. |
| Tahquitz Creek Levee Reconstruction | City of Palm Springs | Construction Project | The Tahquitz Creek levee, a concrete lined levee, was constructed in 1984 to provide flood control protection of the City's Demuth Park and its Wastewater Treatment Plant. In 1994, the City constructed the Tahquitz Creek Golf Course which raised the elevation of the channel within the golf course and covered the concrete lined levee. The top of the levee is a concrete golf cart path and the channel side slopes are part of the golf course. The City has determined that the levee is not compliant with 44 CFR 65.10, as it does not meet freeboard requirements, long-term static stability with seepage, and rapid drawdown condition. A geotechnical analysis of the levee was performed, and it was determined that: 1) the existing concrete liner does not provide adequate revetment protection and must be replaced; 2) the landside slope of the levee must be stabilized with flattening the slopes to meet minimum requirements; and 3) the height must be increased to meet freeboard requirements. |
| BDCP and DHCCP | Desert Water Agency | Conservation | The project will convey water around the delta increasing supply for SWP contractors and residents of California. The plan includes tunnels, intakes, fish screens, pump stations, levee retrofits and other upgrades to the delta system. |

| Project Title | Organization | Project Type | Project Description |
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| Little Tuscany Sewer Improvements | City of Palm Springs | Construction Project | Construction of 8" V.C.P. sewers to connect to the City of Palm Springs public sewer system within the 70+ enclave of homes commonly referred to as "Little Tuscany", located on Milo Drive, Janis Drive, Vista Drive, Palermo Drive and Leonard Road. The residential subdivision of approximately 70 homes, located south of Racquet Club Road and west of N. Palm Canyon Dr. on the lower portion of the Chino Cone is without a public sewer system. These 70 homes continue to operate on privately owned septic systems. With many homes constructed 30 or 40 years ago, some septic tanks have failed, and given the rocky terrain, finding suitable replacement leach fields for septic systems can be difficult. Over the long term, impairment of groundwater quality exists due to the potential for septic systems to fail and wastewater to percolate into the water table. Extending public sewers to these homes will allow the properties to connect directly to a publicly maintained sewer system. |
| 1400 Zone Facilities | Mission Springs Water District | Construction Project | MSWD's 1400 Zone has experienced significant growth due to residential infill in the 2004-2007 period, reducing redundancy in this zone to minimal levels. Additionally, the primary wells serving this zone have developed elevated levels of uranium, with one well having been removed from the system and the other fitted for wellhead treatment of uranium at a significant cost.<br><br>A new Well 42 has been designed and with it is needed a 4 million gallon reservoir and associated transmission lines. |
| Implementation of Total Maximum Daily Load Best Management Practices | Riverside County Flood Control and Water Conservation District | Construction Project | The proposed project would assist the City of Coachella with the implementation of Best Management Practices (BMPs) to reduce and/or eliminate discharges of bacterial indicators from within the city to the CVSC, which has been identified as impaired due to bacterial indicators.<br><br>The City has identified specific projects that can be implemented to achieve these goals. The projects include low impact development approaches to retrofitting urban areas, such as dry wells, infiltration swales and similar. |
| Groundwater Quality Protection - West Cathedral City Septic Tank Replacement | City of Cathedral City | Construction Project | These projects are located in the western part of Cathedral City north and south of East Palm Canyon Drive. The four un-sewered areas include a 24 acre, 200 unit, mobile home park, 25 acres of commercial property, and 48 acres of residential property.<br><br>The project areas are a listed priority for the Regional Water Quality Control Board Colorado River Basin Region 7. The projects provide a permanent solution to reducing the amount of nitrates, bacteria, viruses and Total Dissolved Solids (TDS) migrating towards the Coachella Valley's underground aquifer, which provides the drinking water supply in the region. This is a groundwater non-point source pollution reduction project providing sewer improvements in Cathedral City to protect drinking water in the Coachella Valley. |
| Pierce Community Infrastructure ? Water Extension Supply (South Section) | Pueblo Unido CDC | Construction Project | Agricultural Worker families represent the local labor force that contributes approximately 500 million dollars a year in agriculture to the region. Farm workers constitute the back bone of our national food system sustainability. But despite their remarkable contribution, these hard working families is the largest disadvantaged community in the region plagued with extreme rates of poverty, unemployment, virtually non-existent access to critical social and economic development services, and lack of affordable and safe housing. The major barrier is the lack of basic infrastructure that has been detrimental in bringing new resources and opportunities to their desire to improve the quality of life.<br>Funding for the proposed project will cover engineering, environmental reports and construction costs to provide safe and reliable drinking water to existing mobile home parks in the vicinity and address the high levels of arsenic and fluoride at onsite wells. |
| Master Drainage Plan Implementation - Cathedral City South | City of Cathedral City | Planning | The project will prepare a master drainage plan for the southern portion of Cathedral City. The area currently does not have any drainage infrastructure. The planned improvements will include detention and retention basins, pipelines, and BMPs for treatment. The improvements will provide a permanent solution to reducing the amount of nitrates, bacteria, viruses and Total Dissolved Solids (TDS) migrating towards the Coachella Valley's underground aquifer, which provides the drinking water supply in the region. This is a groundwater non-point source pollution reduction project providing drainage improvements in Cathedral City to protect drinking water in the Coachella Valley. |

| Project Title | Organization | Project Type | Project Description |
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| Flood Control and Recycling of Storm, Non Storm Run Off Water - Desert Cove Golf Course | City of Cathedral City | Conceptual Design | The Desert Cove flood control plan has 7 distinct elements of flood control improvement types. The plan was designed to resolve existing flood control deficiencies and mitigate increases in flow depth and/or velocity. (1) Hybrid Bermuda Turf grass channel lining/armoring - resisting flow velocity induced erosion, (2) Soil cement lined ponds - stabilize 14 acres of the river channel and serve as water reservoirs for the capture and recycling of water, (3) Turf Reinforcement mats - to stabilize 1.5 acres, (4) Buried soil cement grade control structures - prevent under mining of slope lining in the event of 100 flood, (5) Soil cement fill on top of the southerly bank - mitigate overtop in the 100 year flood, (6) Construct a floodwall atop the northerly bank - mitigate overtop in the 100 year flood , and (7) Reinforced concrete slope protection toe-extension - resolve and existing condition of the East Cathedral Channel and mitigate proposed conditions North Cathedral channel. |
| Ramon Road Corridor - Improve Flood Protection | City of Cathedral City | Conceptual Design | Implement improved flood protection along Ramon Road from Date Palm Drive to the Whitewater River. The project drainage area extends from the Union Pacific Railroad right of way to the north, Ramon Road to the South, the Whitewater River Levee to the west and Date Palm Drive to the east. The Whitewater River serves as the backbone drainage infrastructure facility providng flood protection in the Coachella Valley. Due to the significant size of drainage facilities required to intercept all flows reaching Ramon Road, additional alternatives provide the City the opportunity to develop a phased implementation plan to intercept runoff flow tributary to Ramon Road at Date Plam Drive via a future system along Date Palm Drive. |
| Evaluate Stormwater Recharge Opportunities within the Desert Hot Springs MDP | Riverside County Flood Control and Water Conservation District | Protection/Restoration | The proposed project would conduct a planning level study to evaluate, with the cooperation and partnership of Mission Springs Water District, opportunities to use existing and proposed flood control infrastructure to additionally facilitate stormwater capture and recharge and surface water quality improvements. The project would also investigate the viability of recharging stormwater into the Mission Creek Subbasin as a source of new water and to offset high TDS Colorado River Water that is currently being percolated. The evaluation will include consideration of retrofit of existing flood control infrastructure, modification of proposed flood control infrastructure plans, and consideration of new and/or supplemental projects. Projects that are determined to be viable will be incorporated into the Desert Hot Springs MDP. |
| Palm Springs Unified School District - Storm Drain Outflow Transport Contamination | City of Cathedral City | Planning | The source of the contamination is not known. The first phase of this project will conduct field research to establish the source or sources and develop corrective actions to eliminate the problem. Because the upstream residential and commercial areas are in the process of connecting to a new sanitary sewer system, some septic tank systems are still in use. If the contamination is coming from failures of the existing septic tank systems and leach fields, then subsidizing the cost to connect those properties to the sewer system could solve the problem. Once the source of the contaminatio has been determined and the contamination stopped, the existing catch basins, storm drain piping, distribution boxes, and drywells would have to be cleaned and disinfected. If surface contamination flowing down the curb and gutter is the cause, then a group of filtration systems could be designed and constructed to accept nuisance and storm water. |
| Groundwater Protection- Cathedral City Cove Drainage System 4 | City of Cathedral City | Construction Project | The project will construct 18", 24" and 36" diameter storm drain pipe and appurtenances. The constructed system will convey stormwater to the east Cathedral Canyon Channel which, in turn, discharges to the Whitewater River. BMPs will be implemented to remove gross pollutants. |
| St. Anthony of the Desert - Water Treatment Facility | Pueblo Unido CDC | Construction Project | Agricultural Worker families represent the local labor force that contributes approximately 500 million dollars a year in agriculture to the region. Farm workers constitute the back bone of our national food system sustainability. But despite their remarkable contribution, these hard working families is the largest disadvantaged community in the region plagued with extreme rates of poverty, unemployment, virtually non-existent access to critical social and economic development services, and lack of affordable and safe housing. The major barrier is the lack of basic infrastructure that has been detrimental in bringing new resources and opportunities to improve the quality of life.<br>Funding for the proposed project will cover engineering, environmental reports, local permit fees and construction costs to provide safe and reliable drinking water to resident at St. Anthony of the Desert and effectively address high levels of arsenic and fluoride at the onsite well. |
| Harrison Street (Sunbird and surrounding cluster) | Pueblo Unido CDC | Construction Project | A connection to the CVWD main line needs to be constructed to connect these<br>mobile home parks to CVWDs water. There are 158 mobile home units, that are home to 1,100 residents. There needs to be a planning, Engineering and Construction phase to this project. Aside from the drinking water infrastructure, there is also a need to convert the current septic systems into sewer. Currently places like sunbird mobile home park suffer from serious septic system leaks which could also contribute to the groundwater contamination. Both the water quality and wastewater issues are a public health issue for the residents. |

| Project Title | Organization | Project Type | Project Description |
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| Perris Dam Remediation Program | Desert Water Agency | Construction Project | DWR has identified potential seismic safety risks in a section of the foundation of Perris Dam. There is no imminent threat to life or property. But, in the interest of ensuring the maximum public safety for those downstream of the lake, DWR has lowered the lake's water level. DWR is moving ahead with its plans to repair Perris Dam. The consulting board released its findings to DWR, the Division of Safety and Dams and the Metropolitan Water District. DWR has thoroughly evaluated the best and most feasible repair options to address the seismic concerns at Perris Dam. The proposed repair plan includes upgrading the dam by replacing the foundation material and reinforcing it with a stability berm placed on top of the improved foundation. This will allow the lake to return to its previous maximum operating pool elevation after construction. Other aspects of the proposed plan include a new outlet tower and emergency outlet release facilities. |
| Desert Edge Geothermal Water Conservation and Preservation | Riverside County, Supervisor Benoit | Construction Project | A sewer system extension from a planned wastewater facility near Mountain View Avenue/Varner Road to Desert Edge east along 18th Avenue would meet the immediate needs for wastewater removal. A sewer system will prevent groundwater contamination from septic systems, leach lines and commercial/industrial runoff into the ground. Groundwater contamination poses a significant health threat to the community of Desert Edge, and seasonal/recreational visitors. Lack of sewer system prevents improvements to existing mobile home and recreational vehicle parks and proposed developments, and thus, has hindered the economy.<br><br>The community is disadvantaged by age, health and income and lack of economic viability as a result of limitations placed on proposed development and existing facilities that are inadequate. Many facilities are in dire need of improvements to meet a basic standard for quality of life of disenfranchised and retired persons. |
| College Of the Desert MTC Infrastructure | College of the Desert | Construction Project | Temporary utilities are available and close by. However, this is an issue, according to CVWD. CVWD has a policy that requires any temporary utilities to be installed for only 1 year. If at the expiration of one year, permanent utilities are not installed, CVWD will step in and install the permanent utilities. I asked if we could negotiate the 1 year time line and was told no ? this is policy.<br><br>We will connect to water in a 18? line down the middle of Buchanan. However, if there is possibility that Panorama will start the road and street infrastructure before we have our first permanent building ready, and permanent utilities will not be in until at least 2009. We have much to do just for the logistics of timing and interaction among all the developers putting in their developments and infrastructure while we?re between interim and permanent facilities. |
| Desert Hot Springs Community Gardens | Mission Springs Water District | Conservation | Build raised beds for one community garden location and install irrigation equipment needed for each plot in the garden; construct demonstration area in which to teach about soils, irrigation techniques, mulch, plant selection.<br><br>The City will provide the location and the Toro Company has interest in providing and installing the irrigation equipment. MSWD will provide education programs and oversee construction of the raised beds.<br><br>The emphasis is on organic gardening and sustainable techniques and water use. |
| Identification of Septic Wastewater Plumes in the MSWD Service Area | Mission Springs Water District | Planning | Investigate the transport of septic wastewater at key sites. Study rate of wastewater movement and changes in concentration of selected contaminants with depth in the unsaturated zone and the saturated zone to be monitored at each site. |
| Mission Creek/ Garnet Hill Subbasins Monitoring Program | Mission Springs Water District | Planning | Improve the understanding of local hydrologic and geologic conditions, especially with respect to overdraft conditions in the Mission Creek and Garnet Hill Subbasins and artificial recharge of the subbasins. |
| DMMs for CVRWMG Partners | CVRWMG | | Seeking funding to support a range of programs supporting the DMMs in the various partner agencies' Urban Water Management Plans. May include such programs as plumbing retrofits, smart controller rebates, water efficient fixture rebates, ULFT rebates, education programs and more. |
| Coachella Valley Groundwater Model | Indio Water Authority | Planning | The proposed project would build upon the existing groundwater model developed by CVWD. The work would:<br><br>1) Enhance the current knowledge of hydrogeology,<br>2) Compile reliable data describing hydrogeologic properties, groundwater recharge, groundwater pumpage, and groundwater discharge to evapotranspiration,<br>3) Improve model calibration methods, and<br>4) Improve model verification methods. |

| Project Title | Organization | Project Type | Project Description |
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| South Mecca Plan | South Mecca Group | Conceptual Design | The Project will accommodate future logical development activity in the Mecca area. Several years ago the County of Riverside was engaged in a process to update its general plan to reflect future development needs. That effort was stalled due to the County's lack of funding. Notwithstanding, the land owners in the immediate vicinity of Mecca have participated in all community planning activities and expect that any future expansions of the Mecca community would include those adjacent parcels. This objective is further supported by the recent and future capital investments made by the County, including the new library, fire station, commercial center, the soon to be constructed boys and girls club and the future grade separation at 66th street, allowing residents of Mecca to travel safely over the railroad tracks on their way to the new K-12 school at 66th and Tyler. |
| Desert Cahuilla Wetlands Expansion | Tribal Government | Conservation | We will increase the size of the wetlands by building 100 acre cells. These cells will be shallow (no more than 3 feet deep. Fresh (White Water Storm Channel) and Salt Water (from the Salton Sea) will be used to maintain this project. We will build the project using the natural materials and not importing new materials. We will build on land that the sea has already receeded from.<br><br>This project is consistant with the States plan for shallow habitat complexes as described in the planning documents of Salton Sea Restoration. |
| Update of the Coachella Valley Salt and Nutrient Management Plan -- Regional Project of CVRWMG | CVRWMG | Planning | The project will include the development of updates to the Coachella Valley Salt and Nutrient Management Plan (SNMP) in response to the Recycled Water Policy amendments, including:<br><br>1. Update the constituents of concern and management zones to be addressed with stakeholders.<br>2. Coordinate with the Colorado River Basin Regional Water Quality Control Board (RWQCB) to address specific findings and recommendations for what may need to be included or modified for the Coachella Valley SNMP to be accepted.<br>3. Update the regulatory framework to reflect relevant changes, including the amendments to the Recycled Water Policy.<br>4. Update the evaluation of existing beneficial uses of water quality criteria and objective to protect these beneficial uses.<br>5. Collect, aggregate, and analyze water quality data collected since the submittal of the Coachella Valley SNMP to update the ambient water quality analysis and beneficial uses of groundwater.<br>6. Update calculations of assimilative capacity, future water quality projections, and anti-degradation analysis.<br>7. Update the management strategies, monitoring plan, and remaining data gaps.<br>8. Coordinate stakeholder meetings at various key stages of the Coachella Valley SNMP development.<br>9. Develop the updated Coachella Valley SNMP for submission to the Colorado River Basin RWQCB. |
| Palm Springs Line 43 and 43a | RCFC&WCD | Construction Project | This underground stormdrain will extend from the existing West Cathedral Canyon Channel west to East Palm Canyon Boulevard (HWY 111) then northwest in East Palm Canyon Boulevard to Via Capri Street then southwest approximately 600 feet to the outlet of the future Eagle Canyon Dam. |
| Pierce Community Infrastructure - Sewer Sanitary Collection System (North) | Pueblo Unido CDC | Construction Project | Funding for the proposed project will cover construction costs to provide sewer sanitary collection system to existing mobile home parks in the vicinity and address the substandard septic systems, and sewage lagoons.<br>Construcion:<br>1. 2,640 feet of 8-inch gravity sewer line from Oasis Park easterly along Avenue 70 to Pierce Street<br>2. 5,270 feet of 12-inch gravity sewer from the intersection at Avenue 70 and Pierce Street northerly along Pierce Street to Avenue 68, connect to Polancos and Duro mobile home parks at Avenue 68<br>3. Sewage lift station at the northeast corner of Avenue 68 and Pierce Street<br>4. 5,200 feet of 6-inch sewer force main from the lift station northerly along Pierce Street to Avenue 66<br>5. 1,000 feet of sewage force main from Pierce Street and Avenue 66 to CVWD?s 10-inch force main at the Coachella Valley Stormwater Channel. The existing force main will transfer the sewage to WRP-4 |
| Torres Martinez Septic to Sewer Conversion Project | Torres Martinez DCI | Construction Project | The homes will be hooked up to an existing water line provided by Coachella Valley Water District at the Avenue 62 water trunk. This water is filtered and blended. This project will eliminate virtually raw Colorado River water into the homes. Because it is sitting on a recharge site, there is no way to eliminate the contaminates. The ammonium perchlorate was recently tested and the results were at 6.9 ppb exceeding California State Standards. |
| Torres Martinez Sewer Extension Project Avenue 64 | Torres Martinez DCI | Construction Project | This project will take 30 homes off of septic tanks that have regular failures and hook them up to a reliable sewage line operated by the Coachella Valley Water District. This is crucial because these homes are located at the head of the watershed to the valley where CVWD has a recharge project that supplies the lower valley drinking water, agricultural water and commercial usage.<br><br>This project would be located entirely on Torres-Martinez tribal lands, and would serve tribal members. |

| Project Title | Organization | Project Type | Project Description |
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| Recycled Water Feasibility Study | City of Coachella Water Authority | Feasibility Study | Project Description: The project will include development of a recycled water feasibility study, including: 1. Define the existing and projected quantities of secondary effluent available for tertiary treatment and recycling over a 25 year time horizon. 2. Define the study area and conduct a recycled water market assessment which defines potential recycled water users, quantifies estimated demand for those users, summarizes water quality needs, and accounts for on-site retrofits. 3. Describe the latest regulatory framework governed by State mandates and laws concerning recycled water. 4. Develop a plan for low-demand, wet season discharge planning which provides for storage and/or reliable year-round disposal of tertiary effluent. 5. Develop and compare alternatives for tertiary treatment technologies to implement at the existing Avenue 54 Wastewater Treatment Plant. 6. Short-list viable alternatives which represent various combinations of treatment and recycled water distribution for use within CWA?s service area and outside CWA?s service area. 7. Document an alternatives selection process in which a preferred alternative is identified. 8. Describe the facilities required for the preferred alternative and develop a timeline for installation of the new facilities. 9. Prepare a capital and life-cycle cost estimate for the preferred alternative. 10. Delineate necessary environmental documentation, interagency agreements, operating permits, market assurances, and financing requirements. |
| City of Coachella Stormwater Master Plan | City of Coachella Water Authority | Planning | The project will include development of a stormwater master plan, including: 1. Summary of existing storm water management system, storm drain gravity and pumping network, and synopsis of existing problems with flooding. 2. Stormwater runoff and flood routing hydraulic analysis to identify existing system deficiencies. 3. Development of storwater conveyance, pumping, and detention alternatives to correct system deficiencies; development of a stormwater BMP (including stormwater quality) program to complement permanent facilities 4. Identification of preferred alternative based on cost and non-economic factors. 5. Prepare capital and life cycle cost estimates for the preferred alternative. 6. Prepare a schedule for the various implementation phases of the preferred alternative. 7. Summarize potentially available funding sources. |
| Surface Water Treatment Study | City of Coachella Water Authority | Feasibility Study | This project will include development of a Surface Water Treatment Study, including: 1. Tabulate the current and projected City-wide potable water demands and supplies over a 30-40 year time horizon. 2. Perform a source water characterization of Canal water delineating water quality and treatability characteristics. 3. Develop siting and process alternatives for a water treatment plant. 4. Evaluate alternatives based on economic and non-economic factors and select preferred alternative. 5. Develop projected capital and life-cycle costs for the preferred alternative. 6. Prepare capital improvements and phasing plan for water treatment plant and future expansion of City water distribution system. |
| Short Term Arsenic Treatment Program | Pueblo Unido | Construction Project | The CVATP envisions short term projects and long term connection projects. The long term connection projects are presented in other projects entered into the database. This project description focuses on short term projects primarily point of entry and point of use treatment for arsenic. These systems also reduce hardness, nitrates and other contaminants, if present. These systems have been implemented in the Coachella Valley; they are effective and have low operating costs. These systems are most appropriate for areas that will not be connected to municipal supply in the next 5 years. Further evaluation in the work plan will evaluate the locations, timing and type of system.<br>Pueblo Unido CDC will be coordinating the development and implementation of this program under its existing Agricultural Worker Housing Rehabilitation Program (AWHRP). AWHRP provides technical assistance and training to farmworker and low-income families to improve the existing infrastructure and bring the Polanco parks up to Riverside Code compliance. The scope of the work includes engineering redesign, redevelopment of domestic water distribution, fire suppression, waste water and electrical system, and road improvements. Additionally, the program has training and education component that consists of helping farmworker families understand the proper monitoring of the quality of the water and functioning of decentralized wastewater systems. The proposed CVATP will be an outstanding resource and it will effectively fit -as a critical component- of the AWHRP. AWHRP examples of currently redevelopment projects include St. Anthony of the Desert that is effectively operating 1500 gallons per day point-of-entry, and three Polanco parks that will require point-of-use systems. |

| Project Title | Organization | Project Type | Project Description |
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| Drinking Water Hexavalent Chromium Removal Demonstration Facilities | Coachella Valley Water District | Construction Project | This project would use the results of ongoing bench and pilot Cr6 removal tests to identify the best available technology for meeting the Cr6 drinking water MCL for variable water quality conditions found in Coachella Valley groundwater sources. Five representative sources would be identified based on regional water quality differences. Environmental assessments and design work would be completed for each site. Cr6 removal facilities would be constructed at each site to demonstrate effective Cr6 removal and supply potable drinking water to local communities.<br><br>Technologies currently under assessment as part of Water Research Foundation Project #4445 include reduction coagulation filtration (RCF), weak-base anion exchange (WBA), absorption, and strong-base anion exchange (SBA). Different technologies may be needed at representative community water system sources in the Coachella Valley due to the impact of variable water quality characteristics on technology effectiveness. Waste management considerations at each representative site are an important driver in technology selection and developing an effective Cr6 compliance plan.<br><br>CVWD has constructed three full-scale facilities to remove naturally occurring arsenic from groundwater in the eastern Thermal subarea within the Coachella Valley. These facilities are also effective at removing Cr6 from the unique water quality conditions occurring in this area. Experience gained implementing this arsenic compliance strategy will benefit the project. |
| Sunbird Mobile Home Park Septic to Sewer Conversion | Coachella Valley Water District | Construction Project | The proposed project involves installing approximately 13,000 linear feet of 8-inch and 10-inch diamter gravity sewer pipeline and installing capacity upgrades to CVWD's existing Lift Station 55-21 to serve approximately 86 units and one community center. The proposed gravity sewer pipeline would extend from Sunbird Mobile Home Park, east along Echols Road, to Harrison Street. It would then continue south along Harrison Street to Avenue 66, continue east on Avenue 66 and connect to an existing sewer in Polk Street. The Polk Street sewer pipeline conveys flows to CVWD's lift station 55-21 then eventually to CVWD's Water Reclamation Plant 4 on Fillmore Street via an 18-inch diameter force main. The project will provide a permanent solution to reducing the amount of nitrates, bacteria, viruses and Total Dissolved Solids (TDS) migrating towards the aquifer, which is the source of the drinking water supply for the Coachella Valley region. This is a groundwater non-point source pollution reduction project providing sewer improvements in Thermal to protect drinking water in the Coachella Valley. |
| Irrigation Pipeline Replacements | Coachella Valley Water District | Conservation | The project involves replacing the following four irrigation pipeline sections to reduce leaks and wasteful irrigation practices:<br><br>1. Lateral No. 123.45-6.0, phase 2. Replace 1,320 feet of an existing 12-inch diameter concrete pipeline with a new 12-inch diameter polyvinyl chloride (PVC) pipeline. The irrigation pipeline begins 1,320 feet west of Harrison Street and extends north 1,320 feet.<br><br>2. Lateral No. 123.45-6.0, phase 3. Replace 1,350 feet of an existing 12-inch diameter concrete pipeline with a new 12-inch diameter polyvinyl chloride (PVC) pipeline. The irrigation pipeline connects to Lateral No. 123.45-6.0, phase 2 and extends east 1,350 feet to Harrison Street.<br><br>3. Lateral No. 102.3, phase 1. Replace 1,500 feet of an existing 20-inch diameter concrete pipeline with a new 24-inch diameter polyvinyl chloride (PVC) pipeline. The irrigation pipeline begins approximately 2,600 feet west of Fillmore Street and extends another 1,500 feet to the west along Avenue 52.<br><br>4. Lateral 102.3, phase 2. Replace 2,640 feet of an existing 16-inch diameter concrete pipeline with a new 12-inch diameter polyvinyl chloride (PVC) pipeline. The irrigation pipeline connects to Lateral 102.3-6.0, phase 1 and extends south another 2,640 feet. |
| Mid-Valley Pipeline, Phase 2 | Coachella Valley Water District | Construction Project | The Mid Valley Pipeline is a non-potable water distribution system designed to convey recycled water and Colorado River water to Golf Courses for irrigaion in lieu of groundwater. This is a multi-phase project estimated at a total cost of approximately $75 million. Phase 1 is complete and consists of a booster station at the Coachella Canal in Indio, approximately 7 miles of 54-inch pipeline along the Whitewater River Stormwater Channel, and 90 acre-feet of storage reservoirs at CVWD's Water Reclamation Plant No. 10 (WRP 10). Phase 1 pumps Colorado River water from the canal to the existing WRP 10 recycled water distribution system which serves 8 golf courses. Colorado River water augments the recycled water supply in summer months when golf course irrigation demand exceeds recycled water supply. Phase II is estimated to cost $2 million and consists of expanding CVWD's WRP 10 distribution system to serve 4 golf courses with an average demand of 1000 AFY each. Additional phases are proposed to be developed to ultimately connect up to 50 golf courses to the Mid-Valley Pipeline. |

| Project Title | Organization | Project Type | Project Description |
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| Little Tuscany Sewer Improvements | Palm Springs | Construction Project | Construction of 8" V.C.P. with 4" laterals up to property lines connecting to the City of Palm Springs public sewer system within the 70+ enclave of homes commonly referred to as "Little Tuscany", located on Milo Drive, Janis Drive, Vista Drive, Palermo Drive and Leonard Road. This residential subdivision of approximately 70 homes, located South of Racquet Club Road and West of N. Palm Canyon Drive on the lower portion of the Chino Cone is without a public sewer system. With many homes constructed 30 to 40 years ago, some septic tanks have failed, and given the rocky terrain, finding suitable replacement leach fields for septic systems can be difficult. Over the long term, impairment of groundwater quality exists due to the potential for septic systems to fail and wastewater to percolate into the water table. Installation of public sewers to these homes will allow the properties to connect directly to a publicly maintained sewer system. |
| Groundwater Quality Protection Project - Sub-Area D2 | Mission Springs Water District | Construction Project | Area D2 is part of a larger assessment district, which voters passed in 2004. In creating the Assessment District, voters provided $28 million of match funding which expires in 2014. Engineering design of the 10 sub areas that make up the assessment district is complete and funds are needed for construction. The project will abate septic systems and protect both the drinking water supplies and the hot water that is the basis of the spa economy for the city of DHS and the Coachella Valley. In some parts of the city, the septic tank density is 2.3 to 2.8 times the density recommended by the Regional Water Quality Control Board. |
| Shady Lane Sewer Improvement Project | City of Coachella Water Authority | Construction Project | Proposed sewer improvements include installation of approximately 3,300 linear feet of 8-inch diameter gravity sewer main, approximately 500 linear feet of 4-inch diameter force main, approximately 14 manholes, and 86 lateral service connections with a diameter of 4 inches. Wastewater will flow by gravity westerly in the community towards Shady Lane, and then northerly to south of 54th Avenue. A new manhole in Shady Lane immediately south of 54th Avenue will serve as a wet well for sewer pumps to lift the flow through a short force main to a new manhole installed in the existing sewer main in 54th Avenue.<br><br>Proposed water improvements include installation of approximately 1,650 linear feet of 8-inch CML&C Pipeline and Fittings(Chaparral Extension) water distribution line. Approximately two 8" gate valves, one Air Valves, Blowoffs, Fire Hydrant and Water Service Meter with Double Detector Check. |
| Non-Potable Water Use Expansion | Coachella Valley Water District | Construction Project | CVWD recently connected two farming groups to canal water for a total savings of almost 10,000 acre-feet per year. A third location of expansion of canal water delivery is the Oasis area which did not receive canal water when the original irrigation system was constructed by the Bureau of Reclamation. In addition, agriculture exists within the Cities of Coachella and Indio that could be converted from groundwater to canal water. |
| Groundwater Quality Protection Project | Mission Springs Water District | Construction Project | Areas A, G, H, I, J, and K are part of a larger assessment district, which voters passed in 2004. In creating the Assessment District, voters provided $28 million of match funding which expires in 2014. Engineering design of the 10 sub areas that make up the assessment district is complete and funds are needed for construction. The project will abate septic systems and protect both the drinking water supplies and the hot water that is the basis of the spa economy for the city of DHS and the Coachella Valley. In some parts of the city the septic tank density is 2.3 to 2.8 times the density recommended by the Regional Water Quality Control Board. |
| Coachella Water Authority Conservation Program | City of Coachella Water Authority | Conservation | The Coachella Water Conservation Program is designed to bring water conservation activities to an accessible level to a wide range of constituents throughout the region, through outreach, water audits, and various mechanisms to assist in implementation of water conservation methods. |
| Arsenic and Fluoride Wellhead Treatment/Removal Feasibility Study | City of Coachella Water Authority | Construction Project | Project involves development of a study as a byproduct of a regional wellhead treatment pilot program. |
| Replacement Well 42 | Mission Springs Water District | Construction Project | MSWD is experiencing uranium contamination in concentrations greater than 20 pCi/L in the northerly portions of its service area. As a result, Well 28, one of two wells servicing the 1400 Zone, was placed on standby due to elevated uranium concentration. Thus, the 1400 Zone currently does not have enough water supply to meet demand and no redundancies are in place. Therefore, MSWD proposes to construct a replacement well, Well 42, to provide water supply reliability and to replace lost capacity in the 1400 Zone.<br><br>The proposed project includes drilling and equipping (i.e. pumps, motors, piping, electrical, etc.) a new well, startup, and testing. MSWD owns the proposed Well 42 site and has already completed design; as such, the project is shovel ready. |
| Environmental Justice and Equity Through Water Pollution Prevention in Eastern Coachella Valley | The Esperanza Youth and Family Center | Planning | FALSE |

Coachella Valley IRWM Project List (as of December 14, 2018)

| Project Title | Organization | Project Type | Project Description |
|---|---|---|---|
| Little Morongo Regional Wastewater Treatment Plant | Mission Springs Water District | Conceptual Design | MSWD has identified a 2.3 square mile area, located off I-10 Freeway and Indian Canyon Drive, to be part of a new sewer assessment district in order to eliminate on-site sewer disposal systems and construction of a Regional Wastewater Treatment Plant. The creation of the Assessment District will provided future match funding to complete the proposed project and wastewater collection system. Feasibility studies has been completed for the RWWTP and the District is moving forward withj plant design.<br><br>The project will abate septic systems and protect both the drinking water supplies and the hot water that is the basis of the spa economy for the city of DHS and the Coachella Valley. In some parts of the city, the septic tank density is 2.3 to 2.8 times the density recommended by the Regional Water Quality Control Board. |
| 1. Project Title: Pierce Community Infrastructure - Sewer Sanitary Collection System (North) | Pueblo Unido CDC | Construction Project | Funding for the proposed project will cover construction costs to provide sewer sanitary collection system to existing mobile home parks in the vicinity and address the substandard septic systems, and sewage lagoons. Construcion: 1. 2,640 feet of 8-inch gravity sewer line from Oasis Park easterly along Avenue 70 to Pierce Street 2. 5,270 feet of 12-inch gravity sewer from the intersection at Avenue 70 and Pierce Street northerly along Pierce Street to Avenue 68, connect to Polancos and Duro mobile home parks at Avenue 68 3. Sewage lift station at the northeast corner of Avenue 68 and Pierce Street 4. 5,200 feet of 6-inch sewer force main from the lift station northerly along Pierce Street to Avenue 66 5. 1,000 feet of sewage force main from Pierce Street and Avenue 66 to CVWD?s 10-inch force main at the Coachella Valley Stormwater Channel. The existing force main will transfer the sewage to WRP-4 |
| San Antonio del Desierto - Sewer Sanitary Collection System Extension | Pueblo Unido CDC | Construction Project | The project proposes the installation of a gravity sewer pipeline, lift station and a sewer force main pipeline that will collect wastewater from the San Antonio del Desierto which population is about 700 people. The proposed project will provide sewer service to the residents and transfer the wastewater to the Coachella Valley Water District (CVWD) Water Reclamation Plant No. 4 (WRP-4). The proposed pipelines will be installed within the road rights-of-way along Lincoln Street. The gravity sewer pipeline begins at the San Antonio del Desierto & Lincoln Street and extends southerly to the intersection of Avenue 68 connecting to the proposed lift station on a half-acre site within the intersection of Lincoln Street and Avenue 68. A sewer force main pipeline will extend from the lift station northerly along Lincoln Street to Avenue 66 and connect to an existing 18-inch sewer force main pipeline, located at the intersection of Avenue 66 and Lincoln Street Pierce Street (east of the Coachella Valley Storm Water Channel) which ultimately connects to WRP-4. |
| Cathedral City South City Improvement District (SCID) Groundwater Protection Project | City of Cathedral City | Protection/Restoration | FALSE |
| Eastern Coachella Valley Septic to Sewer Conversions | Coachella Valley Water District | Construction Project | This project focuses on connecting mobile home parks to CVWD's sewer system in instances where it is determined that connections are technically and economically feasible. Conditions that lend to feasibility include, close proximity to existing infrastructure and the ability of mobile home park owners to fund private on-site costs of connection. |
| DWA Turf Buy Back | Desert Water Agency | Conservation | DWA will administer a program where we pay some of the cost of turf removal for customers who change to drought tolerant landscaping to help relieve the impacts of the drought. |
| Palm Springs Airport Turf Removal | Desert Water Agency | Conservation | This project would remove the turf around the airport and replace it with drought tolerant landscaping. |
| Coachella Water Authority Demonstration Garden | Coachella Water Authority | Conservation | The demonstration garden is designed to be an educational tool and role model for the community. The garden will showcase water-efficient landscaping and irrigation, and supports CWA's ongoing water conservation efforts and initiatives. The garden will feature different grades of synthetic turf, desert-friendly plants, and water-efficient irrigation systems such as drip lines and smart controllers. All trees, plants, and other materials will be selected to provide year-round color and be compatible with the existing soil type. The garden will be open to the public during normal working hours with self-guided tour materials available. In addition, guided tours may be scheduled. |
| Coachella Valley Golf Course Turf Reduction Program | Coachella Valley Water District | Conservation | It is estimated that removal of one acre of golf course turf saves 5 acre-feet of water annually (5 AFY). This project proposes to use $1.5 million in grant funding and 1.5 million in local funding to remove at least 100 acres of golf course turf. Thus, overdraft of the groundwater basin is reduced by 500 AFY and future reliance on the Delta is also reduced by 500 AFY. 500 AFY of water allotments at about $5,000 per acre-foot is a savings of $2.5 million so the benefit/cost ratio for this project is 2.5/1.5=1.7/1. |

| Project Title | Organization | Project Type | Project Description |
|---|---|---|---|
| Regional Wastewater Treatment Plant Tertiary Upgrade | Coachella Water Authority | | After tertiary treatment, effluent from the WWTP will meet California Code of Regulations, Title 22 requirements for unrestricted recycled water, and will be available for use as a new, lower cost irrigation supply for up to 600 acres of nearby agricultural property, or for other nonpotable uses like groundwater basin recharge.<br><br>The recycled water supply will offset a portion of the existing agricultural irrigation water demand and/or imported water used for groundwater recharge that is currently met with imported water delivered by CVWD via MWD exchange agreement, and local surface water diverted by CWA, and local irrigation wells.<br><br>Project generates over 3,100 acre feet of local water annually. |
| Avenue 54 Water Main Loop Between Harrison & Frederick | Coachella Water Authority | | FALSE |
| Indio Water Authority (IWA) Recycled Water Project Phase 1A | Indio Water Authority | Construction Project | Phase 1A of the IWA Recycled Water Project includes construction of 1) tertiary treatment facilities with a capacity of 4 mgd complying with Title 22 Standards for recycled irrigation water and 2) 14,900 ft of recycled water conveyance ranging in size from 18-inch to 30-inch.<br>The Phase 1A project will serve the Terra Lago Golf Club and Rancho Casa Blanco Country Club and HOA, delivering approximately 1,850 AFY in the near term. The project will also set the stage for future recycled water system expansion addressing both non-potable and potable water service in the long-term. |
| DAC Onsite Plumbing Retrofit Project | CVWD | Construction Project | This project is a regional residential rebate program that will provide rebates to DACs that have faulty or leaking onsite plumbing systems. The program would provide rebates to DACs to implement indoor plumbing retrofits to reduce water waste or to repair onsite plumbing systems that are leaking or damaged and therefore causing water quality issues.<br><br>The need for this project was identified by DAC stakeholders during the DAC Outreach Program, and was also explained and identified in the 2014 Coachella Valley IRWM Plan. |
| Shady Lane Mobilehome Park Water & Wastewater Systems Project | Shady Lane Mobilehome Park, Inc. | Construction Project | FALSE |
| Coachella Water Authority Turf Buy Back | Coachella Water Authority | Conservation | Data shows that residential customer spends about 60% of their water on outdoor irrigation. By changing turf to a yard of drought tolerant plants you can save water and money.<br><br>Coachella Water Authority will administer the turf buy back program that will increase turf removal response to Governor Edmund G Brown Jr.s emergency drought declaration. |
| Desert Willows Waterline Replacement | Mission Springs Water District | Conservation | FALSE |
| Chromium 6 Wellhead Treatment | Mission Springs Water District | Construction Project | FALSE |
| Automated Meter Reading Pilot Program | Mission Springs Water District | Conservation | MSWD will install 100 automated water meters with data collection systems. Each automated water meters combines the functions of a water meter, a valve controller, and a water delivery scheduler into one unit. These features give MSWD and the property owner the ability to track and monitor usage based on flow-time, flow-rate, and flow-volume, and detect leaks down to 1 gallon per hour. |
| DAC Septic Rehabilitation and Demand Reduction Program | Coachella Valley Water District | Construction Project | This project is regional, and would provide rebates to DACs located in mobile home park communities in the East Valley. The program would provide rebates to install greywater systems that would divert flows from washing machines to onsite irrigation systems. The greywater would be targeted to irrigate non-ornamental plants such as grass used for recreation and trees that can provide a source of food for the community, such as citrus trees.<br><br>This type of greywater system has already been implemented in the East Valley, and can be permitted per information from the County of Riverside Department of Environmental Health.<br><br>The ultimate purpose of this project is to offload a major source of wastewater to onsite septic systems, which will help to ensure the systems do not fail and present public health issues associated with surfacing wastewater. Furthermore, the project would encourage beneficial reuse of water that would otherwise flow to septic systems. Given the aquitard present within the East Valley, this water is not currently beneficially reused, because it would be retained within the shallow portion of the aquifer, which is not suitable for drinking.<br><br>As groundwater overdraft subsides in the East Valley, positive pressure has led to artesian conditions. Groundwater flows from artesian wells are generally not beneficially reused, but rather flow into the Coachella Valley Stormwater Channel and ultimately the Salton Sea. Artesian conditions and increasing levels of groundwater have the potential |

| Project Title | Organization | Project Type | Project Description |
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| Regional Well Retrofit and Abandonment Program | Coachella Valley Water District | | FALSE |
| Oasis Gardens Mobile Home Park: Connection Fee for Chromium 6 Contamination | Desert Empire Homes | Construction Project | The Oasis Gardens Mobile Home park was built by developer Bobby Melkesian where he utilized state funding to pay for affordable housing. The mobile home park met all county requirements and was built in what was previously an agricultural area. The land was used for dates for the previous ten years. When building the site, Bobby opted to drill a well to provide water to the residents. This route was utilized due to a lack of water infrastructure in the area. The well for the Oasis Gardens Mobile Home Park serves 157 low income families. Since this project, Bobby has built a neighboring park to provide housing to the relocated residence of Duroville. This new project is called the Mountain View Estates.<br><br>The Mountain View Estates is an important element to this project. The Mountain View Estates brought new water connections to the previously built park. Thus, the new option of connecting the homes to the CVWD line exists. However, the fees of $4,000.00 per home are too high for Bobby to afford. We are requesting $800,000.00 to pay for the connection fees and additional labor required (157x4,000=628,000 connection fee total)(800,000-628,000=172,000 additional labor).<br><br>The other option would be to put a filter on the existing |
| Oasis Gardens Mobile Home Park Septic To Sewer Conversion | Desert Empire Homes | Construction Project | The Oasis Gardens Mobile Home Park sits on 20 acres in the city of Thermal. The park was built in the early 2000's, and was originally built with large septic tanks. The septic tanks originally served all 157 families living in the park. However, 71 of the units have been converted to sewer through a CVWD grant program. These units are no longer a problem for the community, but the 86 unconverted tanks are. There are periodic malfunctions with the tanks that leave hazardous wastewater in the streets of the disadvantaged community. The malfunctions are primarily caused by excessive dumbing of lard and bacon grease down the garbage disposal. Additionally, there is heavy use of chemicals that kill the bacteria in the tanks.<br><br>The Oasis Gardens Mobile Home Park Septic Conversion Project will aim to convert the remaining 86 units in the park to sewer. There is already an existing sewer line that is running through the middle of the streets in Oasis Gardens. The scope of work for the project will simply be tying into the existing line. The farthest connection should be approximately 20' (feet). Upon completion of the project, the 157 families of the disadvantaged community will be served. |
| Thousand Palms Flood Control Project | Coachella Valley Water District | Construction Project | Design and construct a series of levees and channels to protect a portion of the Thousand Palms and North Cathedral City from flooding. The project will collect flows from the alluvial fans to the north and convey them to existing Sun City Palm Desert flood control system. The project will help to provide flood protection and maintain a sand transport system for the Coachella Valley Fringe-Toed Lizard Preserve. |
| North Cathedral City Storm Water Master Plan | Coachella Valley Water District | Construction Project | Prepare design plans, specifications, and environmental documentation to construct Phase I of the North Cathedral City Storm Water Master Plan (SMP). The scope includes the design and construction of improvements to convey a portion of the 100-Year Flood from the Morongo Wash south of Interstate 10 to the Whitewater River Storm Water Channel. The design and construction of the Phase I of the SMP plan will provide protection to existing development in Northern Cathedral City from the 100-Year Flood, including a portion of riverine flows currently conveyed to Thousand Palms. The construction of the project will also provide biological benefits through improved wildlife connectivity and sand transport between the Willow Hole and Whitewater Floodplain Conservation Areas. |
| East Side Dike Improvement Project - Phase I | Coachella Valley Water District | Conceptual Design | Engage a consultant to prepare levee mitigation plans, and a contractor to construct the identified improvements, to certify the East Side Dike (Dike) from Dune Palms Road to Interstate 10 to the standards of the Federal Emergency Management Agency (FEMA) as a regional stormwater facility. Certifying the Dike will help ensure compliance with FEMA's 100-Year Flood design standard by providing flood protection to adjacent developments. It also helps to remove existing developments or land areas from special flood hazard areas. |

| Project Title | Organization | Project Type | Project Description |
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| CVWD Palm Desert Demonstration Garden | Coachella Valley Water District | Conservation | The design of the Palm Desert Operations demonstration garden will display the most water efficient irrigation systems, various ground covers, provide examples of maintaining challenging slopes and microclimates as well as encourage the selection of current desert friendly varieties of plant material reflecting the most recent edition of our Lush and Efficient book. The design proposal includes redesigned parking for our disabled customers as well as ADA compliant ramps for inclusion of all visitors. The centrally located garden will provide an excellent educational space for self-guided and group tours. The potential design will provide an area so that CVWD sponsored presentations, such as our educational workshops would have the ability to provide real time demonstrations of topics such as pruning, vegetable gardening, selecting desert plants and irrigation zones. The incorporation of technology is proposed into the garden via a web/phone app. interface that will allow visitors to be able to look up in real time plant species, rock types and irrigation elements by simply downloading our app and scanning an identification marker. |
| Trash Capture Systems | City of Indio | | This project would install full capture trash devices in the MS4 system. These devices are designed to work in the storm drain inlets to capture trash before it enters the MS4 system. The devices capture trash particles down to 5mm. Funding would be used for purchase and installation of devices.<br><br>The State Water Board identified trash as a significant pollutant in California Waterways because trash harms aquatic life, wildlife and public health. Trash often enters the environment through the MS4 systems when it is washed into storm drain inlets during rain events. The State Water Board adopted the Trash Amendments on April 7, 2015 and funding would accelerate installation of the devices and more efficiently support the goals. |
| Maxwell Installation | City of Indio | Construction Project | This project is designed to address urban run off and flooding. The project involves the construction of maxwell systems on the north side of Avenue 48 between Monroe Street and Arabia Street. The maxwells will capture storm water run off and direct it into the ground which supports using storm water as a resource. This will reduce flooding while retaining the flood water within the watershed. This project supports low impact development and groundwater recharge. The City of Indio requires stormwater infiltration through an ordinance and maintains current engineering plans for maxwells, dry wells and other low impact development structures. |

| Project Title | Organization | Project Type | Project Description |
|---|---|---|---|
| White Water Channel Extension to Connect with Current Salton Sea Water Level | Torres Martinez Desert Cahuilla | Construction Project | The Torres Martinez Desert Cahuilla Indians will build a connection between the White Water Channel and the current Salton Sea water level. The Tribe will begin project by procuring an Archeologist Consultant to complete required Environmental Studies. Afterward, the Tribe will procure an Engineer Consultant to finalize Engineering Design. Once the Environmental Report and Engineering Design are complete, the Tribe will construct the proposed Channel modification connection. The Tribe will secure a general contractor through its procurement process and will lease necessary heavy equipment to facilitate excavation and construction. The Tribe anticipates completing construction by Month 12 of the project period. This project will be under the supervision of the Natural Resources Manager (NRM).<br><br>1. TASK 1 - Complete Environmental Report and Engineering Design by Month 6<br>1.1 NRM will prepare Scope of Work to initiate RFP<br>1.2 Contract Coordinator will issue RFP<br>1.3 Procurement will facilitate Vendor selection<br>1.4 Approved Contract (Deliverable)<br>1.5 Consultant begins Environmental Study/Report<br>1.6 Consult with Tribal MLD<br>1.7 On-Call Cultural Monitors will be brought in as necessary<br>1.8 Consultant will complete Environmental Report (Deliverable)<br>1.9 Consultant will begin Engineering Design<br>1.10 Consultant will complete Engineering Design (Deliverable)<br><br>2. TASK 2 - Complete construction of proposed Channel Modification by Month 12<br>2.1 NRM will submit Scope of Work to Procurement to procure general contractor for construction of Channel Modification<br>2.2 Contract Coordinator will issue RFP<br>2.3 Procurement will facilitate selection of vendor<br>2.4 Approved contract (Deliverable)<br>2.5 Blessing by Tribal Elder to begin construction<br>2.6 NRM will oversee beginning of construction<br>2.7 Completion of construction<br>2.8 Blessing of Completion - Gathering and Refreshments<br><br>The Tribe will coordinate invoicing with IRWMP. It will also submit quarterly reports to the Tribe as per Tribal po |
| St. Anthony Storm Water Capture Project | Pueblo Unido CDC | Construction Project | St. Anthony is a mobile home park community that provides affordable housing to farmworkers and low-income families. The project is a 32-acre parcel located south west of Highway 111, east of Lincoln Street and north of Avenue 68 in the unincorporated community of Mecca, Riverside County.<br>In 2010, Pueblo Unido CDC (PUCDC) started a comprehensive rehabilitation program to address substandard conditions, and code violations at the park. To date, major infrastructure improvements have been achieved in this community including, electrical stabilization, access to drinking water, off-site access roads; and the construction of the off-site sewer sanitation collection system to the site is scheduled to start in April 2018. A key element of this success is PUCDC's outreach and organizing experience that has enable community members to be involved in the planning and supporting of this community development endeavor. Furthermore, the support and partnership with other local, state and federal agencies, as well with private foundations have made these improvements a reality. |
| Coachella Monitoring Well Application and Project Study | Coachella Water Authority | Construction Project | By implementing this Project, the Authority intends to move depth to groundwater measurements from a monitoring system reliant upon dedicated monitoring wells. This effort will drastically improve the reliability and constancy of depth to groundwater readings. Per the Authority WMP this effort will increase the ability to have reliable data to make water management decisions including groundwater recharge efforts and surface water deliveries. All of these efforts are to decrease the depletion of groundwater overdraft within the Authority. |
| Improvements for Existing Dry Well Located South of 52 Ave. | City of Coachella | Protection/Restoration | The drywell will intercept and pretreat contaminants like suspended solids and improve surface water quality of the CVSC. California is in a severe drought<br><br>Legislation is calling for:<br>–Water reuse<br>– Treating stormwater as a resource<br><br>Improving the infiltration field of the Avenue 52 drywell will assist with reducing localized flooding and convey Stormwater away from property to the Coachella Valley Storm Channel |

| Project Title | Organization | Project Type | Project Description |
|---|---|---|---|
| Storm Water Conveyance System 1 | City fo Indio | | The area at 48th Avenue and Hjorth street experiences flooding problems during rain events. A storm water conveyance system is needed to alleviate the flood problems. This project would address the problems through the installation of a storm water conveyance system to move the water from the area before it floods. The project consists of storm drain inlets and associated piping. |
| Revitalize 20 existing dry wells | City of Indio | | The City of Indio has worked to infiltrate storm water for many years. There are at least 20 dry wells used for infiltration that are 30 years old. Over time, these devices become inefficient and ineffective so they must be revitalized. This project would revitalize 20 existing dry wells that are at least 30 years old with new maxwells. These would allow the devices to effectively address urban run off and flooding. |
| Storm Water Conveyance System 2 | City of Indio | | A large portion of south east Indio drains to the area where Van Buren and Cabazon are in close proximity. Storm water floods these areas and has threatened property. This project would direct the stormwater from Van Buren Street to Cabazon to the intersection of Cabazon and Dillon Road. This would reduce flooding, manage urban run off and protect property. The project includes construction of storm drain inlets and associated piping. |
| Jackson and Avenue 50 Retention Pond with Maxwells | City of Indio | | This is a low impact development project that consists of construction of a storm water retention pond and includes maxwells for efficient infiltration. The project will manage storm water as a resource and keep the water within the watershed. The project manages urban run off, reduces flooding and directs the storm water into the groundwater basin. |
| Storm Water Conveyance System 3 | City of Indio | | This is a significant storm water conveyance project that would manage urban run off and reduce flooding. In addition, this project is a "backbone" for several smaller storm water conveyance projects would eventually be connected to this in order to manage urban run off in smaller more specific areas. This project would begin at Dr. Carreon and Arabia Street east to Dr. Carreon and Van Buren Street north following Van Buren connecting to Indio Boulevard and outlet to the storm channel. This project consists of inlets and associated piping. |
| Pierce Community Storm Water Project | Pueblo Unido CDC | Planning | Pierce Street Community is a DAC project geared towards the implementation of Storm Water Control in the vicinity. Residents have experience major flood events along Pierce Street where adequate flood control and storm water capture system is lacking. Flood control has been identified as one of the top priorities by the community. |
| Avenue 76 Community Storm Water Control Project | Pueblo Unido CDC | Planning | The proposed project is to provide storm water control service to an existing large rural cluster that consist of single dwelling units, Polanco parks and Oasis mobile home park located in the Torres Martinez Desert Cahuilla Indians Reservation. Additionally, this area is served by Centro Medico Oasis, Community Park, and a small grocery store. The target community consists of agricultural workers and low-income families.<br><br>It is estimated that the storm water control project will provide service to an approximate 194 units with a population of 1,300 residents. The average combined population per mobile home is 6.76. This population data was provided by the United States Environmental Protection Agency (USEPA). |
| Avenue 48 Storm Drain | City of Indio | | This is a construction project to manage urban run off and flooding. The project consists of installing inlets and piping to convey storm water from an area that floods during rain events to the Coachella Valley Storm Channel. The projects starts at Avenue 48 at Las Brisas Way and extends west to Avenue 48 and Jefferson then north to the Coachella Valley Storm Channel. |
| Desert Hot Springs MDP Line E-5 Stg 1 | Riverside County Flood Control and Water Conservation District | Construction Project | This project will reduce flooding along 8th Street between Mesquite Avenue and West Drive. Approximately 3,700 lineal feet of underground storm drain will be constructed along 8th Street beginning at District's existing Line E channel near West Drive with upstream end near Mesquite Avenue. |
| Implementation of the Palm Springs MDP | Riverside County Flood Control and Water Conservation District | Planning | The plan consists primarily of a network of underground storm drains and several open channels. Also included in the plan are 4 retention basins and a combination debris-detention dam. The proposed system will carry storm runoff through the community to outlet into either the Whitewater River, Chino Canyon Channel, Tahquitz Creek, Palm Canyon Wash or Cathedral Canyon Channel. |

| Project Title | Organization | Project Type | Project Description |
|---|---|---|---|
| Hexavalent Chromium Compliance Program | Mission Springs Water District | Construction Project | MSWD investigated several available compliance methods and well head treatment proved to be the best option for their operations. Further, based on a demonstration project conducted by CVWD at wells within the Mission Creek subbasin, with similar constituents of concern as MSWD's wells, along with MSWD's own investigation, it was determined that stannous chloride (SnCl2) wellhead treatment would be optimal. CVWD's demonstration project used low impact wellhead treatment that proved to be easily adaptable to existing well systems and at a low capital cost. Therefore, MSWD will install hexavalent chromium wellhead treatment with stannous chloride (SnCl2) at potentially seven (7) existing production wells, depending on the new MCL adopted by the State Water Board.<br><br>The project will include construction of wellhead treatment within existing well sites. The treatment systems will generally consist of chemical feed pumps, injection equipment, chemical housing/storage, chemicals (i.e. stannous chloride (SnCl2)), piping, sampling station, and data acquisition and monitoring devices. No additional well upgrades are anticipates since the proposed wellhead treatment does not place additional hydraulic head on existing systems. |
| Groundwater Quality Protection Project - Sub Areas H & I | Mission Springs Water District | Construction Project | Areas A, G, H, I, and K are part of a large Assessment District 18 currently in progress to begin the process of converting areas from a septic system to a sewer system. If Assessment District 18 is approved, voters will provide $12 million of match funding to complete these improvements. This application focuses on Sub Areas H and I and its construction to connect 676 parcels to the MSWD sewer system and abate over 458 on-site septic systems. Engineering design and CEQA for Sub Areas H and I are underway and are expected to be completed April 2019. This project will protect both the drinking water supplies and the hot water that is the basis of the spa economy for the City of Desert Hot Springs and the Coachella Valley. |
| Recycled Water and Groundwater Recharge Project - Phase I | Mission Springs Water District | Construction Project | This project consists of adding tertiary treatment facilities at the WVWRF with off-site groundwater recharge facilities approximately 2.5 miles north at a MSWD owned 80 acre parcel. This parcel is located on 14th Avenue between North Indian Canyon Drive and Little Morongo Road and adjacent to Mission Creek.<br><br>Tertiary treatment will include either sand or cloth filters and a secondary effluent pump station to pump effluent to the new tertiary filters and disinfection system. In addition, an effluent pump station and recycled water storage tank will also be needed to provide recycled water transmission. The transmission pipeline and pump station will be constructed to convey the flows from the WVWRF to the groundwater recharge site.<br><br>The proposed recharge basin is adjacent to Mission Creek and can be used to divert and recharge stormwater runoff, reducing peak storm flows to downstream areas. |
| Denitrification Upgrade at Horton Wastewater Treatment Plant | Mission Springs Water District | Construction Project | In 2015, MSWD completed a technical memorandum for the HWWTP Expansion No. 5. The objective was to provide MSWD with a summary of the requirements to update and redesign the 2008 Expansion No.5 project based on the current conditions that exist at the HWWTP. As part of that process, MSWD held discussions with the RWQCB about the possible upgrade and expansion; in which, the RWQCB expressed concerns about possible negative impacts of nitrogen on the local groundwater quality. Further, they made it clear that in the absence of a study, any expansion to the HWWTP would trigger a new requirement to remove Nitrates and Total Nitrogen to effluent levels below 10 mg/L.<br><br>While the HWWTP Expansion No. 5 is still planned for the future, MSWD desires to add the necessary treatment processes to reduce Nitrates and Total Nitrogen in the effluent waters now to address the concerns of the RWQCB and to ensure any potential long-term impacts to the groundwater aquifer are eliminated. |
| Groundwater Quality Protection Project - Sub Area M2 | Mission Springs Water District | Construction Project | Area M2 is part of Assessment District 15, approved by voters in 2017, system to a sewer system. Assessment District 15 will provide $5.2 million of match funding to complete these improvements. This application focuses on Sub Area M2 and its construction to connect 695 parcels to the MSWD sewer system and abate over 405 on-site septic systems. Engineering design and CEQA for Sub Area M2 is complete. This project will protect both the drinking water supplies and the hot water hat is the basis of the spa economy frot he City of desert Hot Springs and the Coachella Valley. |
| Coachella Valley Golf Course Lake Lining Rebate Program | Coachella Valley Water District | Conservation | Golf courses irrigate their areas with the use of lakes. The lakes serve as reservoirs for the irrigation systems. Many courses have lakes that were built decades ago and as such now leak and/or seep water. Many representatives in the Golf and Water Task Force have indicated that they have an interest in lining their lakes, however doing so is cost prohibitive.<br><br>The Coachella Valley Golf Course Lake Lining Rebate Program will operate along the same parameters of CVWD's existing Golf Course Turf Rebate program. Through the use of grant funding, CVWD would offer a rebate of up to 50% of the cost to reline a lake. |

Coachella Valley IRWM Project List (as of December 14, 2018)

| Project Title | Organization | Project Type | Project Description |
|---|---|---|---|
| Groundwater Quality Protection Project - Sub Area M2-1 | Mission Springs Water District | Construction Project | Area M2-1 is part of Assessment District 15, approved by voters in 2017, system to a sewer system. Assessment District 15 will provide $1.95 million of match funding to complete these improvements. This application focuses on Sub Area M2-1 and its construction to connect 318 parcels to the MSWD sewer system and abate 182 on-site septic systems. Engineering design and CEQA for Sub Area M2-1 is complete, and the project is shovel ready. This project will protect both the drinking water supplies and the hot water that is the basis of the spa economy for the City of Desert Hot Springs and the Coachella Valley. |
| Enhancement of Coachella Valley Groundwater Monitoring | CVRWMG | Construction Project | This project would identify and prioritize areas in the Coachella Valley Groundwater Basin that are in need of dedicated monitoring wells. Three multi-cased monitoring wells will be installed to enhance groundwater monitoring. Each well will contain 3 wells casings installed to different depths to monitor depth specific layers of the groundwater basin. |

# Appendix VI-I: Integrated Flood Management Planning Study

This appendix includes the draft report from the Integrated Flood Management Planning Study conducted as part of the 2014 Coachella Valley IRWM Plan update process.

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# COACHELLA VALLEY

# INTEGRATED FLOOD MANAGEMENT PLANNING STUDY

# FINAL

January 2014

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# 1 Introduction

## 1.1 Background

The Coachella Valley Integrated Regional Water Management (IRWM) region has the potential to experience flooding problems because of the physical features of the area and metrological conditions, which can result in significant losses and economic damages. The desert is conducive to flooding due to unique soil and topography characteristics, winter and summer rainy seasons, and numerous natural washes and channels. During a rainstorm, the normally dry waterways can quickly become raging rivers causing widespread overland flooding when unchecked. The topographic characteristics, as well as the extreme rainfall events for the Coachella Valley, can result in generating floodplain conditions which dominate the existing flood hazards. Figure 1-1 shows the topography of the region.

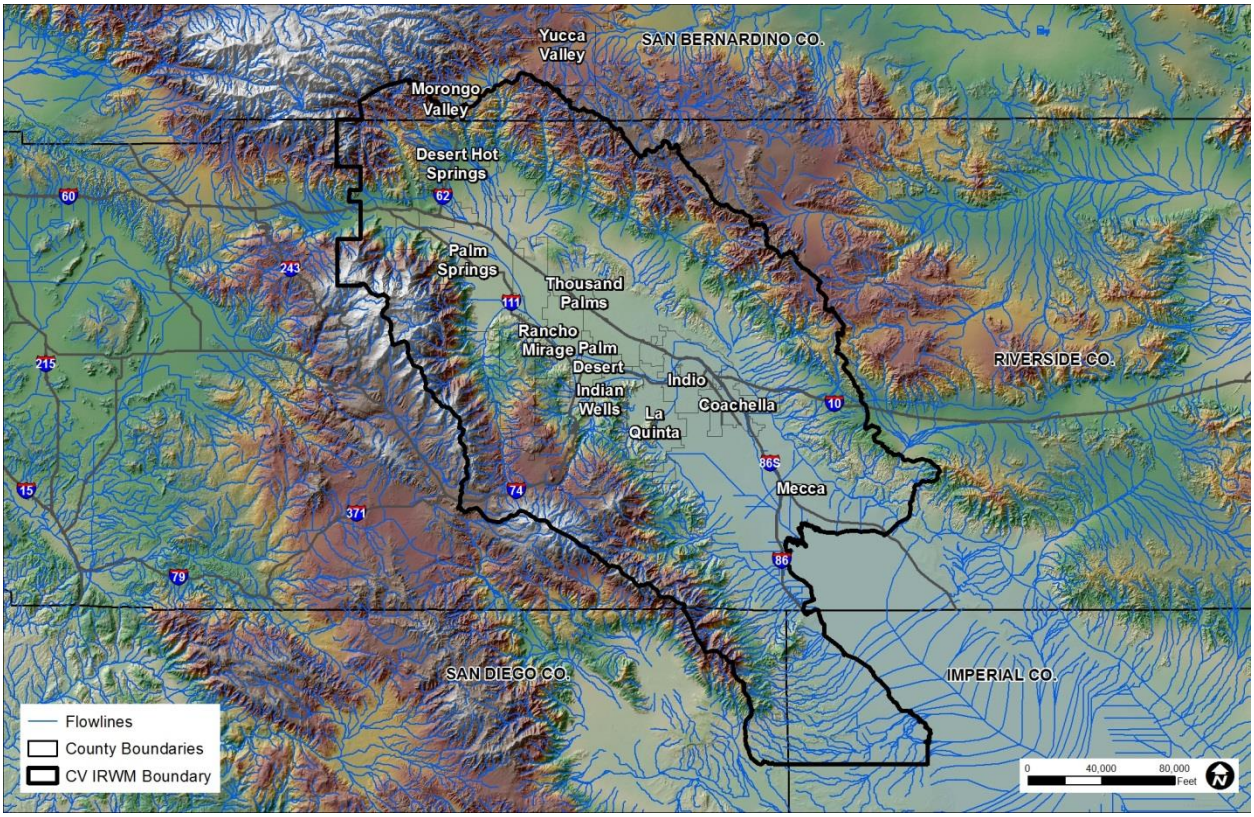


**Figure 1-1: Coachella Valley IRWM regional drainage patterns and hydrography**

From a meteorological perspective, the occasional high intensity thunderstorms and tropical rainfall events can develop a flashy response from the tributary mountainous watersheds resulting in flash flooding. In addition, the Coachella Valley is surrounded by rugged mountainous watersheds and mouths of steep canyons that have resulted in the formation of numerous alluvial fans. The alluvial fan is one of the primary physiographic features which dominates the flooding

conditions. Regional flood hazards can generally be divided between the (1) alluvial fan and (2) valley floor area, which carries large amounts of debris and sediment as well as unconfined flood flows which undergo unpredictable changes in direction. These physical characteristics, combined with the intense rainfall events, generate flood hazards that are different from conventional riverine floodplains.

Effective floodplain management planning and mitigation of flood hazards is extremely complex with multiple issues and different watershed responses. The Coachella Valley region is comprised of multiple regional watershed units which are unique in their hydrologic responses, as well as their floodplain functions, which lend the flood management planning assessments to a watershed approach. However, flood and stormwater runoff generated from watersheds can also represent a valuable water resource that can be managed successfully, rather than just being typically viewed as a hazard. This *Integrated Flood Management Planning Study* (IFM Study) has been prepared as a companion document to support the addition of multi-benefit floodplain management into the *Coachella Valley Integrated Regional Water Management (IRWM) Plan Update* as a key water resource element in regional water planning. There is not a one size fits all solution, but comprehensive planning is required on a watershed basis to develop an implementable system-wide answer. Integrated Flood Management (IFM) combines land and water resources development in a floodplain, with a view to maximize the efficient use of the floodplains and minimize loss of property and life.

This IFM Study is not a traditional watershed/flood management planning document since it does not provide specific regional flood mitigation projects as a conventional master plan would provide. However, this IFM Study is intended as a "guidance document" to facilitate an integrated water resources approach to flood management and promote this planning technique. This assessment is based on readily available information to perform planning level risk assessment in order to provide high level recommendations. In addition, it defines general applicable strategies, as well as provides planning level tools, to guide flood management decision making. This approach embraces protection of the natural integrity of the floodplain and ensuring that maximum value will be realized from effort to protect life and property. The focus of integrated planning is on balancing the community flood management needs with the environmental constraints and watershed resources. A sustainable flood and water management approach would recognize the:

- Interconnection of flood risk management actions within broader water resources management, ecosystems, and land use planning
- Value of coordinating across geographic and agency boundaries
- Need to evaluate opportunities and potential impacts from a system perspective
- Importance of environmental stewardship and sustainability
- Need for system flexibility and resiliency in response to changing conditions, such as climate change and population growth

## 1.2 Integrated Flood Management Approach

IFM is an approach that varies from traditional flood protection with a focus on maximizing the efficient use and net benefit of a floodplain while promoting public safety. IFM is a process that promotes an integrated, rather than fragmented, approach to flood management, and that recognizes the connection of flood management actions to water resources management. IFM requires the holistic development of a long-term strategy, balancing current needs with future sustainability. Incorporating sustainability means looking to identify opportunities to enhance the performance of a watershed system as a whole.

An integrated strategy usually requires the use of both structural and non-structural solutions. Depending on the characteristic of an individual watershed, various resource management strategies may be used such as: land stewardship, conjunctive water management, conveyance, ecosystem restoration, forest management, land use planning and management, surface storage, urban runoff management, and watershed management. It is important to recognize the level and characteristics of existing risk and likely future changes in risk. Integrated flood management also includes the recognition that flood risk can never be entirely eliminated and that resilience to flood risk can include enhancing the capacity of people and communities to adapt to and cope with flooding.

**Figure 1-2: IFM combines three major areas of watershed planning**

The benefit of using a regional and system-wide approach is that it takes into account a wide range of causes and effects, reducing potential negative unintended consequences in nearby regions. Regional approaches allow for the best use of public resources by increasing the number of issues considered. This also promotes system flexibility and resiliency by developing solutions that provide the best benefit to the overall system or region. In contrast, localized and narrowly focused projects may solve an issue or problem while transferring the problem up or downstream. One of the benefits of using an IFM approach is the potential to access funding sources that might not have

been available to single-benefit projects. This can lead to achieving sufficient and stable funding for long-term flood management.

## 1.3 California Statewide Flood Management Program Study

California Department of Water Resources (DWR) has recently completed the initial phase of a Statewide flood management planning study which is similar in many respects to this flood management planning study for the Coachella Valley IRWM Plan. The database development for this study mirrored the Statewide information process and resulted in the similar database, as well as inventory of issues. The results of the initial Statewide study are available to the public. This report, *California's Flood Future: Recommendations for Managing the State's Flood Risk* (Flood Future Report) presents an overview of the flood threats facing the state, approaches for reducing flood risk, and recommendations for managing California's flood risk. The Flood Future Report is the first statewide report to be developed through collaboration between DWR and the United States Army Corps of Engineers (USACE). This report is the first product of DWR's State Flood Management Planning (SFMP) Program. The SFMP Program was developed under the FloodSAFE Initiative to expand the focus of California's flood management planning statewide in compliance with Public Resources Code (PRC) Section 75032. The SFMP Program was funded under Proposition 84 as part of the DWR FloodSAFE Initiative and IRWM Program.

Both the SFMP and this IFM Study reviewed flood management projects and how these faced increased stakeholder involvement, land use constraints, changing regulatory requirements, and new environmental considerations. These issues have led to an increase in the cost of flood management. Addressing these issues will require a move away from the traditional approach to developing flood management projects. Specific issues impacting flood management projects which were identified and provide a useful background in developing IFM guidance planning include the following:

- **Projects require extensive stakeholder involvement, which increases project planning costs.** Stakeholders have become more educated about project development and environmental requirements. Successful projects require proper engagement of a diverse set of stakeholders. The cost associated with stakeholder engagement activities must be included in planning and implementation costs.
- **Different methodologies and inadequate data make risk assessment complex and costly to complete.** Insufficient data on the specifics of flood hazards in many areas makes it difficult to assess the level of problems. Much of the available data is based on FEMA flood hazard mapping, but this does not identify the chronic flood problems which current on a frequent basis and on smaller storm events other than a 100-year event. In addition, the data related to existing drainage facilities and the original design capacities is not readily available in digital format which makes it difficult to perform rapid assessments at a regional scale.
- **Land use decisions may not adequately prioritize public safety.** Uninformed residents and policymakers can make decisions that inadvertently put people and property at increased risk. In some cases, providing adequate space for flood management facilities to

meet existing and future needs during the development approval process would reduce flooding impacts. Internal and intra-agency coordination is important when local agencies make development decisions. Improving coordination within and between agencies could inform the potential land use decisions to considerations in General Plans, flood managers are not always included in land use discussions.

- **Delayed permit approvals and complex permit requirements are obstacles to flood risk reduction.** Many agencies wait years for permits, resulting in poorly maintained projects and missed funding opportunities for new projects. Often, agencies face conflicting or confusing requirements regarding project permits. Also, regulatory requirements to renew existing permits or obtain new permits frequently require extensive mitigation. This mitigation can greatly increase project costs and cause project delays.
- **Flood management projects are not prioritized from a "watershed" system-wide or multi-benefit perspective.** State and Federal flood management funding has traditionally been provided to local projects by analyzing a narrowly focused and localized set of benefits. In addition, funding levels for flood management are often set without regard to a system-wide prioritization of needs.
- **Flood risk funding as well as long term funding for operations and maintenance.** Funding for flood projects is based upon the potential that a significant flood will occur, rather than providing for day-to-day flood management needs. Inadequate funding for flood management maintenance, operations, and improvements makes flood risk reduction difficult or impossible for many local agencies. Agencies at all levels are facing funding constraints. Local agency funding is often based on available funds, which have been impacted by the economic downturn. Reductions in Federal funding have occurred, resulting in potential reductions in funding levels for flood risk studies and projects

## 1.4 Work Program and Objectives

The objectives of this IFM Study are to (1) develop planning level tools, (2) plan formulation processes, and (3) guidance documentation for regional collaborative planning of watershed and flood risk management using IFM techniques. Developing solutions for effectively managing flood risks requires a "watershed approach" which allows holistic strategies that can also address "beneficial uses" as well as watershed functions. The goal is to provide the forum and guidelines to allow for improved regional flood management planning on a watershed basis, as well as defining the global strategies that can be used by all the watershed stakeholders to form the foundation in developing prospective projects for funding.

This IFM Study is organized as follows:

(1) Chapter 1 provides an overall introduction to the IFM Study and concepts.
(2) Chapter 2 explains the flood management database developed for this study.
(3) Chapter 3 includes a regional assessment of flood hazards.
(4) Chapter 4 presents information on the watersheds within the IRWM region.
(5) Chapter 5 provides an overview of IFM guiding principles.
(6) Chapter 6 provides a general overview of IFM strategies.

(7) Chapter 7 specifies which IFM strategies are appropriate to Coachella Valley.

## 1.5 Watershed Stakeholder Involvement

Stakeholder outreach was performed as part of the study process in order to involve different agencies, community groups, and other watershed stakeholders in the development of the IFM Study. This included the development of the initial feedback on the information database and providing an opportunity to discuss current issues with existing flood hazards, as well as implementation of floodplain management projects. Several workshops were held with interested stakeholders that provided local input, project background, guidance, and specialized technical information. The effort was aimed at developing a strategic plan that will result in understanding watershed guidance needs and flood protection strategy that are compatible with both the physical, political, environmental, and regulatory constraints. The stakeholder workshops were divided into two different periods during the overall study process and included different objectives to solicit input from the stakeholders as well as provide information on the progress of the study:

**Workshop No.1 – Background /Inventory of Watersheds / Mapping Assessments**

- Logistics – Held on January 15, 2013 at CVWD with 20 stakeholders, including CVWD, Riverside County Flood Control and Water Conservation District (RCFCWCD), Coachella Valley Mosquito and Vector Control District (CVMVCD), Salton Community Services District, Coachella Valley Association of Governments (CVAG), Agua Caliente Band of Cahuilla Indians, and local city representatives
- Topics – Discuss the overall objective of the program and how integrated flood management can be develop and work effectively for the stakeholders. Define the meaning of integrated flood management. Focus discussion will include developing an understanding of the existing flood programs, common issues in each of the different watersheds, obstacles and constraints encountered with flood management, priority flood hazards in the different watersheds, understanding how flood risks are evaluated.
- Feedback – Additional data sources and inventory from the stakeholders, defining lines of communication, understanding the needs within the different watershed for flood management, existing and future planned project for flood management, current flood management planning process.
- Deliverable – Watershed mapping worksheet with mapped flood hazards

**Workshop No.2 – Review DRAFT IFM Planning Tools / Guidance Document**

- Logistics – Held on September 18, 2013 at CVWD with 15 stakeholders, including CVWD, RCFCWCD, CVMVCD, Salton Community Services District, CVAG, and local city representatives
- Topics – Present the DRAFT Guidance Document which will focus on the planning and the underlying principles and alternative strategies, planning tools, and processed GIS mapping database information.
- Feedback – Input and comments on the DRAFT document

# 2 Flood Management Database

## 2.1 Data Needs

A wide range of data was required to develop a minimum "baseline" database that would assist in developing background and understanding in order to characterize the existing watershed and flooding conditions. The general categories and types of data that were researched as part of the initial baseline included the following:

- **Watershed** – Data related to characterizing the watershed conditions, including hydrologic parameters
- **Hydrology** – Studies and information related to estimates of the surface hydrology quantities and watershed response for different storm events
- **Meteorological** – Information related to the types of rainfall events characteristic of the region and the historical rainfall magnitudes including frequency as well as aerial distribution
- **Flood Control Facilities** – Existing regional flood control facilities within the watershed that have been constructed
- **Urban Drainage Facilities** – Existing local drainage facilities that have been installed
- **Drainage Facility Master Plans** – Watershed plans for proposed drainage facilities
- **Floodplain Mapping** – Studies delineating the existing floodplain boundaries, which define the limits of flood hazards
- **Historical Flooding** – Locations where existing flooding has historically occurred from storm events and locations chronic flood locations
- **Flood Damage Estimates** – Monetary estimates of the amount of flood damage associated with different storm events
- **Geomorphology** – Historical information on landform changes within the watershed and particularly trends for changes within the alluvial creeks of the floodplains
- **Erosion/Sedimentation** – Different erosion/sedimentation processes occurring within the watershed including historical trends related to locations of sedimentation and erosion hazards
- **Biological** – Existing biologic resources and habitat within the floodplain
- **Environmental / Regulatory** – Existing environmental permitting requirements related to restrictions for modifications within the active floodplains

Table 2-1 provides a detailed listing of the data and information collected as part of this planning study.

**Table 2-1: Data and Information Collected**

| |
|---|
| **Flood Hazards / Floodplain Analysis** |
| Historical Flooding Locations / Issues |
| FEMA Floodplain Mapping / DFIRM |
| FEMA Technical Backup / Floodplain Models |
| FEMA FIS (Riverside County) |
| Floodplain Hydraulic Models (other than FEMA) |
| **Environmental Documentation** |
| Coachella Valley MSHCP documentation |
| **Biology / Wildlife** |
| Plant Community Maps |
| Critical Habitat Maps |
| Animal Communities Maps |
| Riparian Habitat Maps |
| Prior Reports, Studies, or Data on Biological Resources, Species Occupation & Wildlife Movement |
| **Water Quality** |
| Point Sources |
| Non-Point Sources |
| Municipal NPDES Permit |
| **Previous Watershed Hydrology / Hydraulic Studies** |
| Municipal Drainage Master Plans |
| Development Drainage Master Plans / Hydrology Studies |
| Flood Control Deficiency Studies |
| Hydrology Studies – Proposed Developments |
| Development Drainage Master Plans / Hydrology Studies |
| Hydraulic Studies – Roadway Bridges / Culvert Crossings |
| USACE Regional Watershed Studies or Flood Control Planning Studies |
| **Land use** |
| General Plan - land use |
| Future Land use Plans |
| Census Population Demographic data |
| **Available GIS Mapping Data Layers** |
| Soils |
| Geologic Features |
| Property Ownership / Property Boundaries / APN |
| Existing Land use |
| Planned Development |
| Utilities |
| Roadways |
| Vegetation |
| Jurisdictional Boundaries (ACOE, CDFG, etc.) |
| Habitat / Wildlife / Endangered Species / Conservation Areas |
| FEMA Flood Hazard Zones |
| Existing Condition Floodplain Boundaries |
| Government / Civic Boundaries |

**Table 2-1: Data and Information Collected**

| | |
|---|---|
| | Right of Way Data |
| | Traffic Circulation Elements |
| | County / City Maintained Flood Control / Stormwater Facilities |
| | Alquist - Priolo |
| **Mapping / Right-of-Way** | |
| | Topographic Mapping - Digital DTM |
| | Aerial Photography – Rectified Digital Color |
| | Property Ownership / Property Boundaries / APN |

The specific studies that were reviewed and used as part of this IFM study are referenced throughout this report and indicated with parenthetical citations. The data sources that were used for select GIS mapping as part of the IFM study are listed below in Table 2-2.

**Table 2-2: GIS Mapping Data and Detailed Source Information**

| Dataset | Source | Scale |
|---|---|---|
| Soils | Natural Resource Conservation Service, USDA | County |
| Geologic Features | U.S. Geological Survey, California Geological Survey | State |
| Property Ownership / Property Boundaries / APN | County of Riverside Parcel Assessment Areas | County |
| Existing Land Use | Southern California Council of Governments, Combined 2008 Counties Riverside, San Bernardino, and San Diego | County |
| Planned Development | County of Riverside Active GIS Files | County |
| Utilities | | |
| Roadways | County of Riverside Active GIS Files | County |
| Vegetation | Coachella Valley Multi Species Habitat Conservation Plan (CVMSHCP) | County |
| Jurisdictional Boundaries (ACOE, CDFG, etc.) | National Hydrography Dataset | State |
| Habitat / Wildlife / Endangered Species / Conservation Areas | Coachella Valley Multi Species Habitat Conservation Plan (CVMSHCP) | County |
| FEMA Flood Hazard Zones | FEMA Digital Flood Insurance Rate Maps, 06065C | County |
| Flood Awareness Areas | Department of Water Resources | County |
| Existing Condition Floodplain Boundaries | | County |
| Government / Civic Boundaries | County of Riverside Active GIS Files | County |
| Right of Way Data | County of Riverside Parcel Assessment Areas\City of Desert Hot Springs | County |
| Traffic Circulation Elements | City of Desert Hot Springs | City |
| County / City Maintained Flood Control / Stormwater Facilities | Riverside County Flood Control District Flood Facilities | County |
| Irrigation Facilities / Drain line | Coachella Valley Water District | County |
| Alquist - Priolo | U.S. Geological Survey, California Geological Survey | State |
| Topographic Mapping - Digital DTM | U.S. Geological Survey, Digital Elevation Model, 1 arc second | State |
| Aerial Photography – Rectified Digital Color | ESRI, World Imagery Service | County |

## 2.2 Data Sources

The information about watershed characteristics and existing flooding was gathered in order to establish a database of the baseline flood problem conditions in the region and was obtained in the following ways:

- **Existing flood documents** - A search was conducted for existing flood-related documents. This included flood control plans, stormwater/flood evaluation studies, surface flow studies, Federal Emergency Management Agency (FEMA) maps, drainage plans, master plans, general plans, flood assessments, and other documents related to climate change and wetlands.
- **Historical Flooding –** Locations of historical flooding, flood damage, and chronic flooding areas based on eye witness accounts, maintenance efforts, and newspaper articles. This information was obtained through phone calls, emails, outreach efforts, and periodical searches.
- **Data requests** - Specific data requests were made to participating municipalities and floodplain management agencies for records of current, ongoing flood problems in their respective municipal and unincorporated areas. A similar request for available data was also solicited to the watershed stakeholders related to existing reference documentation, studies, and data related to watershed flood information. An attempt to maximize the initial information gathering effort by contacting multi-agency and/or multi-regional entities with known flood management responsibilities in the Coachella Valley. In addition, stakeholder outreach provided an opportunity to initiate relationship building between watershed stakeholders utilizing the floodplain managers' forum. Once provided, this information was used to develop maps of flood hazards and watershed information
- **Existing GIS databases** – Available digital geographic information databases were consulted through a variety of agencies. In particular, the local database generated through the Coachella Valley Association of Governments was utilized as the initial data source, as well as CVWD and RCFCWCD.

## 2.3 Data Gaps

Available information was limited to fulfill the data needs, particularly in a geographic information format to facilitate regional planning. Flood infrastructure information is very limited and it is difficult to obtain digital mapping to inventory existing facilities on a regional basis or within local municipalities. There was not a GIS or CAD database of all the drainage and flood control facilities within the Coachella Valley, although this is an item which is being developed. In many cases, agencies did not have a complete inventory of infrastructure that they owned and/or maintained. In addition, it was difficult to find information related to locations of flood deficiencies, problem "hot spots," and recurring problem areas. Some of the issues in the development of a comprehensive database sufficient for watershed planning on a system wide basis include:

- Database utilized for the current study is limited to primarily to the available GIS data

- Data inventory conducted at a regional scale
- Existing flood hazards data limited to FEMA and DWR database
- Not sufficient information to identify locations of flood problem sources and deficiencies
- Insufficient information to generate a comprehensive inventory of existing flood protection infrastructure

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# 3 Existing Flood Hazards

## 3.1 Coachella Valley Flooding Characteristics and Issues

The Coachella Valley's desert environment, along with watershed/basin characteristics, result in unique flooding conditions and issues which are much different from more common riverine floodplains. The hydrologic response of the watershed units associated with high intensity type rainfall events as well as the channel processes/geomorphology trends influence the flooding characteristics. These different characteristics of the watersheds and floodplains are important to understand since these define and limit potential flood management solutions.

Watershed

The Coachella Valley IRWM Region is essentially comprised of the **Whitewater River watershed** with all of the tributaries on the west and east side of the Coachella Valley draining to the Whitewater River Stormwater Channel, which traverses the Coachella Valley floor. The watershed has a drainage area at its outlet into the Salton Sea of approximately 1,500 square miles. It is bounded on the west by the San Jacinto Mountains and the Santa Rosa Mountains and on the north and east by the Little San Bernardino Mountains; by the peninsular Tehachapi Mountains on the Northwest; together with the San Gabriel and the San Bernardino Mountains on the Southwest. The valley is approximately 15 miles wide along most of its length.

The adjacent mountains which ring the valley can reach up to 10,830 feet in elevation (San Jacinto Peak) and discharge to the valley floor which provides a dramatic change in elevation. The valley floor elevation at Palm Springs is approximately 470 feet and in Mecca it is 250 feet below sea level. The valley floor is extremely flat compared to the mountain watershed and alluvial fan/foothill areas. Approximately 28% of the area within the IRWM boundary has slopes ranging from 0-3% which is the generally valley floor. Approximately 54% of the Coachella Valley IRWM area has slopes which are greater than 10% which reflects the amount of mountainous/foothill area.

Watershed boundaries and surface drainage patterns are difficult to define within the flatter down-valley portions of the watershed and on the alluvial fans. The majority of the urbanization has occurred within the valley floor or on the lower portions of some of the different alluvial fans. The majority of the agricultural uses are in the southern portion of the valley while the urbanization has occurred north of the agricultural uses.

Floodplain / Geomorphology

Much of the valley floor is subject to inundation and shallow flooding with unpredictable flow paths. The sides of the Coachella Valley have been formed by coalescing alluvial fans below the foothills which generally lack defined natural channels and are subsequently subject to unpredictable sheet flow patterns on the fans. However, many of the fans have regional flood control systems which include engineered dikes and channels to provide flood protection (Digital Desert, 2012).

Alluvial fans are an erosional feature - unpredictable flow paths/braided channel patterns; not channelized, difficult to provide control structures, sheet flows are common, development exists on the alluvial fans themselves. Flood dynamics of an idealized alluvial fan can be characterized by several zones which are defined beginning from the apex as: (1) channelized zone, (2) braided zone, and (3) sheet flow zone (see Figure 3-1) (French, 1996).

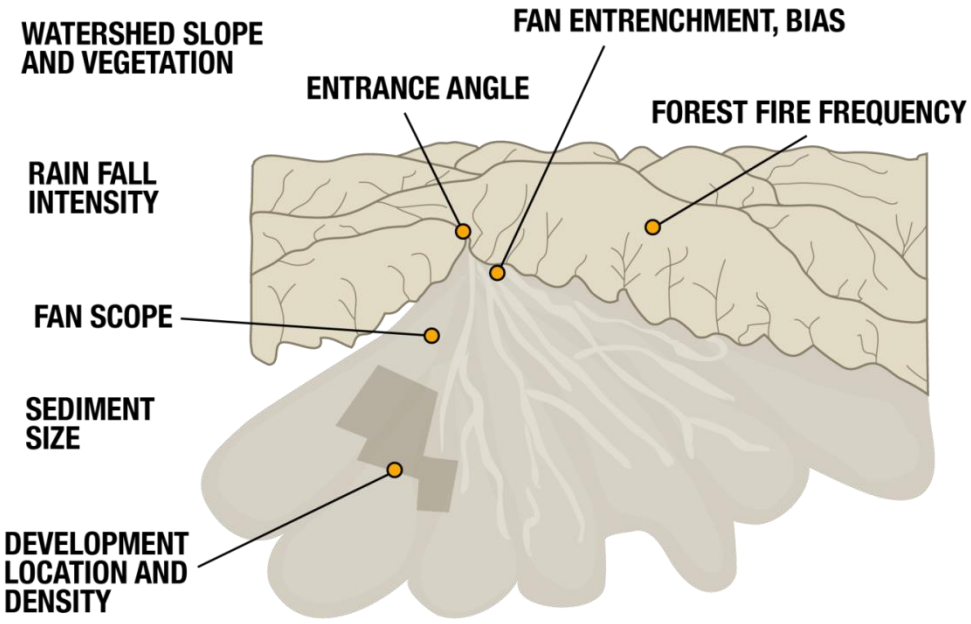


**Figure 3-1: Definition of Alluvial Fan Characteristics**

Published FEMA mapping of regional flood hazards may not accurately define the limits and floodplains and magnitudes of the flood hazards. Multiple alluvial fans coalesce or overlap which is common below the foothill canyons which are known as bajadas and create complex flooding patterns. Most of the surface waters, because of the arid conditions, are ephemeral streams which only flow in direct response to precipitation (French, 1996)..

Existing roadways may modify and concentrate flows in the shallow floodplain areas, particularly in the valley floor. Channel migration/erosion/sediment deposition is common. Location of the stream channel on a fan is often erratic due to the rapid expansion of the width and highly variable sediment load. Shallow flooding often occurs along highly unpredictable flow paths because the source of the flow may be variable, topographic relief may be low, channels may shift or may be nonexistent, or sediment and debris may be deposited or removed during or after a flood altering the flow path. Sheet flooding occurs on the lower valley floor, which are the lower fringes of the alluvial fans that have limited topographic relief and difficult to define the level of flood hazards (Anderson-Nichols & Company, 1981).

Drainage Infrastructure

There is significant regional flood infrastructure in different areas of the valley; however, there are also many areas which are lacking any regional flood control facilities. The primary regional facilities include (1) dikes constructed on some locations of both the east and west side of the valley along alluvial to intercept flows, (2) Whitewater River channel which includes engineered earthen channel with concrete slope lining in many areas as well as leveed sections and grade control structure, (3) debris basins on some of the alluvial fans and corresponding channels (Bechtel, 1990 1991, 1997, 2003; FEMA, 2008).

Urban drainage facilities located within the urbanized portions have limited hydraulic capacity and are not designed to accommodate regional overland flooding that exceeds the smaller urban watershed. Urban drainage facilities generally consist of local retention/detention basins, street drainage inlets, underground storm drain pipes, and culverts. Detention and retention is utilized significantly for the smaller urban drainage watersheds.

Metrologic / Hydrologic Response

Precipitation can vary considerably within the watershed and location, based on elevation. Average annual precipitation in the Coachella Valley ranges from about 20 inches in the mountains to less than 4 inches on the valley floor. Rainfall-runoff watershed response varies based on elevation within the watershed and corresponding soil types. Typically frequent wildfires in Southern California can result in burn conditions that can result in changes to the surface soil layer that can dramatically reduce infiltration and increase runoff. Larger storm events may result in higher flooding from "cascading" watersheds where watershed boundaries may coalesce and combine because of limited hydraulic capacity or undefined floodplains. This affect is particularly evident in flooding with the valley floor watershed areas because of the limited topographic relief. Flashy storms include high flow volumes, low frequency, and high volumes of sediment transfer. Steep and short watersheds, combined with brief intense storms, results in flashy systems where discharge can vary by several orders magnitude over short time period (French, 2012).

Rainfall is caused by three types of storms in the Valley which include (1) low-pressure systems originating in the Gulf of Alaska or near the Hawaiian Islands, (2) low pressure system originating from the tropics during the late summer and early fall, and (3) cloudbursts or thunderstorm covering small areas and originating from convective uplifting occurring during the summer and early fall. Most storms greater than 1-inch of precipitation in one day are from frontal or low-pressure systems that are most prevalent during December through March. The largest historical rainfall event recorded was in Indio from a thunderstorm preceding the occurrence of a tropical storm from off the west coast of Mexico from which 6.45 inches of rain feel in a period of 6-hours (ACOE, 1980, 1983, 1997).

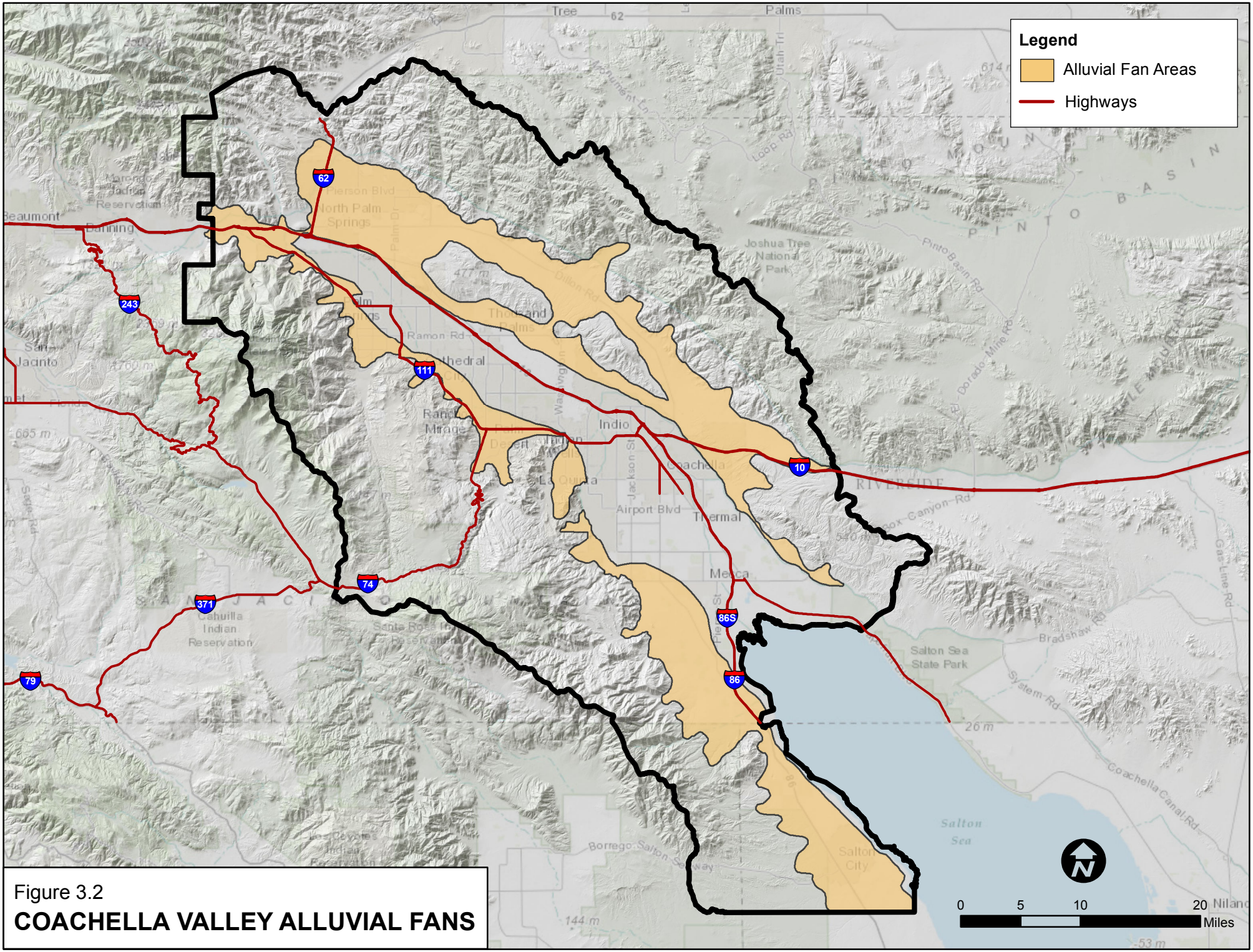


Figure 3.2

**COACHELLA VALLEY ALLUVIAL FANS**

## 3.2 Existing Floodplain Management Programs and Agencies

Regional flood protection within the Coachella Valley is divided between CVWD and RCFCWCD, with the majority of the valley within the CVWD service area. The different cities within the valley are responsible for the local urban drainage facilities as well as the administrators of floodplain management activities. The responsibility for drainage in the eastern part of Riverside County is borne by a combination of the County Transportation Department, CVWD, the various cities and a variety of local entities. There are some regional facilities where both CVWD and RCFCWCD share jurisdiction, such as the Whitewater River channel system in the Palm Springs and Cathedral City area.

The Coachella Valley Stormwater District (part of CVWD) was formed in 1915 to control regional flooding. CVWD protects 590 square miles from flooding and within CVWD's boundaries there are 16 stormwater protection channels. The entire system includes approximately 135 miles of channels built along the natural alignment of dry creeks that naturally flow from the surrounding mountains into the Whitewater River. The backbone of the stormwater protection system is a 50-mile storm channel that runs from the Whitewater area north of Palm Springs to the Salton Sea. The western half of the channel runs along the natural alignment of the Whitewater River that cuts diagonally across the valley to Point Happy in La Quinta (near Highway 111 and Washington Street). Because the riverbed flattens out naturally in the eastern valley, downstream from Point Happy a man-made storm channel funnels flood waters to the Salton Sea.

The RCFCWCD was created in July 1945 by an Act of the California State Legislature. Following the devastating floods of 1938, the Riverside County Board of Supervisors saw the need for a regional drainage authority and petitioned the California State Legislature to create such a body. On July 7, 1945, the Legislature took the appropriate action and the RCFCWCD was born. In establishing the District, the Legislature not only formed an entity charged with keeping county residents safe from flood hazard but also established an independent tax revenue stream for funding. The District (2700 sq. mi.) is located in the western portion of Riverside County (7200 sq. mi.). It extends easterly far enough to include the cities of Palm Springs, Cathedral City and Desert Hot Springs. The mission of the District is to “protect people, property and watershed from damage or destruction from flood and storm waters and to conserve, reclaim and save such waters for beneficial use.”

## 3.3 History of Flooding

Historical references indicate that relatively large winter floods occurred in or near the Whitewater River Basin in 1825, 1833, 1840, 1850, 1859, 1876, 1884, 1889 and 1891. More authoritative records since 1891, including newspaper and eyewitness accounts, show that moderate to large winter floods occurred in January 1909, February 1927, March 1938, December 1940, January 1943, November 1965, January and February 1969, January, February, and Marc 1978, January and February 1980, March 1983, and January 1993. From the little information available, the floods of 1927 and 1938 appear to have been the largest general floods since 1891 in this region. Several general summer storms have also produced significant flows in the region. The most notable of these storms are the tropical storms of September 1939 and September 1976. In addition,

numerous local summer storms have occurred; however, because of the relatively small areal extent of these storms and the large percentage of undeveloped area within the region, little attention has been given to any, except for a few unusually intense thunderstorms which have occurred in the more populated areas (ACOE, 1980, 1983, 1997; FEMA, 2008).

The September 1939 storm, one of the largest observed thunderstorms in the region, occurred in the vicinity of Indio and has been defined as the local "Standard Project Storm" (SPS) for the Coachella Valley area.

(a) **Storm and Flood of September 24 – 26, 1939**. The September 1939 storm originated off the west coast of Mexico as a tropical hurricane. The hurricane intensity was gradually lost as the storm approached southern California from the south. As the storm reached southern California and crossed the greater Los Angeles area, it veered towards the northeast. According to the National Weather Service records, this is one of only two known tropical storms that have passed over the region with such intensity. Most eastern Pacific tropical cyclones die out before they reach the latitude of southern California. The total storm precipitation in the Whitewater River basin varied from 9.65 inches at Raywood Flat to 1.51 inches at Palm Springs. At Indio, in a thunderstorm preceding the occurrence of the main storm, 6.45 inches fell in a period of 6 hours. No estimates of runoff during the thunderstorm storm at Indio are available. Runoff during the main storm was generally light over the Whitewater River basin (ACOE, 1980, 1983, 1997).

**Figure 3-3: Damage after the 1936 Flood in the Coachella Valley**

(b) **Storm and Flood of January 18-29, 1969**. Between January 18 and 25, 1969, a series of very heavy storm hit southern California as a strong flow of warm and very moist tropical air moved into the area from out of the southwest. This was followed by a period of cooler and less intense storminess on January 27 to 29. Except for a brief lull on January 22 and 23, almost continuous, heavy rains, with high snow levels, soaked the coastal and mountain portions of southern California from January 27 to 29. Except for a brief lull on January 22 and 23, almost continuous, heavy rains, with high snow levels, soaked the coastal and mountain portions of southern California form January 18 through 26, climaxed by an extraordinary downpour on January 25. Total precipitation for January 18 to 29 in the Whitewater River basin ranged from less than one inch on the desert floor from Indio to the Salton Sea to more than 31 inches in the south slopes of Mt. San Gorgonio. About 5.7 inches fell in 40 hours at the Mission Creek rain gage maintained by RCFCWCD. At the U.S. Geological Survey (USGS) gaging station at Mission Creek near Hot Desert Springs (DA=35.6 mi2) a peak discharge of 1660 cfs was recorded on January 25 (ACOE, 1980, 1983, 1997).

**Figure 3-4: Whitewater River at Indian Avenue as it appeared on March 23, 1965. Indian Avenue was destroyed by flood waters cutting back from a sand and gravel pit on the downstream side.**

(c) **Storm and Flood of October 22, 1974**. An extremely high intensity thunderstorm occurred in the area easterly of Desert Hot Springs on October 22, 1974 as the result of an influx to the Coachella Valley of moist, unstable tropical air from Mexico. Precipitation occurred over most of the Coachella Valley, but the most intense rainfall apparently occurred in the uninhabited lower reaches of Wide Canyon east of Desert Hot Springs. Based on field interviews and RCFCWCD's recording rain gage at Desert Hot Springs, the duration of the storm was determined to be approximately 1.5 hours in the Wide Canyon area. Precipitation at Desert Hot Springs, west of Wide Canyon Dam, began about 4:45 PM Pacific Daylight Time (PDT). Flooding and resultant property damage was widespread in the area between Long and Wide Canyons, and Willow Hole (ACOE, 1980, 1983, 1997).

The most severe flooding and property damage resulted from flows generated in the Little San Bernardino Mountains, specifically Long and Wide Canyons. Aerial photographs taken at the time show the wide extent of the flooding, from the canyons to Willow Hole and the unpredictable fanning and braiding of flood flows on alluvial cones and flood plains. The discharge from Long Canyon at the USGS gage was 790 cfs. Slope-area computations by RCFCWCD indicate the discharge was probably much higher further downstream just below the mouth of the canyon; however, due to the unstable nature of the alluvial streambed, a precise determination of the flow rate could not be made.

(d) **Storm and Flood of September 9 to 11, 1976**. This unusually widespread and heavy summer storm occurred when Tropical Storm Kathleen, from off the west coast of Mexico, traveled northward through the western Imperial Valley and dumped very intense rain along the eastern

slopes of the San Jacinto Mountains and the southern and eastern slopes of Mt. San Gorgonio. Total precipitation for the storm - most of it falling within 12 to 18 hours - ranged from 1.8 inches to 2.8 inches in the center of the Coachella Valley to 14.4 inches just south of San Gorgonio Peak (ACOE, 1980, 1983, 1997).

(e) **Storm and Flood of August 15 to 17, 1977**. Tropical storm Doreen moved northerly up the Sea of Cortez, across Baja California, and passed about 60 miles west of San Diego on a north-northwest course during the period of August 15 to 17, 1977. Thunderstorms triggered by Tropical Storm Doreen caused flash floods, high winds and power outages to Riverside County. Preceding this storm, moist air was forced into California desert regions, producing intense local rainfall on Monday afternoon, August 15 (ACOE, 1980, 1983, 1997).

The heaviest rainfall fell at the top of the Palm Springs mountain tramway and foothill areas. The gage at Desert Hot Springs recorded 4.49 inches of rain in 1 day. Desert Hot Springs maximum short duration values were broken, with 1.18 inches recorded in 1 hour and 3.85 inches in 12 hours. Business and residential flooding were most prevalent in the communities of Indio, Palm Desert, Thousand Palms and Desert Hot Springs. The peak discharges recorded at the Mission Creek, Long Canyon, and Deep Canyon gages are 463, 350, and 410 cfs, respectively.

(f) **Storm and Flood of September 10, 1977**. A late summer storm, characterized by short periods of locally intense rain, lightning, hail, and strong winds, hit the desert areas on September 10, and caused mud slides, a broken dike, washed-out roads, and flooded homes. The scattered nature of the heavy rain was demonstrated by the fact that only (ACOE, 1980, 1983, 1997).

## 3.4 Flood Hazard Identification

Regional mapping of the existing flood hazards for the Coachella Valley region has been prepared by FEMA as part for the National Flood Insurance Program (NFIP), which requires each community to identify 100-year recurrence interval flood prone areas as part of adopting floodplain management regulations. In addition, additional mapping for some of the areas not covered by the published FEMA flood hazard mapping has been prepared by DWR through their "Flood Awareness Mapping" which provides identification of floodplain limits through approximate methods (see Figure 3-5). The intent of the Awareness Floodplain Mapping project by DWR is to identify all pertinent flood hazard areas by 2015 for areas that are not mapped under FEMA NFIP and to provide the community and residents an additional tool in understanding potential flood hazards currently not mapped as a regulated floodplain. The flood hazard areas generally align with the Region's identified floodplains, which are shown in Figure 3-6.

The minimum federal flood protection goals and requirements are administered by FEMA NFIP. The NFIP, originally established in 1968, provides low-cost federally subsidized flood insurance to those communities that participate in this program. Participation in the program requires that the community adopt floodplain regulations which meet the requirements of the NFIP defined in *44CFR Chapter 1 Part 59* which include mapping of existing flood hazards. Hydrologic-hydraulic studies are required to analyze the delineation of the 100-year recurrence interval floodplain limits. The

published FEMA flood hazard maps provide an approximation of the regional floodplain limits based on the standards for FEMA alluvial fan hazards. The mapped flood hazards focus on regional flood hazards and do not evaluate localized flooding, particularly in urbanized areas, so there can be areas which may flood in even small storm events but may not be within a mapped flood hazard zone.

FEMA is the federal entity responsible for producing Flood Insurance Rate Maps (FIRMs). The flood risk information presented on the FIRM is based on historic, meteorological, hydrologic, and hydraulic data, as well as open-space conditions, flood-control works, and development within the study area. The FEMA flood hazard zones represents the areas susceptible to the 1% annual chance flood (commonly referred to as the "100-year flood), and the 0.2% annual chance flood ("500-year flood"). The 1% annual chance flood has at least a 1% chance of occurring in any given year. FEMA designates this area as a Special Flood Hazard Area (SFHA) and requires flood insurance for properties in this area as a condition of a mortgage backed by federal funds.

FIRMs are the mapped product of engineering studies, called Flood Insurance Studies (FISs). The effective date of the first FIS for the Unincorporated Areas of Riverside County was April 15, 1980, with the initial coordination meetings with FEMA in December 1974. Since that time, the FIS for the County has been updated multiple times. The most recent revision being August 28, 2008 is a "countywide" study update which includes various communities within the Coachella Valley including Desert Hot Springs, Coachella, Cathedral City, Indian Wells, Indio, La Quinta, Palm Desert, Rancho Mirage, as well as the unincorporated areas of the County (FEMA, 2008). The existing published FEMA flood hazard mapping illustrates general characteristics of the floodplain and provides an understanding of the extent of the existing flood potential. It is apparent that there are uncertainties and discrepancies in the flood hazard mapping, particularly where there are dramatic changes in the mapping at local government boundaries where there are not any hydraulic influences. The mapping should be used cautiously because of its approximate nature and it does not necessarily define the magnitude of flooding, but just the approximate extent of the floodplain.

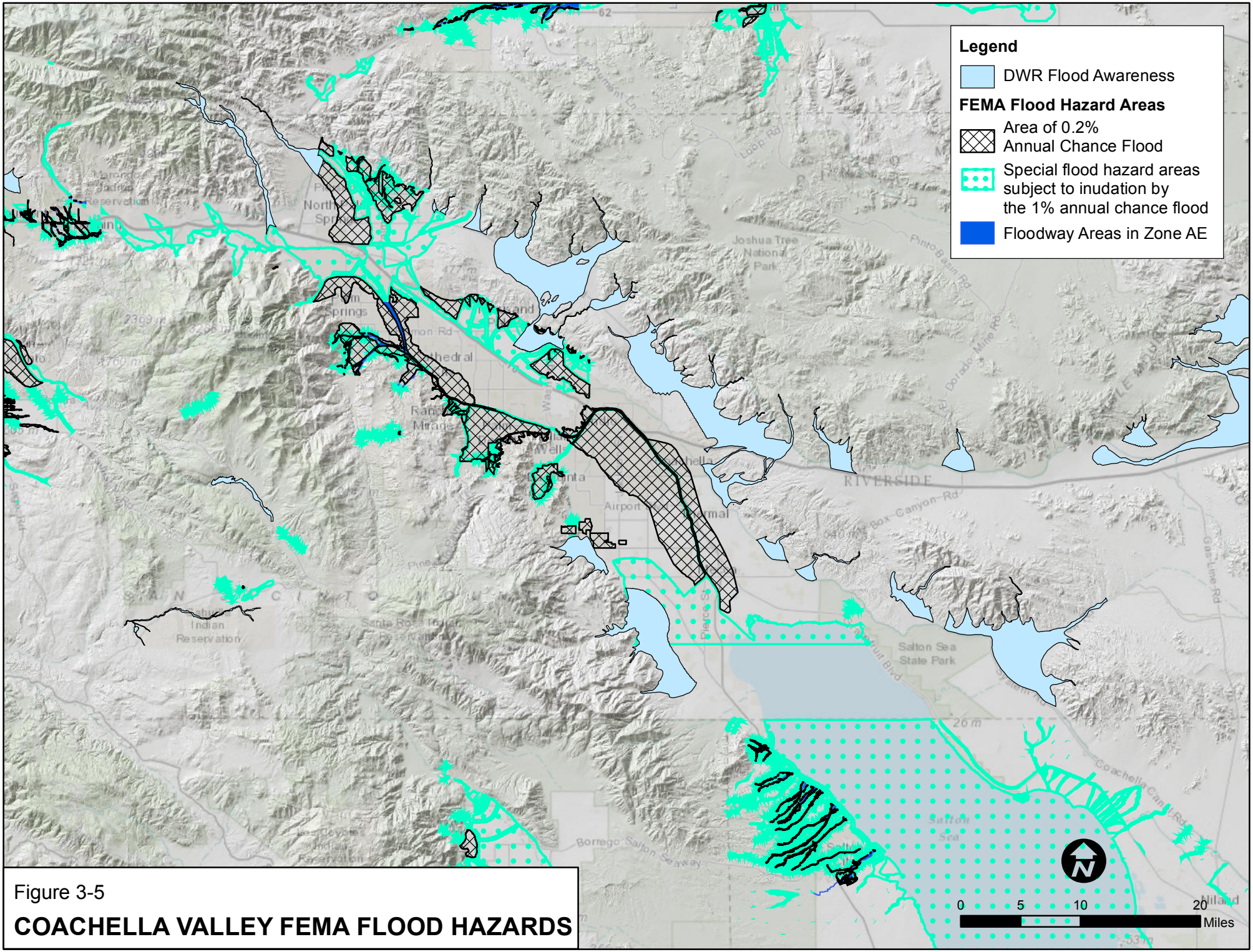


Figure 3-5

**COACHELLA VALLEY FEMA FLOOD HAZARDS**

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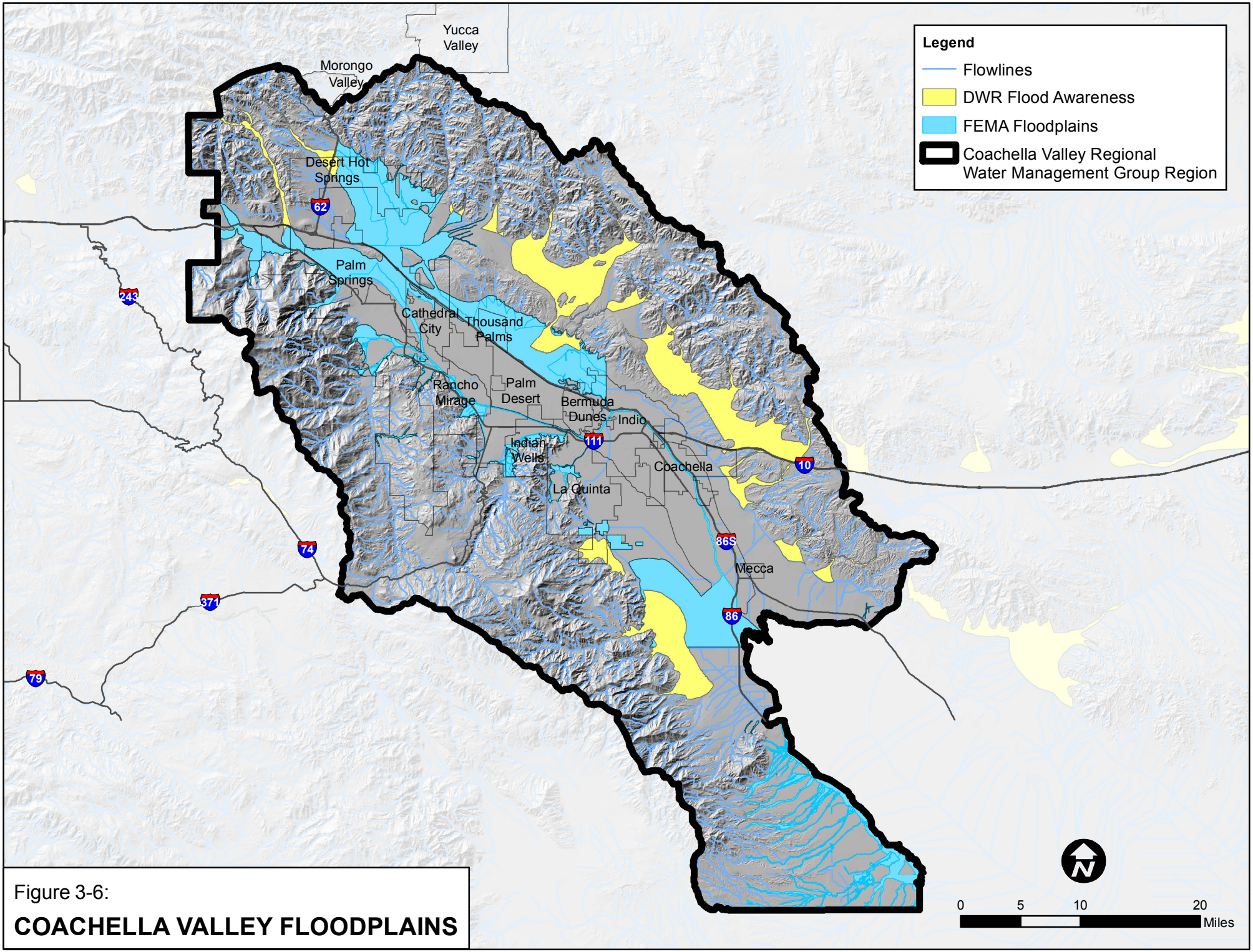


Figure 3-6:

**COACHELLA VALLEY FLOODPLAINS**

### 3.4.1 General Trends from Flood Hazards Mapping

General trends regarding the floodplain that can be developed from the mapping which include:

(1) floodplains are very well defined in the lower mountains/foothill canyon areas where there are incised streams within the canyons,
(2) valley floor and alluvial fans result in wide floodplains with locations of flow redistributing and splitting to other channels downstream,
(3) linear floodplain boundaries for locations of shallow flooding in several locations is associated with freeway and railroad embankments in some area; however in some areas appears it is not necessarily associated with a physical boundary, but actual political boundaries for local government jurisdictions reflecting different time periods when the mapping was performed or methodology used in alluvial fan analyses,
(4) shallow flooding floodplains encompass many portions of valley floor areas,
(5) all the floodplains illustrate that the general surface drainage patterns are directed to the center and down valley,
(6) the larger unconfined floodplains are within the Desert Hot Springs area, north Palm Springs, Thousand Palms / north Indio area, and the Thermal area,
(7) all the alluvial fans also reflect unconfined shallow floodplain areas,
(8) the uncertainty associated with the unconfined flooding patterns on the alluvial fans and also in the down valley floor would suggest utilizing the 500-year floodplain to evaluate potential overflow areas in the 100-year flood,
(9) the I-10 freeway/railroad appears to block the flows from the eastern valley watershed and direct them down-valley until Indio,
(10) below Indio the central portion of the valley could have significant amount of down valley flooding from channel overflows, and
(11) the central portion of the valley between Indio and Cathedral City (bounded to the east by the railroad and Whitewater River to the west) does not have regional flood hazards.

## 3.5 Defining Flood Risk

Flood risk can be defined by three different components which include (1) “flood hazard” which is generally the probability of occurrence of a particular flood event, (2) the” exposure” of human activity to the flood which is equated to the flood damage potential, and (3) the specific “vulnerability” or the lack of resistance to damaging/destructive forces. Flood risk can be mathematically calculated as the product of hazard, exposure, and vulnerability. Understanding these definitions is an important foundation in flood management planning. A smaller flood that causes less damage occurs more frequently than a very severe flood that can cause much great damage. However, from a loss prevention standpoint, it may be more beneficial to protect for the more frequent events. The assessment of community vulnerabilities can be evaluated through review of existing codes, plans, policies, programs, and regulations used by local jurisdictions to determine whether existing provisions and requirements adequately address the flood hazards that pose the greatest risk to the community.

**Flood Risk** – likelihood of consequence from inundation. Identifies the cause and the frequency of the problem (how often)

**Flood Exposure** – relationship between the flood hazard on the effect on loss of property, life, and environmental resources.

**Vulnerability** – identifies level of exposure expected (how flooding adversely affects people and property)

### 3.5.1 Flood Event-Specific Factors Influencing Flood Damage

Although there are many issue that effect flood damage, there are several key factors associated with the flood characteristics which influence the amount and severity of the flood damage. In addition, Figure 3-8 provides a general outline of the types of flood losses and the assessment of the type of damage. A description of the primary factors that influence on the severity of flood damage includes the following:

**Flood depth:** The height flood waters reach is an important consideration affecting flood losses. Structures are more susceptible to damage as flood depths increase. Generally, the valley floor areas and the alluvial fans in the Coachella Valley are subject to lower flood depths and more mountainous regions where narrow floodplains and step terrain along the stream corridor prevails are subject to greater flood depths during flood events.

**Flood duration:** The longer flood waters are in contact with building components (such as structural members, interior finishes, and mechanical equipment), the greater the potential for damage. The duration of flooding is very specific to the nature of an event. However, the structures closest to a flooding source (such as a river, bay, or canal) are more likely to sustain longer durations of flooding and be more vulnerable to flood damage. As flood waters recede, these structures will remain flooded for longer durations than structures located along the edge of the floodplain, increasing the potential for damage.

**Velocity:** The velocity of flood waters is an important factor impacting potential flooding damage. Flowing water exerts forces on the structural members of a building, increasing the likelihood of significant damage. In addition, flowing waters can increase erosion and scour around the foundation of a structure, which can further increase the vulnerability of a building to flood damage.

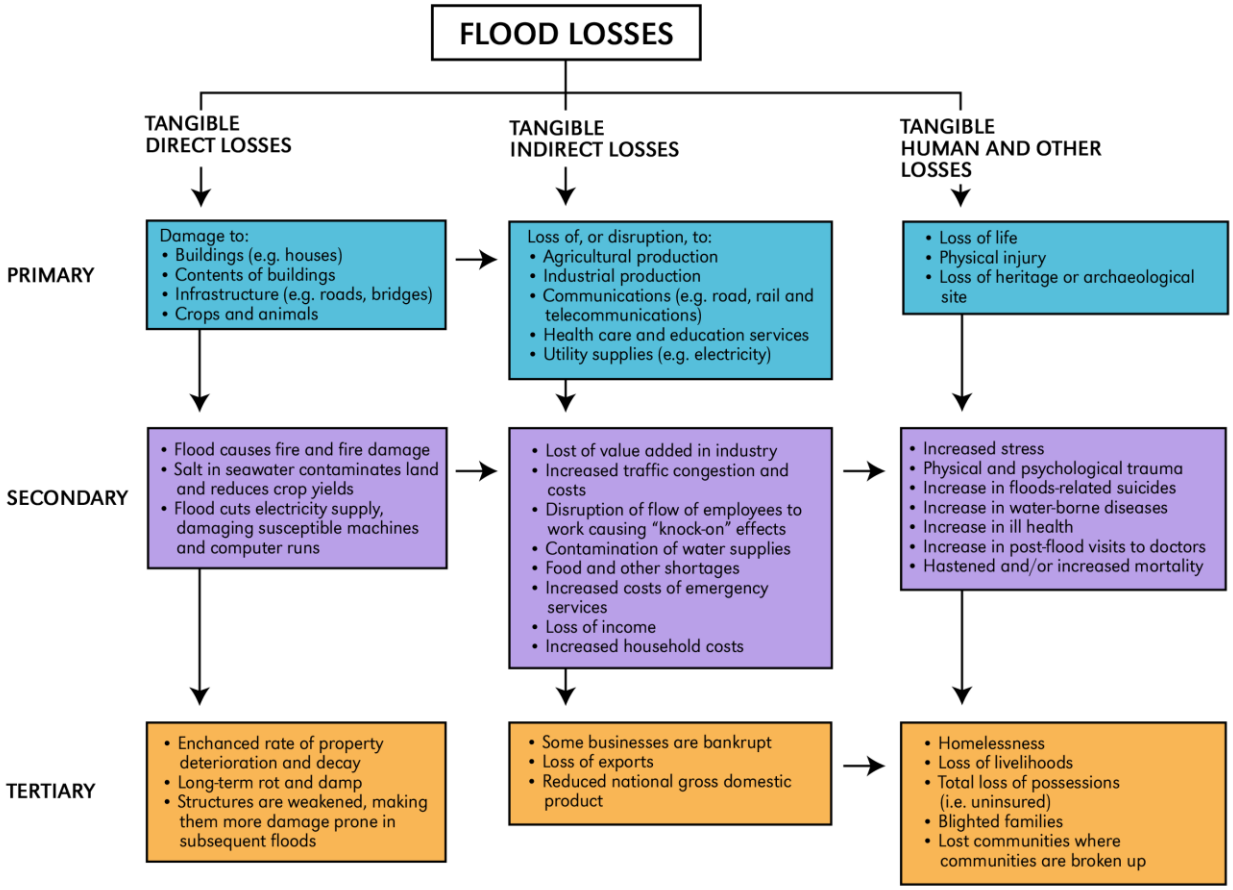


**Figure 3-7: Illustration of different types of flood losses and the associated impacts**

## 3.5.2 Repetitive Flood Damage Losses

A "repetitive loss property" is one for which two flood insurance claim payments of at least $1,000 have been paid by the NFIP within any 10-year period since 1978 (e.g., two claims during the periods 1978-1987, 1979-1988, etc.). These properties are important to the NFIP because they cost $200 million per year in flood insurance claim payments throughout the country. Repetitive loss properties represent only one percent of all flood insurance policies in the country, yet historically they account for nearly one-third of the claim payments (over $4.5 billion to date). Mitigation of the flood risk to these repetitive loss properties will reduce the overall costs to the NFIP as well as to individual homeowners. FEMA programs encourage communities to identify the causes of their repetitive losses and develop a plan to mitigate the losses. Repetitive flood damage loss illustrates areas of an existing recurring chronic flood hazard which should be targeted as a priority to be addressed. The Coachella Valley is vulnerable to specific "hot spot" areas that have experienced repeated flooding since there generally occur based on natural water flow patterns.

## 3.6 Assessment of Flood Risks

Assessment of the flood risk is a complex problem that can only be solved through interdisciplinary research. In general, a two-step approach is utilized. First, we must characterize the flood hazard using a selected set of indicator maps, like the spatial distribution of flow velocity, water height, speed of propagation, duration, etc. Second, we estimate how the flood hazard indicators interfere with human activities in the flooded area. Agricultural activities will suffer damage in different ways than for instance an industrial zone or an urban area.

An initial assessment of the magnitude of the existing "flood risk" which correlates directly to the potential amount of flood damage can be developed through quantifying encroachment of different land uses within the floodplain. Any area located within 100-year floodplain flood hazard area is considered to be at high risk of flooding. An overlay the land use plan with the mapped flood hazard zones can be generated. The FEMA flood hazard zone "A" is the 100-year floodplain designation, although there are different types of this flood hazard for insurance purposes. The mapping indicates that the majority of the areas have land use zoning which is compatible with the floodplain being zoned primarily "open space." However, it is important to note the amounts of other general land uses within the floodplain, particularly the more urban type of uses which would result in more extensive flood damage. The magnitudes of the general land use designations within the flood hazard zones have been developed utilizing the existing database available. This generalized mapping overlay can be utilized as an effective planning tool as part of the initial plan formulation. The land use areas which have a high dollar value within flood hazard zones would indicate locations to target and prioritize projects. Other benefits of this mapping assessment include:

- Identification of flooding vulnerable structures based on flood inundation hazards
- Approximate magnitudes of potential flood losses
- Potential critical public lifeline facilities and infrastructure that could be impaired by flooding
- Identification of key transportation facilities, including roadways that could reduce public access and emergency response
- Identification of the different land uses encroaching within the 100-year flood hazard zones as well as quantifying the amount of these areas for different land use

Figures 3-8, 3-9, 3-10, and 3-11 of this IFM Study illustrate the mapped floodplain risk and exposure assessment based on the amount of land use within the published mapped flood hazard zones. The precise risks to the different land uses would require detailed analyses of different flooding depths for different flood frequencies to determine how risk varies within the floodplain, but this data was not available for this study.

### 3.6.1 Land Use Located within Flood Hazards – Total Distribution

The land use mapping database of the different land use within the Coachella Valley were overlaid with the existing flood hazard mapping to determine the amount of land uses within the floodplain. The land use reflects both the existing and proposed land uses for the valley based on the different "general plan" data from the Cities and County. The total amounts within the valley were accounted for within the four different mapping quadrants, as well as the grand total for the valley. The results of this assessment are shown in the tables and charts on the following pages.

The comparison of the different information presented in both the tabular and graphical summary of the data indicates the following general trends:

- Southwestern portion of the valley has the largest amount of residential area within the mapped floodplain areas
- The northeast quadrant has the largest amount of mapped floodplain acreage which is because of the Morongo/Mission alluvial fan and the Mid-Valley floodplain on the eastern side of the valley.
- The largest land use within the floodplain for all the quadrants is open space and this is desired outcome or trend from a floodplain management perspective.

**Table 3-1: Total of Land Use types located within mapped flood hazard zones for entire Coachella Valley**

| Grand Total – Entire Valley Area | |
|---|---|
| **Land Use** | **Acres** |
| Agriculture | 16,076 |
| Commercial and Services | 2,178 |
| Industrial | 1,120 |
| Open Space and Recreation | 110,901 |
| Residential | 12,875 |
| Transportation, Communications, and Utilities | 13,332 |
| Water | 183 |
| **Total** | **156,664** |

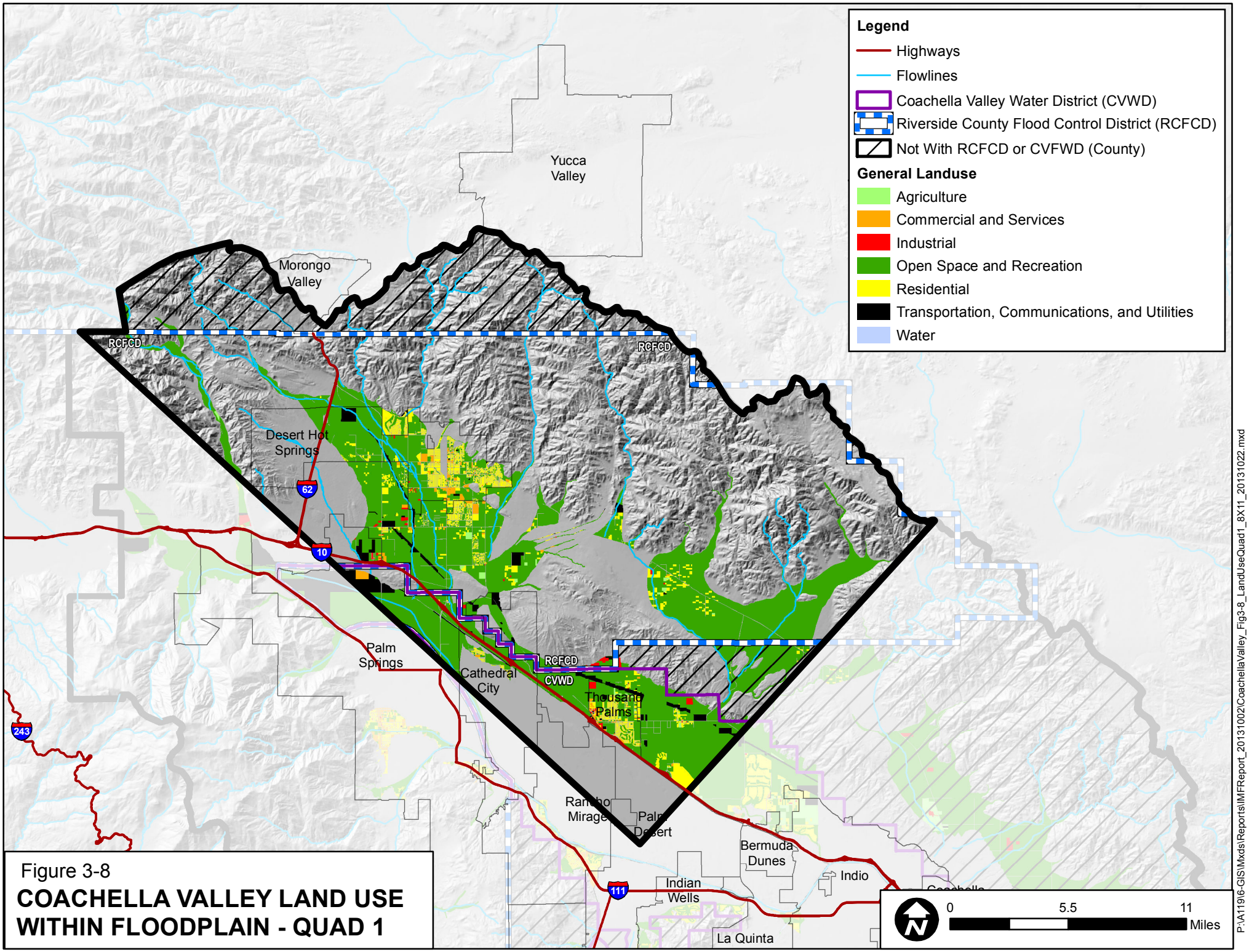


Figure 3-8

**COACHELLA VALLEY LAND USE WITHIN FLOODPLAIN - QUAD 1**

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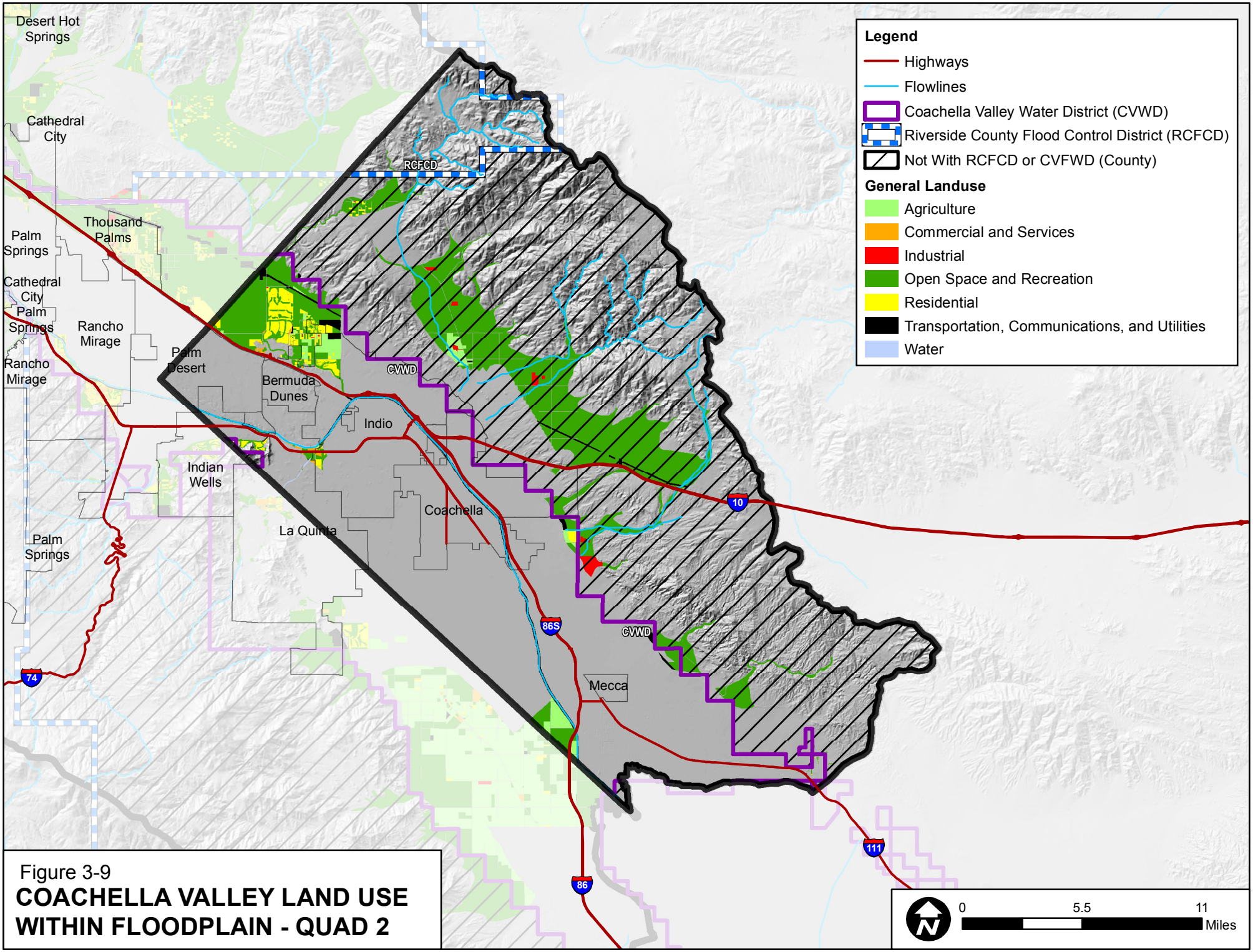


Figure 3-9

**COACHELLA VALLEY LAND USE WITHIN FLOODPLAIN - QUAD 2**

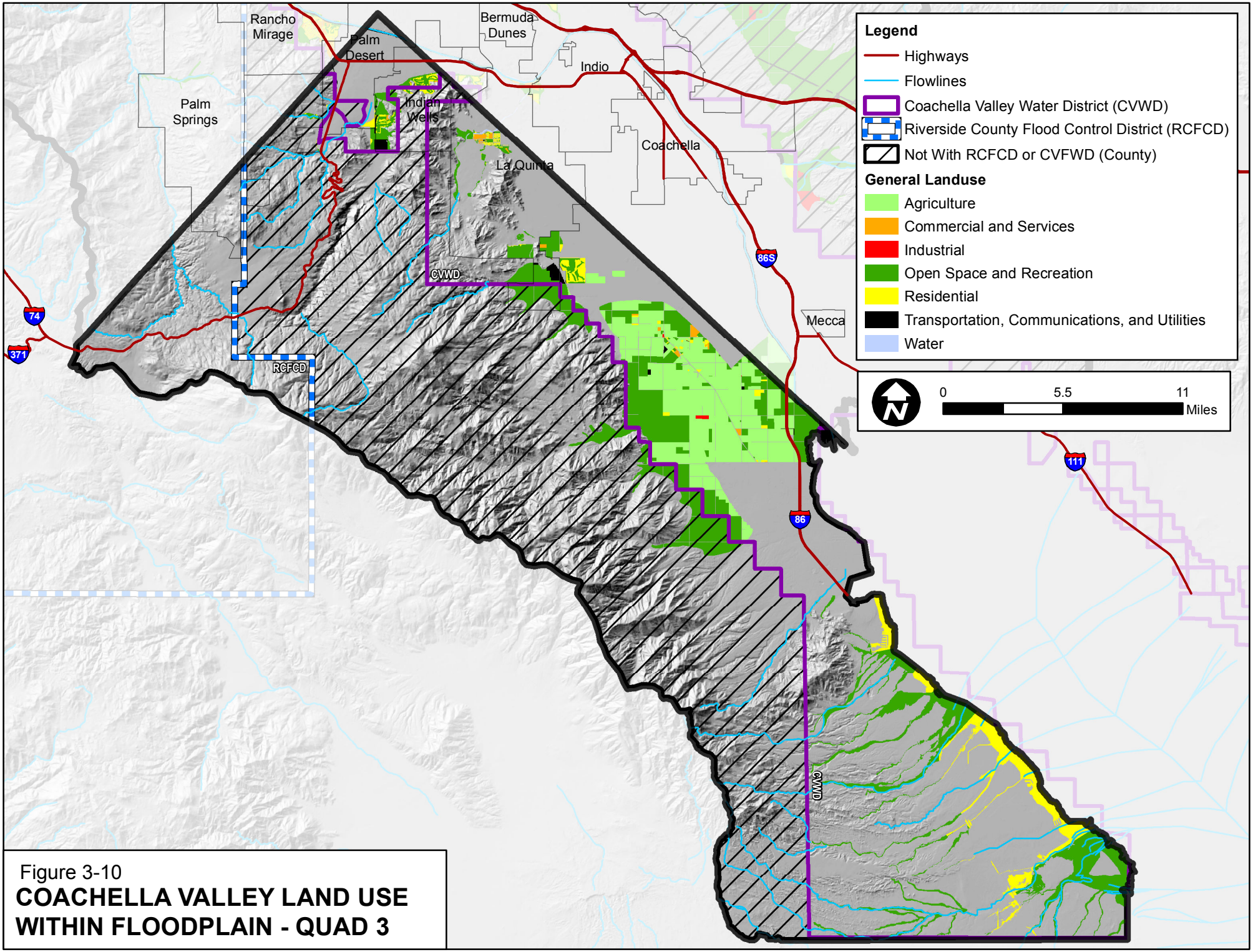


Figure 3-10

**COACHELLA VALLEY LAND USE WITHIN FLOODPLAIN - QUAD 3**

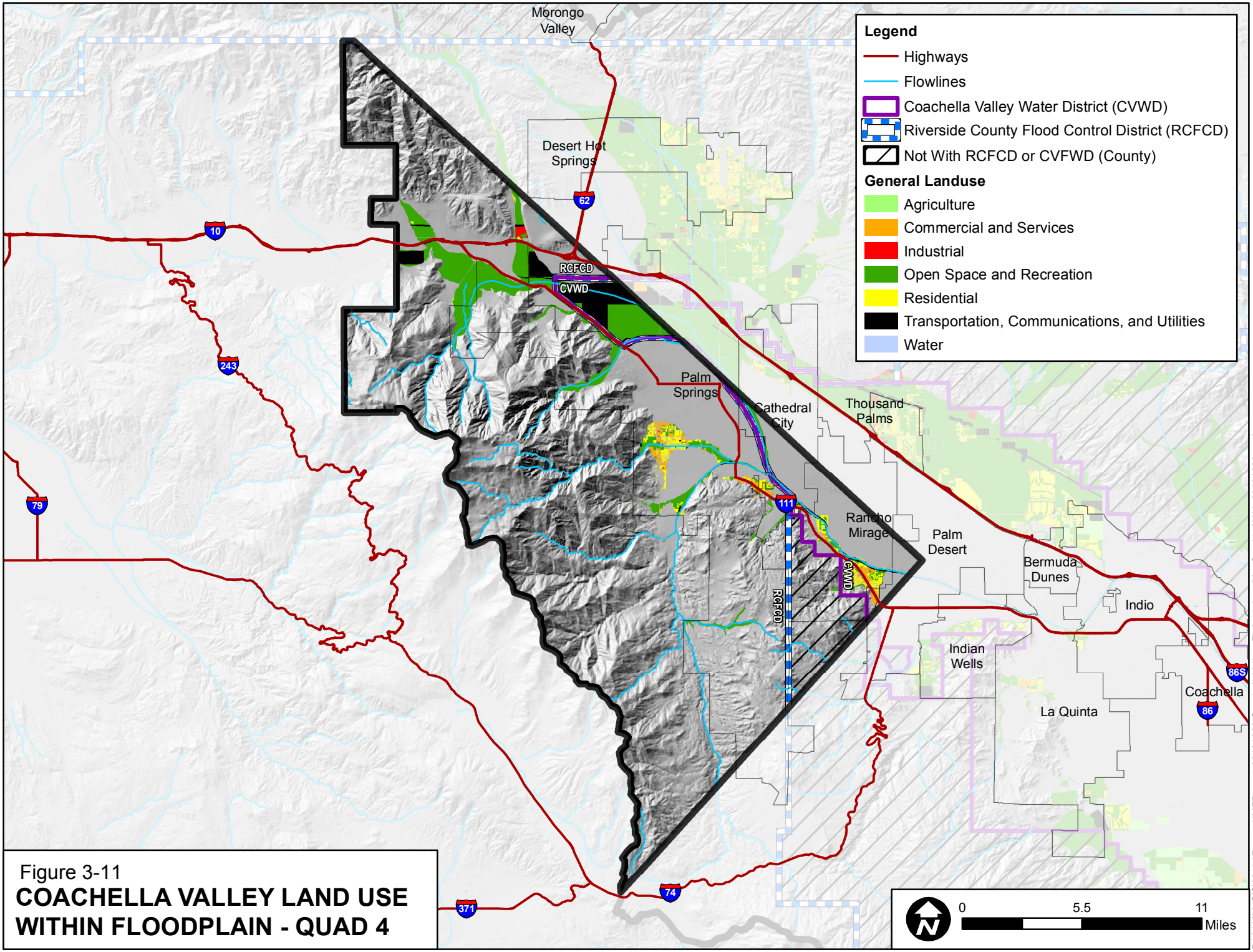


Figure 3-11

**COACHELLA VALLEY LAND USE WITHIN FLOODPLAIN - QUAD 4**

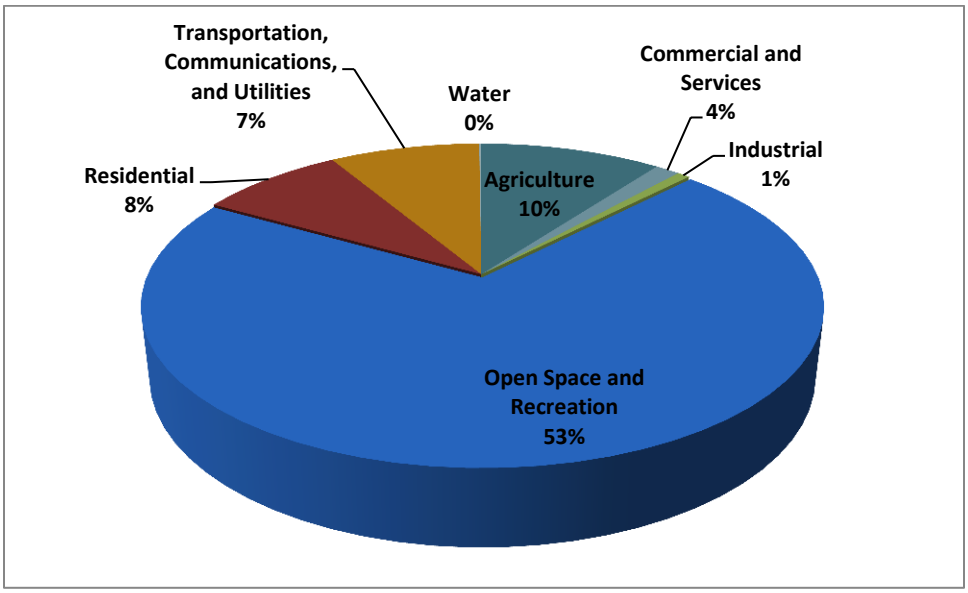


**Figure 3-12: Total distribution of different land uses within mapped floodplain areas for entire Coachella Valley**

**Table 3-2: Land use types located within mapped flood hazard zones based on Four Mapping Quadrants**

| CV Quadrant No.1 - Northeast | |
|---|---|
| **Land use** | **Acres** |
| Agriculture | 262 |
| Commercial and Services | 889 |
| Industrial | 503 |
| Open Space and Recreation | 49105 |
| Residential | 4571 |
| Transportation, Communications, and Utilities | 5135 |
| Water | 0 |
| **TOTAL** | **60,464** |

| CV Quadrant No. 2 - Southeast | |
|---|---|
| **Land use** | **Acres** |
| Agriculture | 1,610 |
| Commercial and Services | 152 |
| Industrial | 462 |
| Open Space and Recreation | 27,564 |
| Residential | 1,956 |
| Transportation, Communications, and Utilities | 3,097 |
| Water | 138 |
| **TOTAL** | **34,979** |

| CV Quadrant No.3 – Southwest | |
|---|---|
| **Land use** | **Acres** |
| Agriculture | 14,188 |
| Commercial and Services | 308 |
| Industrial | 45 |
| Open Space and Recreation | 24,627 |
| Residential | 5,229 |
| Transportation, Communications, and Utilities | 1,590 |
| Water | 45 |
| **Total** | **46,032** |

| CV Quadrant No. 4 – Northwest | |
|---|---|
| **Land use** | **Acres** |
| Agriculture | 16 |
| Commercial and Services | 829 |
| Industrial | 110 |
| Open Space and Recreation | 9,605 |
| Residential | 1,119 |
| Transportation, Communications, and Utilities | 3,510 |
| Water | 0 |
| **Total** | **15,189** |

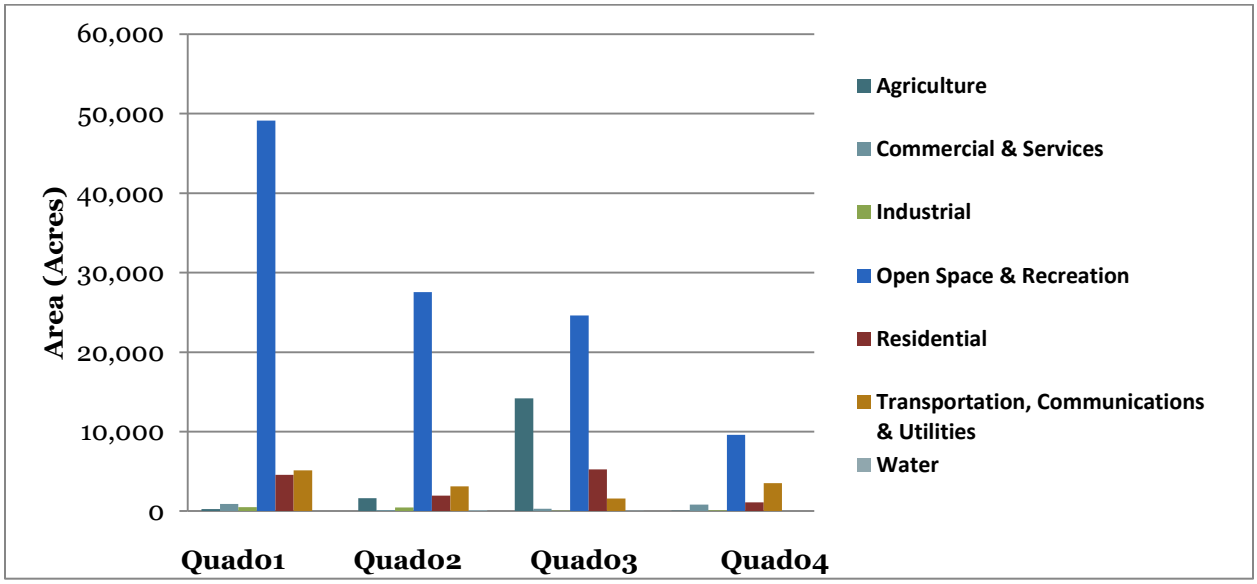


**Figure 3-13: Comparison of the different land uses within the mapped flood hazards within the four different quadrants used in mapping the Coachella Valley**

## 3.6.2 Land Use Located within Flood Hazards – City Boundaries

The amount of the different land uses that are within the mapped flood hazard zones for the different major cities within the Coachella Valley were quantified and are presented in following table. This is a planning level assessment in order to provide an indication of the flood hazard risk based on the existing data for land use within the mapped floodplain. The land use mapping data is from the FEMA DFIRM and the DWR Flood Awareness Mapping.

**Table 3-3: Land use types located within mapped flood hazard zones for Coachella Valley based on different City boundaries**

| **Cathedral City** | **Area (acres)** |
|---|---|
| Agriculture | 0 |
| Commercial and Services | 147 |
| Industrial | 18 |
| Open Space and Recreation | 3,003 |
| Residential | 105 |
| Transportation, Communications, and Utilities | 676 |
| Water | 0 |
| **Grand Total** | **3,948** |

| **Coachella** | **Area (acres)** |
|---|---|
| Agriculture | 0 |
| Commercial and Services | 0 |
| Industrial | 0 |
| Open Space and Recreation | 2,706 |
| Residential | 0 |
| Transportation, Communications, and Utilities | 493 |
| Water | 0 |
| **Grand Total** | **3,199** |

| **Desert Hot Springs** | **Area (acres)** |
|---|---|
| Agriculture | 0 |
| Commercial and Services | 380 |
| Industrial | 25 |
| Open Space and Recreation | 5,579 |
| Residential | 1,578 |
| Transportation, Communications, and Utilities | 1,294 |
| Water | 0 |
| **Grand Total** | **8,856** |

| Indian Wells | Area (acres) |
|---|---|
| Agriculture | 0 |
| Commercial and Services | 26 |
| Industrial | 0 |
| Open Space and Recreation | 1,160 |
| Residential | 347 |
| Transportation, Communications, and Utilities | 279 |
| Water | 6 |
| **Grand Total** | **1,818** |

| Indio | Area (acres) |
|---|---|
| Agriculture | 576 |
| Commercial and Services | 44 |
| Industrial | 9 |
| Open Space and Recreation | 1,580 |
| Residential | 700 |
| Transportation, Communications, and Utilities | 585 |
| Water | 0 |
| **Grand Total** | **3,494** |

| La Quinta | Area (acres) |
|---|---|
| Agriculture | 0 |
| Commercial and Services | 177 |
| Industrial | 0 |
| Open Space and Recreation | 2,472 |
| Residential | 451 |
| Transportation, Communications, and Utilities | 369 |
| Water | 157 |
| **Grand Total** | **3,626** |

| Palm Desert | Area (acres) |
|---|---|
| Agriculture | 0 |
| Commercial and Services | 91 |
| Industrial | 0 |
| Open Space and Recreation | 127 |
| Residential | 102 |
| Transportation, Communications, and Utilities | 172 |
| Water | 1 |
| **Grand Total** | **493** |

| Palm Springs | Area (acres) |
|---|---|
| Agriculture | 0 |
| Commercial and Services | 506 |
| Industrial | 28 |
| Open Space and Recreation | 9,537 |
| Residential | 622 |
| Transportation, Communications, and Utilities | 2,970 |
| Water | 0 |
| **Grand Total** | **13,662** |

| Rancho Mirage | Area (acres) |
|---|---|
| Agriculture | 13 |
| Commercial and Services | 210 |
| Industrial | 4 |
| Open Space and Recreation | 433 |
| Residential | 437 |
| Transportation, Communications, and Utilities | 333 |
| Water | 0 |
| **Grand Total** | **1,430** |

| Unincorporated Imperial County | Area (acres) |
|---|---|
| Agriculture | 0 |
| Commercial and Services | 0 |
| Industrial | 0 |
| Open Space and Recreation | 1,064 |
| Residential | 4,215 |
| Transportation, Communications, and Utilities | 0 |
| Water | 0 |
| **Grand Total** | **5,279** |

| Unincorporated Riverside County | Area (acres) |
|---|---|
| Agriculture | 15,487 |
| Commercial and Services | 597 |
| Industrial | 1,036 |
| Open Space and Recreation | 74,762 |
| Residential | 4,407 |
| Transportation, Communications, and Utilities | 5,160 |
| Water | 33 |
| **Grand Total** | **101,481** |

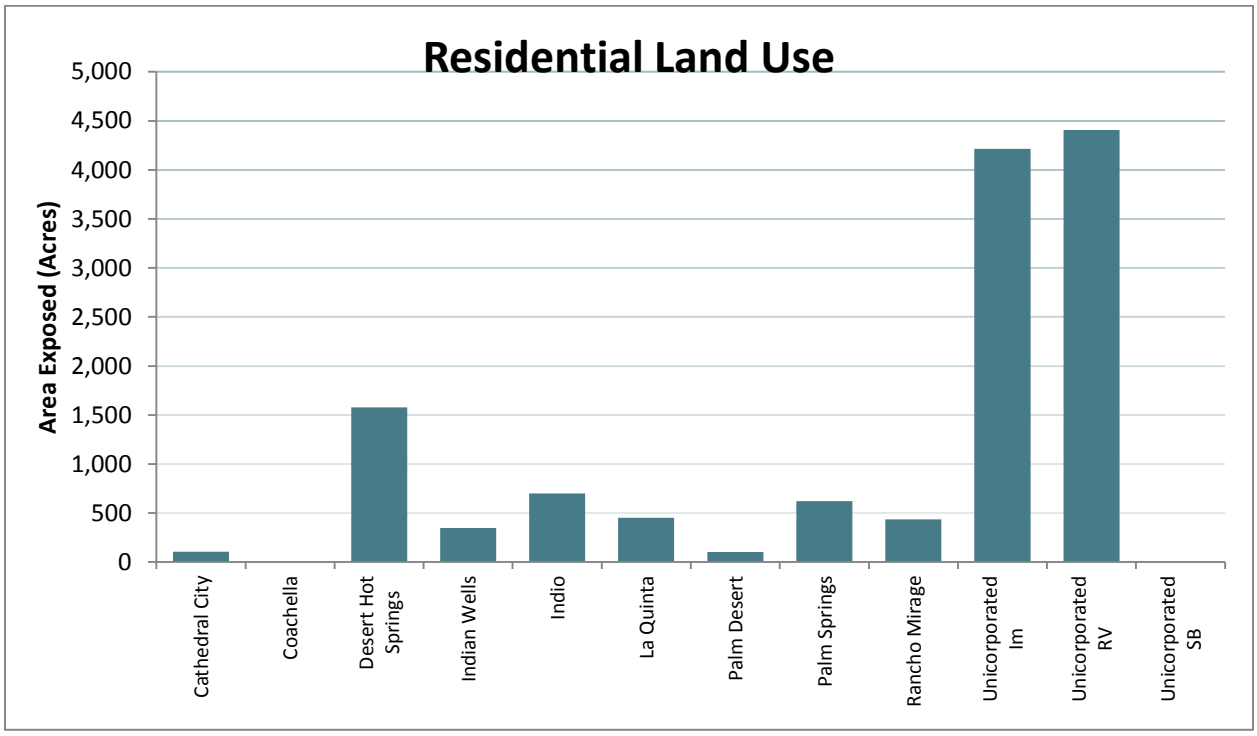


**Figure 3-14: Residential land use within mapped floodplain comparison between the different Cities and County areas within the Coachella Valley**

## 3.6.3 Planning Estimates of Flood Damage Loss Areas

The estimated loss for flood hazards, in addition to exposure, throughout the Coachella Valley IRWM boundary was prepared at a planning level to provide guidance with the watershed planning. "Loss" is that portion of the exposure that is expected to be lost to a hazard. Loss is estimated by referencing frequency and severity of previous hazards. Hazard risk assessment methodologies were applied to flood hazards within the Coachella Valley which were considered to be any land use other than open space within the mapped floodplain. The procedure adopted integrates GIS mapping data to provide dollar damage estimates for the potential impact of flood hazards as a common, systematic framework for evaluation of flood exposure. "Average" flood damage costs for different land uses based on FEMA guidelines and similar values embedded in to the HAZ-US (FEMA national hazard model) were applied to the amount of the different land uses areas within the floodplain. This data included economic and structural data on infrastructure and critical facilities, including replacement value to use in loss estimation assumptions. This approach provides estimates for the potential impact by using a common methodology and database. Uncertainties result from approximations and simplifications that are necessary for a comprehensive analysis (such as incomplete inventories, demographics, or economic parameters). However, the results provide a useful planning level tool to identify locations of high value assets within the watershed and prioritizing flood management projects around these locations in order to reduce the potential dollar damage losses.

The data developed for the different levels of flood exposures/risk based on land uses within the mapped flood hazard zones for each of the regional watersheds was used to develop planning level assessment of the potential economic losses or dollar damage. Studies on flood damage estimates illustrate that the dollar damage for residential and commercial structure increases with flood depth. However, this planning level assessment did not differentiate the variation of flood depths within the floodplain. A generalized dollar damage cost was applied to the different land use categories based upon national information for flood damage. A variety of assumptions were made in averaging these damage costs for a variety of land uses and differing conditions. The results of this assessment are illustrated in Figure 3-15 and Figure 3-16. This illustrates some useful trends related to the locations and most susceptible types of flood damage when planning management activities.

The planning level estimate for flood damages was conducted applying generalized flood damages costs for different land uses or structures associated with those land uses. The methodology that is applied in HAZUS-MH was adopted for this generalized study. Application of the HAZUS-MH for this project would greatly exceed the available study budget and insufficient GIS mapping data as well as detailed flood depth inundation mapping was not available. Flood damage costs are generally associated with the types of structures damage and the depths of flooding, or in agriculture losses the types of crops which would include the value of that crop. The HAZUS-MH model has an extensive library dataset as part of the program for different types of damages around the country. (FEMA, 2012) The data set was utilized to develop average damage costs based on different flood damage assumptions including the depth of flooding since the actual depths are not part of the flood hazard mapping in all areas. Very broad assumptions were necessary in developing the damages estimates given the limited data on the (1) depth of flooding, (2) number and type of structures within the floodplain, and (3) precise value of the different uses including the different types of agriculture crops. The flood damages cost for lumped land use types were generated based on the following information and assumptions from HAZUS-MH dataset:

1. Agricultural flood damage losses were based on the crop loss which includes revenue and reduction for harvest costs for an average value of $35,000 per acre.
2. Residential flood damage losses were based on the structural damage based on 1,800 square feet of main living area per residential unit, 1 story unit, 4 units per acre, 30% flood damage at depth of one-foot for an average value of $250,000 per acre.
3. Commercial land use flood damage was based on a standard 30,000 square foot unit with one unit per acre with an average damage cost of $76 per square foot structure and 30% flood damage for an average value of $684,000 per acre.
4. Industrial land use flood damage was based on a standard 30,000 square foot unit with one unit per acre with average damage costs of $88 per square foot structure and 30% flood damage for an average value of $794,000 per acre.

Transportation land use assumed roadway flood damage and replacement for 200 feet of urban road per square mile valued at $5,000,000 per 3,200 feet and 2 lanes with 30% flood damage for an average value of $91,000 per acre.

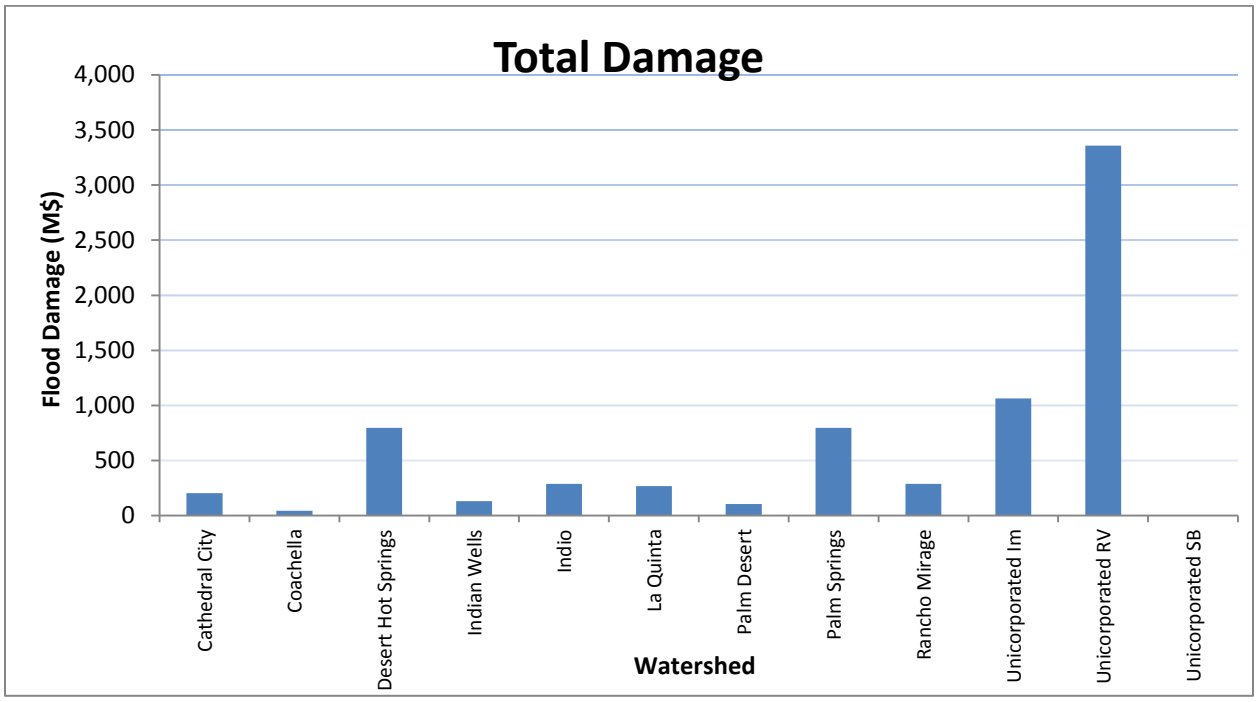


**Figure 3-15: Total estimated 100-year approximate dollar flood damage for all land use within the floodplain comparing different Cities and County areas in the Coachella Valley**

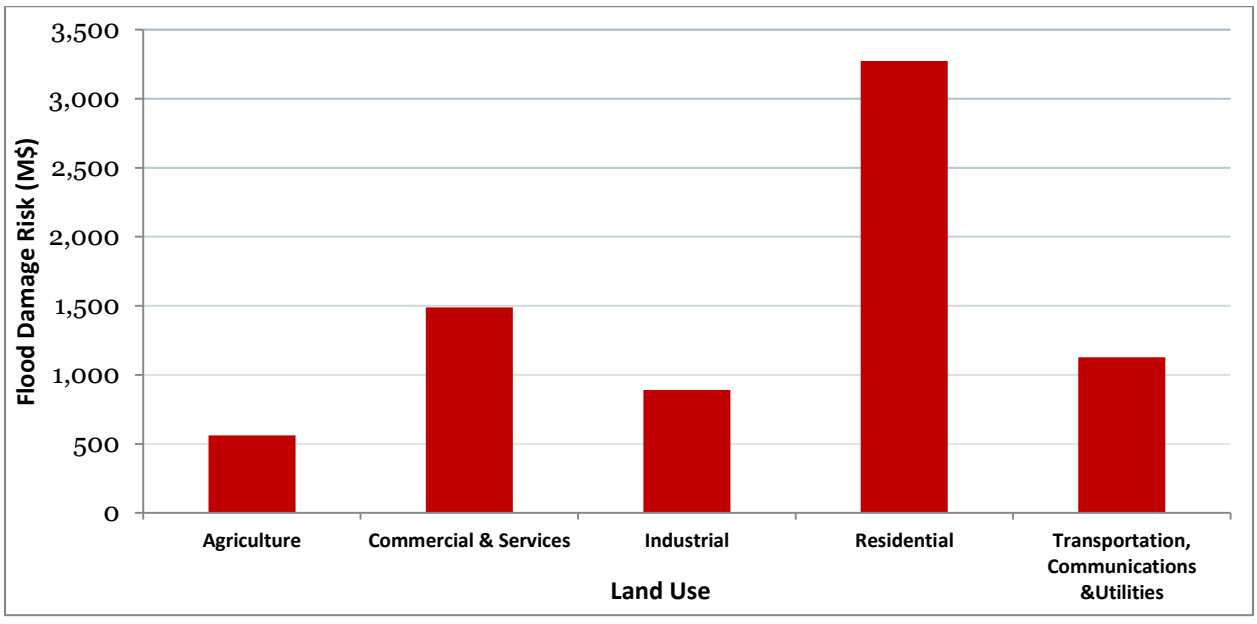


**Figure 3-16: Total estimated 100-year flood damage to the different land use types over all mapped floodplain area within the Coachella Valley**

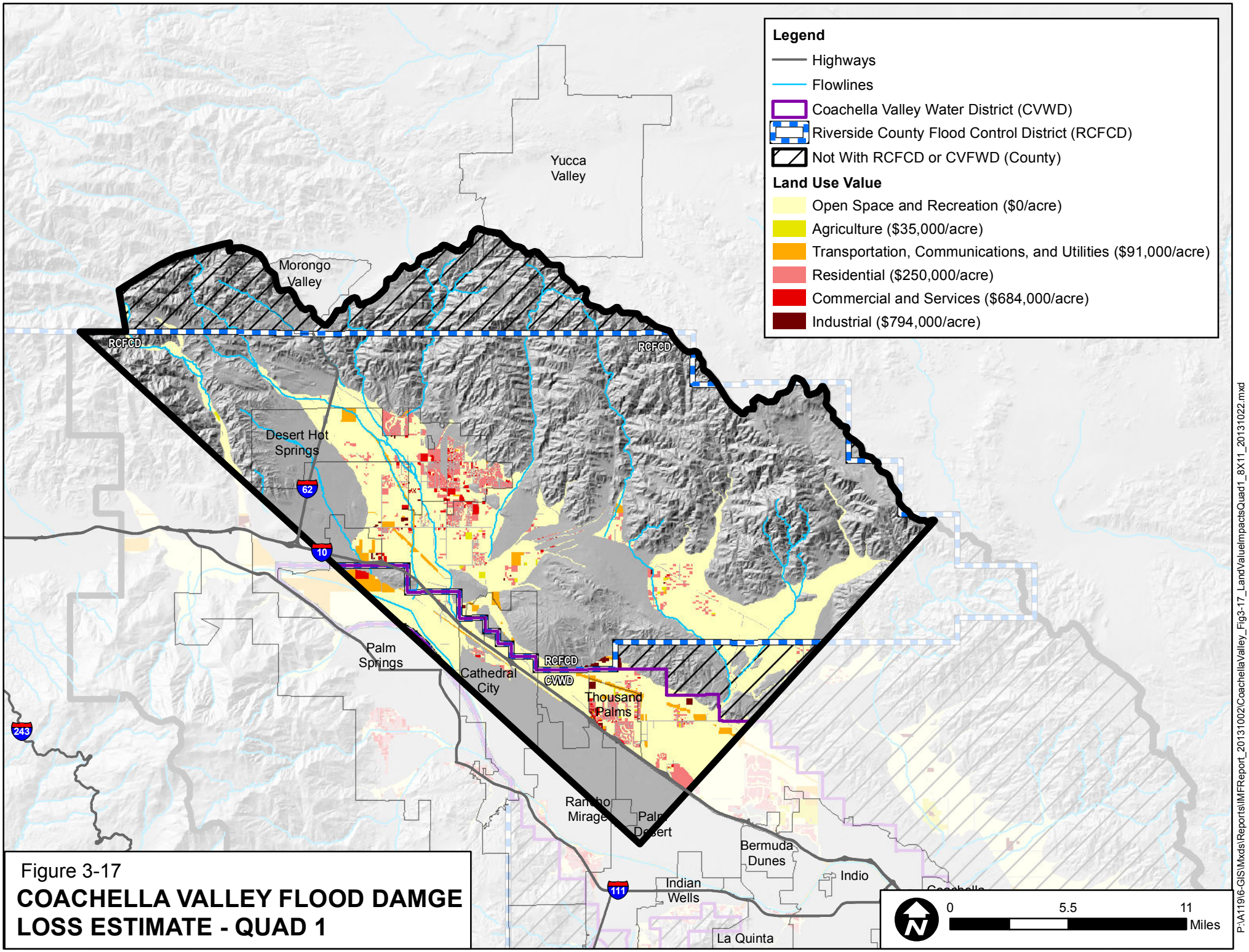


Figure 3-17

**COACHELLA VALLEY FLOOD DAMGE LOSS ESTIMATE - QUAD 1**

P:\A1196-GIS\Mxds\Reports\IMFReport_20131002\CoachellaValley_Fig3-17_LandValueImpactsQuad1_8X11_20131022.mxd

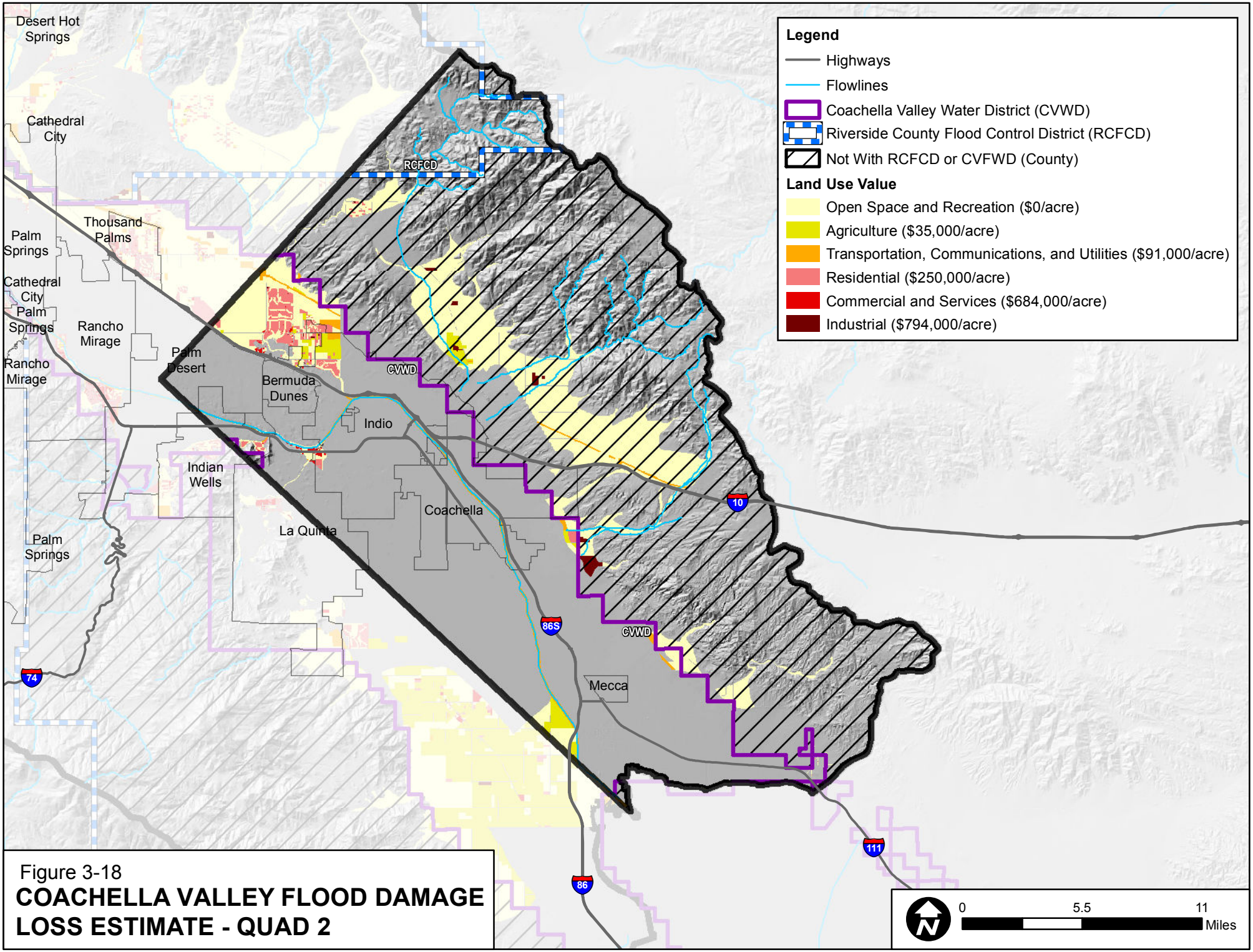


Figure 3-18

**COACHELLA VALLEY FLOOD DAMAGE LOSS ESTIMATE - QUAD 2**

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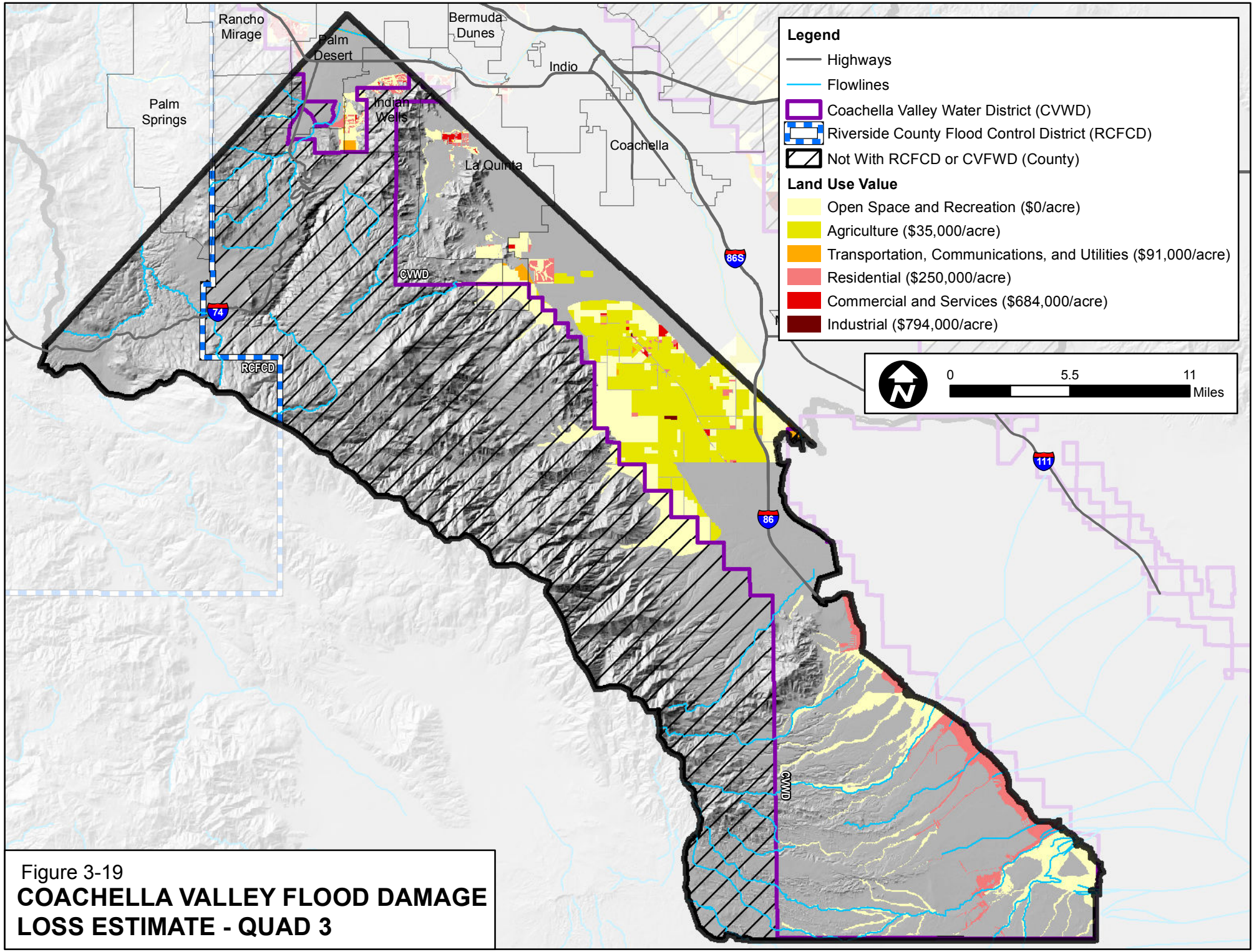


Figure 3-19

**COACHELLA VALLEY FLOOD DAMAGE LOSS ESTIMATE - QUAD 3**

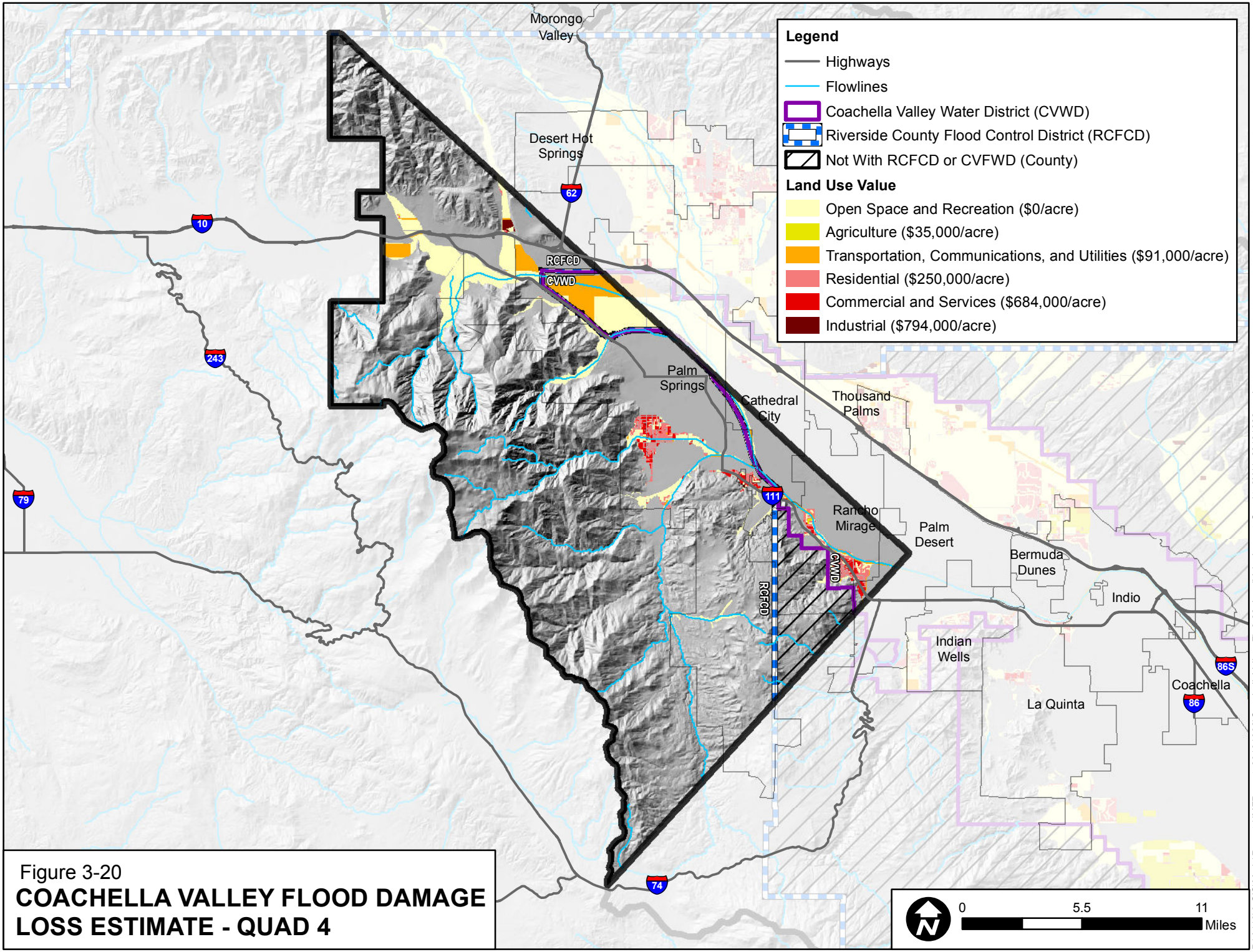


Figure 3-20

**COACHELLA VALLEY FLOOD DAMAGE LOSS ESTIMATE - QUAD 4**

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# 4 Regional Watersheds Description

## 4.1 Regional Watersheds Hydrologic Characteristics

The Coachella IRWM region is comprised of numerous tributary watersheds which originate on the eastern and western side of the valley, or offsite beyond the limits of the IRWM boundary, but are all ultimately to the Salton Sea. These watersheds are either within the CVWD or RCFCWCD jurisdictional boundary and can generally be divided into 12 larger watershed units which are illustrated on Figure 4-1. The designations of these watershed units utilize, for a portion of the study area, the classifications adopted by CVWD for their jurisdictional watersheds within the Coachella Valley.

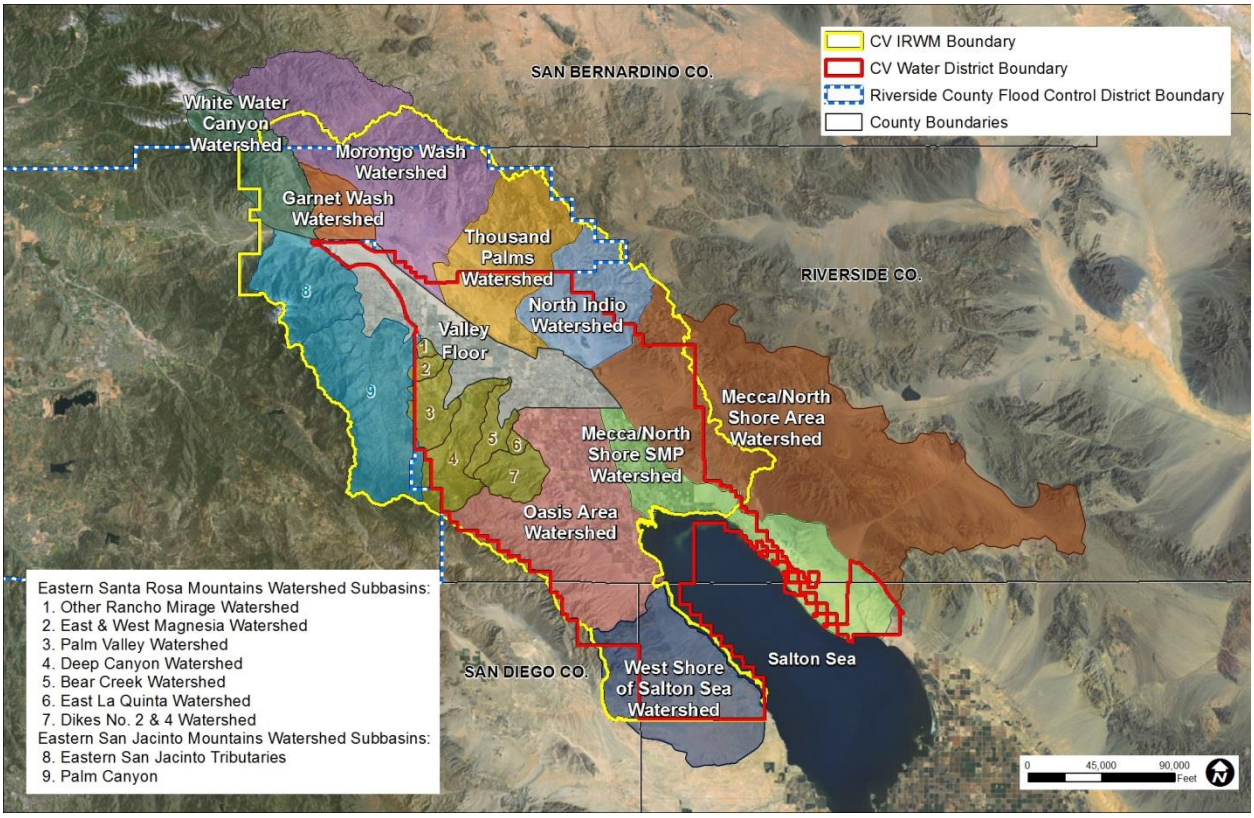


**Figure 4-1: Regional delineation of major watershed units utilized for watershed planning within the Coachella Valley**

The watersheds are the surface hydrology features or the tributary basin areas corresponding to the regional drainage systems and floodplains. The hydrologic response of these watershed units for rainfall events as well as the channel processes/geomorphology trends, which influence the flooding characteristics which are examined at a regional scale. In addition, different characteristics of the watersheds and floodplains that may limit potential flood management solutions are also explored. The "watershed units" provide a useful method to divide the region and basis for focusing on flood management planning utilizing a regional watershed basis.

Characteristic information and watershed parameters were developed for each of the different watershed units to assist in characterizing the different watershed and facilitate understanding the potential response. The watershed characteristics were manually generated utilizing GIS mapping measurements from the topographic and hydrographic datasets.

### 4.1.1 Whitewater Canyon

**Figure 4-2: Whitewater Canyon watershed unit with major population centers**

**Table 4-1: Whitewater Canyon watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 82.8 $mi^2$ |
| Length Naturally Occurring Waterways | 519,851.8 ft |
| Percentage of Free Flowing River | 92% |
| Percentage of River Miles in Protected Lands | 50% |
| Number of Stream Crossings | 13 |
| Average Precipitation per Year | 23.6 in |
| Percentage Area above 15% Slope: | 83% |
| Longest Watershed Flow Path Length | 124,178.6 ft |
| Maximum Elevation | 10,392.4 ft |
| Minimum Elevation | 1,065.3 ft |
| Watershed Elevation Difference | 9,327.1 ft |
| Average Map Slope | 0.075 |

### 4.1.2 Morongo Wash/Mission Creek

**Figure 4-3: Morongo Wash / Mission Creek watershed unit with major population centers**

**Table 4-2: Morongo Wash / Mission Creek watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 265.6 $mi^2$ |
| Length Naturally Occurring Waterways | 2,053,933.9 ft |
| Percentage of Free Flowing River | 95% |
| Percentage of River Miles in Protected Lands | 40% |
| Number of Stream Crossings | 146 |
| Average Precipitation per Year | 12.4 in |
| Percentage Area above 15% Slope: | 71% |
| Longest Watershed Flow Path Length | 138,940.6 ft |
| Maximum Elevation | 4,022.32 ft |
| Minimum Elevation | 248.8 ft |
| Watershed Elevation Difference | 7,779.1 ft |
| Average Map Slope | 0.056 |

### 4.1.3 Garnet Wash

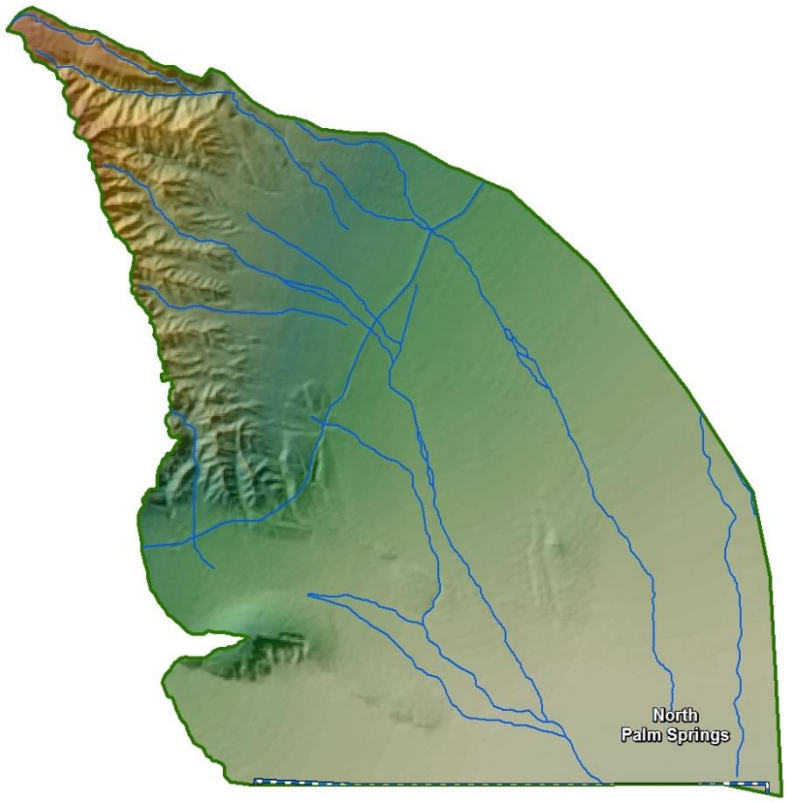


**Figure 4-4: Garnet Wash watershed unit with major population centers**

**Table 4-3: Garnet Wash watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 34.4 $mi^2$ |
| Length Naturally Occurring Waterways | 240,123.4 ft |
| Percentage of Free Flowing River | 90% |
| Percentage of River Miles in Protected Lands | 30% |
| Number of Stream Crossings | 80 |
| Average Precipitation per Year | 9.8 in |
| Percentage Area above 15% Slope: | 17% |
| Longest Watershed Flow Path Length | 57,679.7 ft |
| Maximum Elevation | 3,287.7 ft |
| Minimum Elevation | 718.3 ft |
| Watershed Elevation Difference | 2,569.4 ft |
| Average Map Slope | 0.045 |

### 4.1.4 Eastern San Jacinto Mountains

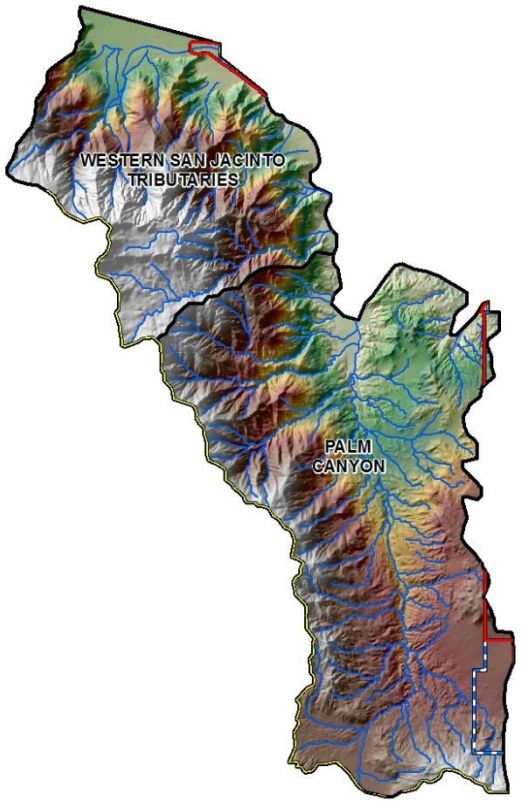


**Figure 4-5: Eastern San Jacinto Mountains watershed unit with major population centers**

**Table 4-4: Eastern San Jacinto Mountains watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 205.0 $mi^2$ |
| Length Naturally Occurring Waterways | 1,500,641.6 ft |
| Percentage of Free Flowing River | 98% |
| Percentage of River Miles in Protected Lands | 61% |
| Number of Stream Crossings | 44 |
| Average Precipitation per Year | 16.7 in |
| Percentage Area above 15% Slope: | 79% |
| Longest Watershed Flow Path Length | 114,355.2 ft |
| Maximum Elevation | 6,014.0 ft |
| Minimum Elevation | 564.8 ft |
| Watershed Elevation Difference | 1,640.5 ft |
| Average Map Slope | 0.014 |

### 4.1.5 Thousand Palms

**Figure 4-6: Thousand Palms watershed unit with major population centers**

**Table 4-5: Thousand Palms watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 134.5 $mi^2$ |
| Length Naturally Occurring Waterways | 651,001.5 ft |
| Percentage of Free Flowing River | 93% |
| Percentage of River Miles in Protected Lands | 89% |
| Number of Stream Crossings | 57 |
| Average Precipitation per Year | 7.6 in |
| Percentage Area above 15% Slope: | 45% |
| Longest Watershed Flow Path Length | 125,572.0 ft |
| Maximum Elevation | 4,762.0 ft |
| Minimum Elevation | 38.4 ft |
| Watershed Elevation Difference | 4,723.6 ft |
| Average Map Slope | 0.038 |

### 4.1.6 Valley Floor

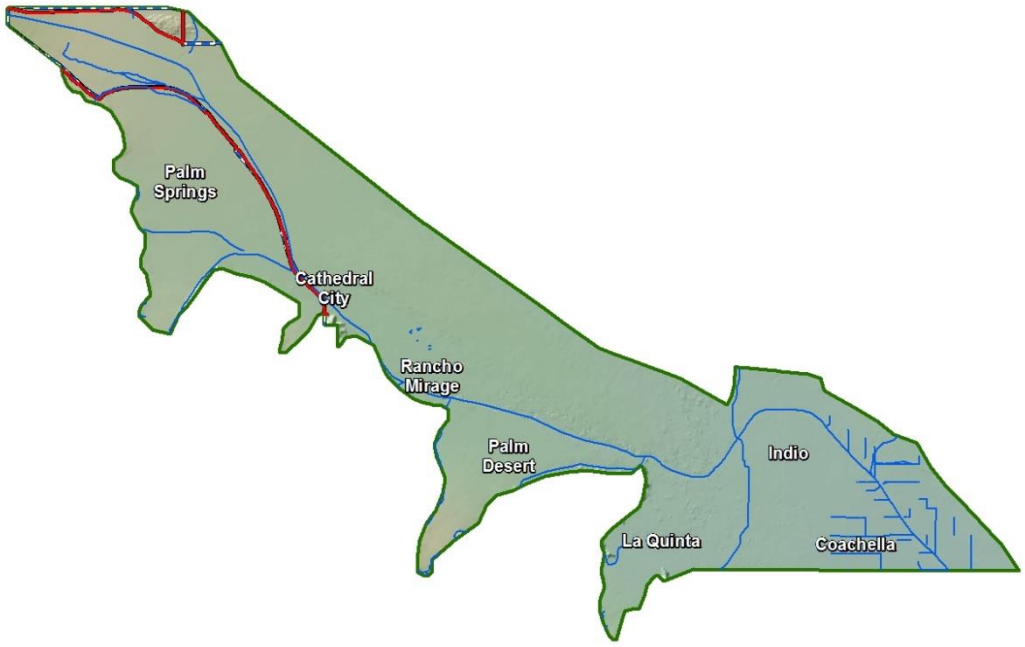


**Figure 4-7: Valley Floor watershed unit with major population centers**

**Table 4-6: Valley Floor watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 140.3 $mi^2$ |
| Length Naturally Occurring Waterways | 205,965.9 ft |
| Percentage of Free Flowing River | 41% |
| Percentage of River Miles in Protected Lands | 25% |
| Number of Stream Crossings | 110 |
| Average Precipitation per Year | 5.2 in |
| Percentage Area above 15% Slope: | 0.9% |
| Longest Watershed Flow Path Length | 187,708.7 ft |
| Maximum Elevation | 1014.1 ft |
| Minimum Elevation | -95.1 ft |
| Watershed Elevation Difference | 1,109.2 ft |
| Average Map Slope | 0.006 |

### 4.1.7 North Indio

**Figure 4-8: North Indio watershed unit with major population centers**

**Table 4-7: North Indio watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 109.4 $mi^2$ |
| Length Naturally Occurring Waterways | 585,792.4 ft |
| Percentage of Free Flowing River | 88% |
| Percentage of River Miles in Protected Lands | 78% |
| Number of Stream Crossings | 67 |
| Average Precipitation per Year | 7.0 in |
| Percentage Area above 15% Slope: | 63% |
| Longest Watershed Flow Path Length | 91,055.8 ft |
| Maximum Elevation | 4,388.9 ft |
| Minimum Elevation | 15.4 ft |
| Watershed Elevation Difference | 4,373.5 ft |
| Average Map Slope | 0.048 |

### 4.1.8 Eastern Santa Rosa Mountains

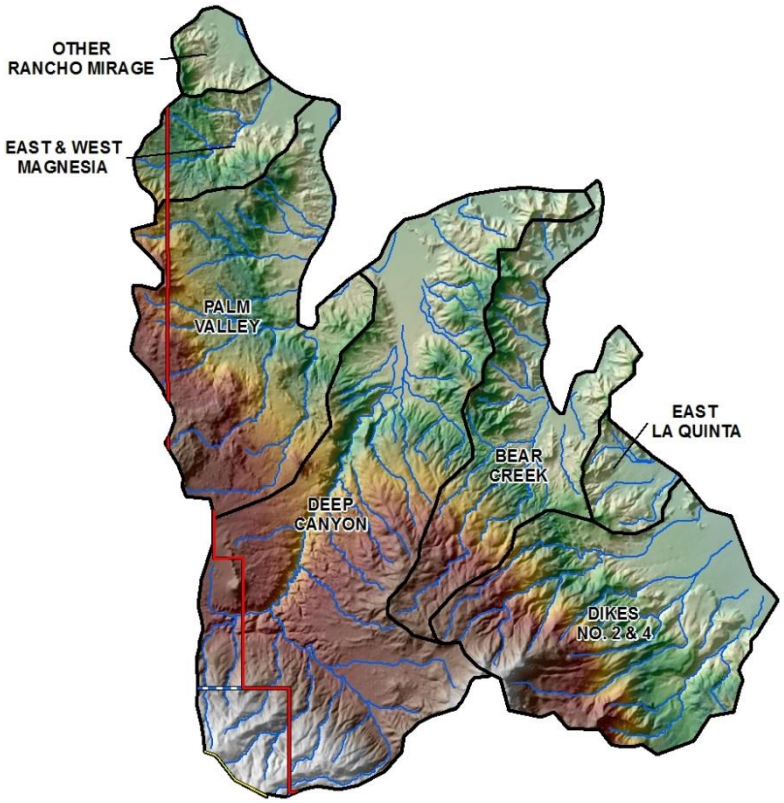


**Figure 4-9: Eastern Santa Rosa Mountains watershed unit with major population centers**

**Table 4-8: Eastern Santa Rosa Mountains watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 129.7 $mi^2$ |
| Length Naturally Occurring Waterways | 1,072,336.2 ft |
| Percentage of Free Flowing River | 99.8% |
| Percentage of River Miles in Protected Lands | 85% |
| Number of Stream Crossings | 82 |
| Average Precipitation per Year | 9.9 in |
| Percentage Area above 15% Slope: | 76% |
| Longest Watershed Flow Path Length | 100,754.2 ft |
| Maximum Elevation | 7,999.8 ft |
| Minimum Elevation | 293.6 ft |
| Watershed Elevation Difference | 7706.2 ft |
| Average Map Slope | 0.076 |

### 4.1.9 Oasis Area

**Figure 4-10: Oasis Area watershed unit with major population centers**

**Table 4-9: Oasis Area watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 231.6 $mi^2$ |
| Length Naturally Occurring Waterways | 1,438,057.2 ft |
| Percentage of Free Flowing River | 57% |
| Percentage of River Miles in Protected Lands | 59% |
| Number of Stream Crossings | 262 |
| Average Precipitation per Year | 7.2 in |
| Percentage Area above 15% Slope: | 43% |
| Longest Watershed Flow Path Length | 122,315.1 ft |
| Maximum Elevation | 7,896.1 ft |
| Minimum Elevation | -194.9 ft |
| Watershed Elevation Difference | 8,091.0 ft |
| Average Map Slope | 0.066 |

### 4.1.10 Mecca / North Shore SMP

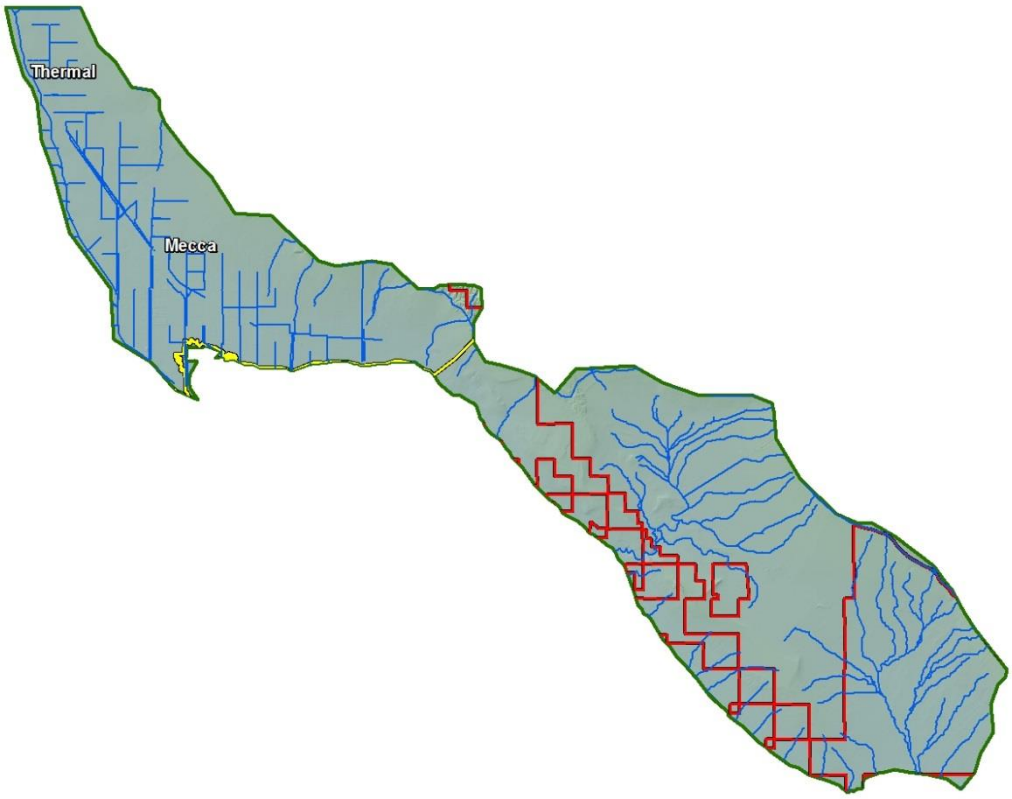


**Figure 4-11: Mecca / North Shore SMP watershed unit with major population centers**

**Table 4-10: Mecca / North Shore SMP watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 151.1 $mi^2$ |
| Length Naturally Occurring Waterways | 740,633 ft |
| Percentage of Free Flowing River | 53% |
| Percentage of River Miles in Protected Lands | 43% |
| Number of Stream Crossings | 60 |
| Average Precipitation per Year | 3.3 in |
| Percentage Area above 15% Slope: | 0.5% |
| Longest Watershed Flow Path Length | 69,024.9 ft |
| Maximum Elevation | -97.9 ft |
| Minimum Elevation | -224.7 ft |
| Watershed Elevation Difference | 322.6 ft |
| Average Map Slope | 0.005 |

### 4.1.11 Mecca / North Shore Area

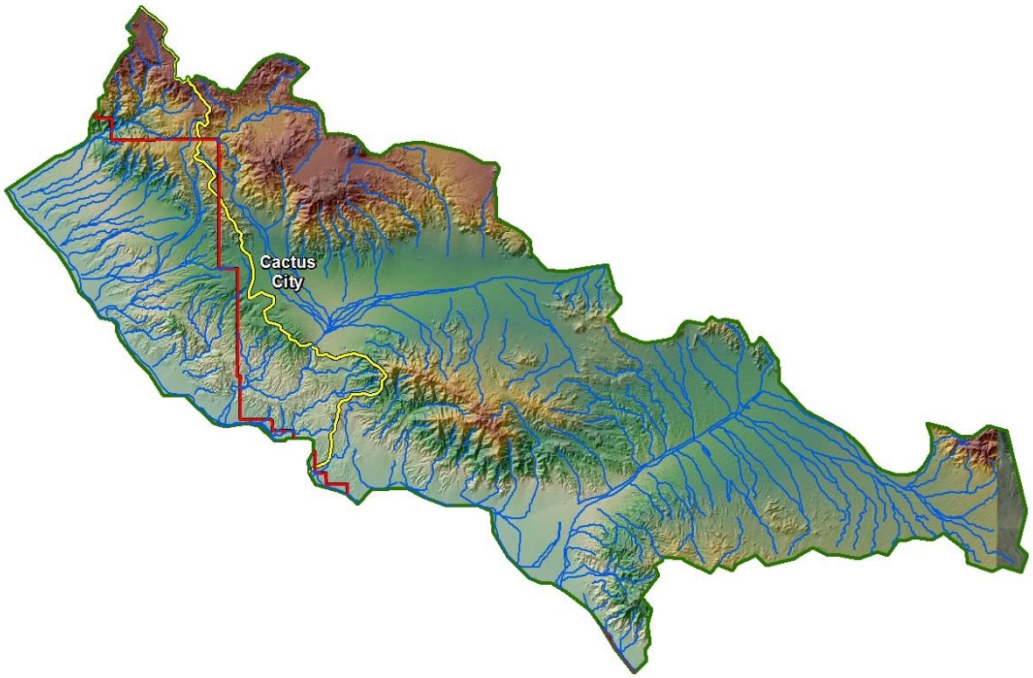


**Figure 4-12: Mecca / North Shore Area watershed unit with major population centers**

**Table 4-11: Mecca / North Shore Area watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 554.9 $mi^2$ |
| Length Naturally Occurring Waterways | 3,651,875 ft |
| Percentage of Free Flowing River | 88% |
| Percentage of River in Protected Lands | 64% |
| Number of Stream Crossings | 148 |
| Average Precipitation per Year | 5.0 in |
| Percentage Area above 15% Slope | 42% |
| Longest Watershed Flow Path Length | 156,923.7 ft |
| Maximum Elevation | 3,953.3 ft |
| Minimum Elevation | 39.9 ft |
| Watershed Elevation Difference | 3,913.0 ft |
| Average Map Slope | 0.025 |

### 4.1.12 West Shore of Salton Sea

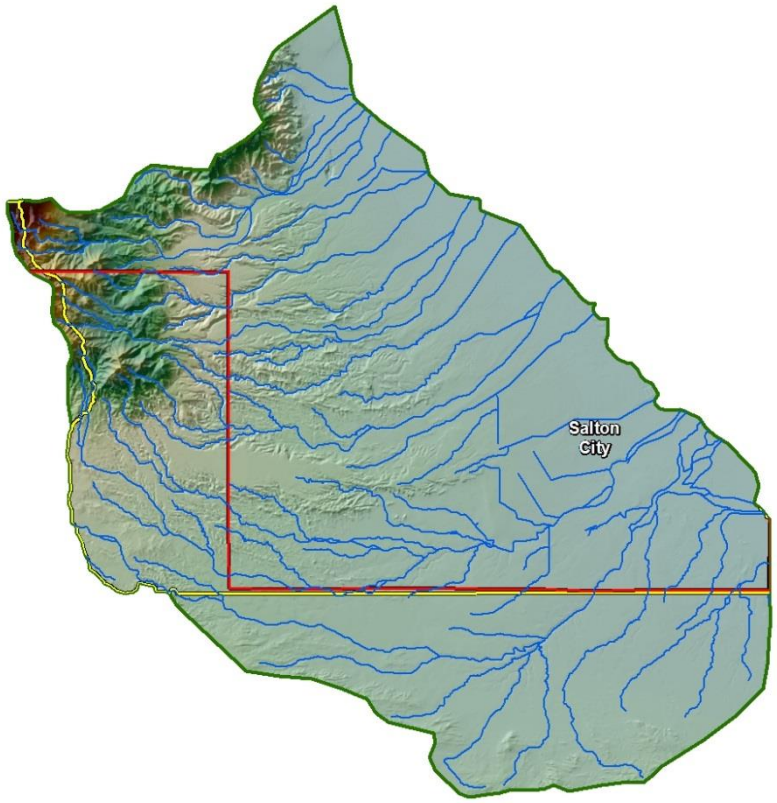


**Figure 4-13: West Shore of Salton Sea watershed unit with major population centers**

**Table 4-12: West Shore of Salton Sea watershed unit characteristics**

| | |
|---|---|
| Watershed Area (sq. Miles) | 172.3 $mi^2$ |
| Length Naturally Occurring Waterways | 1,539,088.6 ft |
| Percentage of Free Flowing River | 95% |
| Percentage of River Miles in Protected Lands | 0% |
| Number of Stream Crossings | 27 |
| Average Precipitation per Year | 4.4 in |
| Percentage Area above 15% Slope: | 19% |
| Longest Watershed Flow Path Length | 101,071.9 ft |
| Maximum Elevation | 595.1 ft |
| Minimum Elevation | -224.9 ft |
| Watershed Elevation Difference | 820.0 ft |
| Average Map Slope | 0.008 |

## 4.2 Metrologic Conditions / Historic Precipitation

The Coachella Valley IRWM Region climate is an extension of the Sonoran Desert and is classified as an extremely arid environment based on the amount of precipitation. Most precipitation falls during the winter months from passing mid-latitude frontal systems from the north and west, nearly all of it as rain, but with snow atop the surrounding mountains. Rain also falls during the summer months as surges of moisture from both the Gulf of Mexico and the Gulf of California are drawn into the area by the desert monsoon. Occasionally, the remnants of a Pacific tropical cyclone can also affect the valley. In 1976, Tropical Storm Kathleen brought torrential rain and catastrophic flooding to the Coachella Valley as it swept in from the Pacific, traversing the region from south to north. The historical variation of the total annual rainfall is illustrated on Figure 4-14 which identifies the wet-years, but this does not necessarily correlate directly to flood events since flooding is general associated with large amount of rainfall in a short period of time.

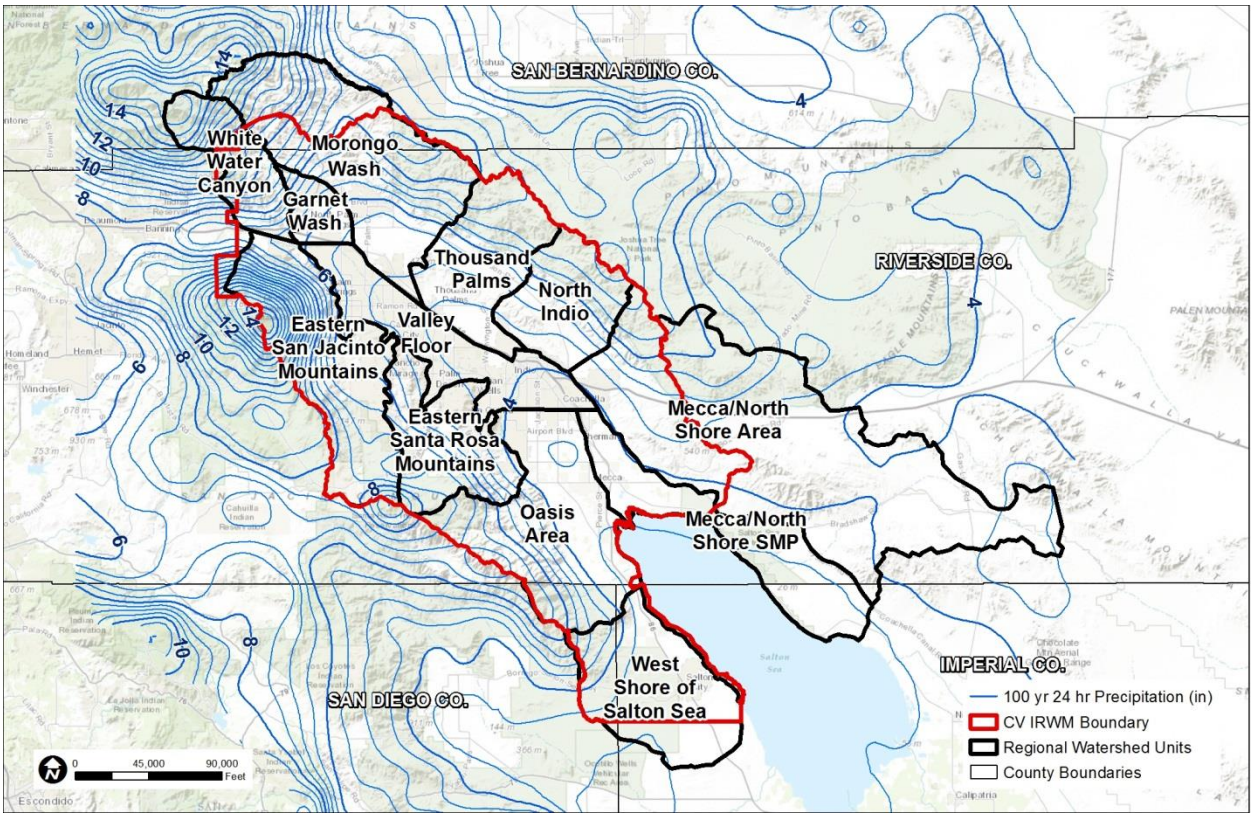


**Figure 4-14: Coachella Valley 100-year 24-hour precipitation in inches variation illustrating lines of constant rainfall (isopluvials)**

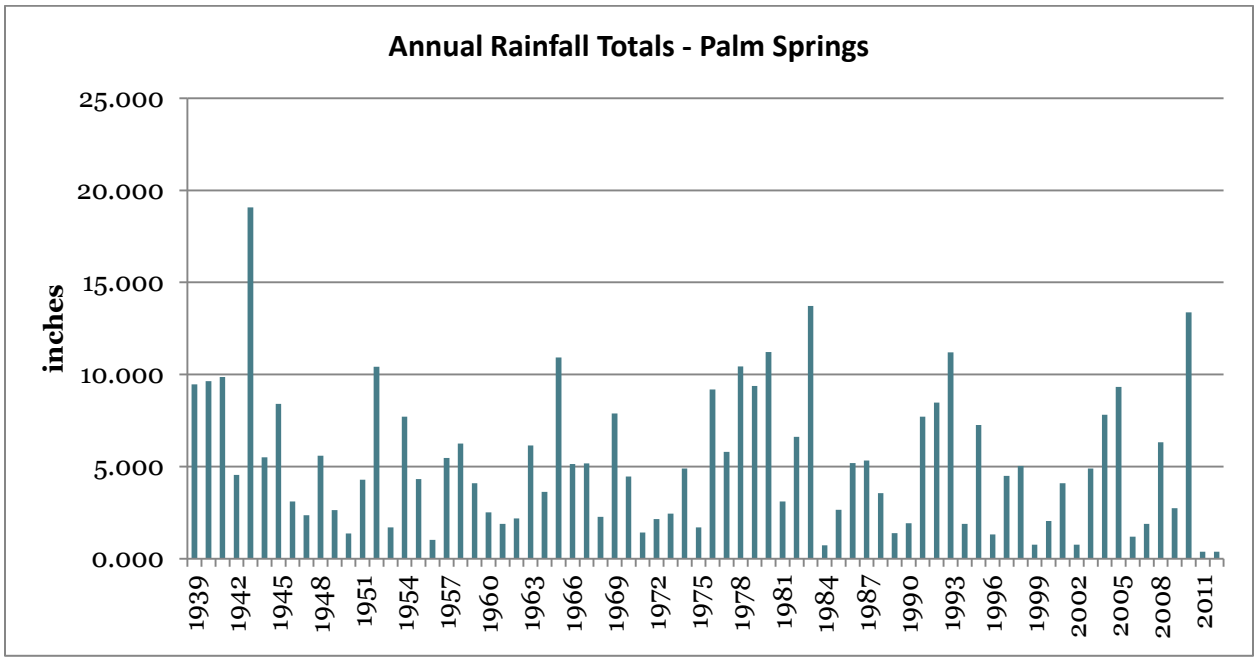


**Figure 4-15: Variation of annual rainfall totals in Coachella Valley (Palm Springs Airport) from the later 1930s**

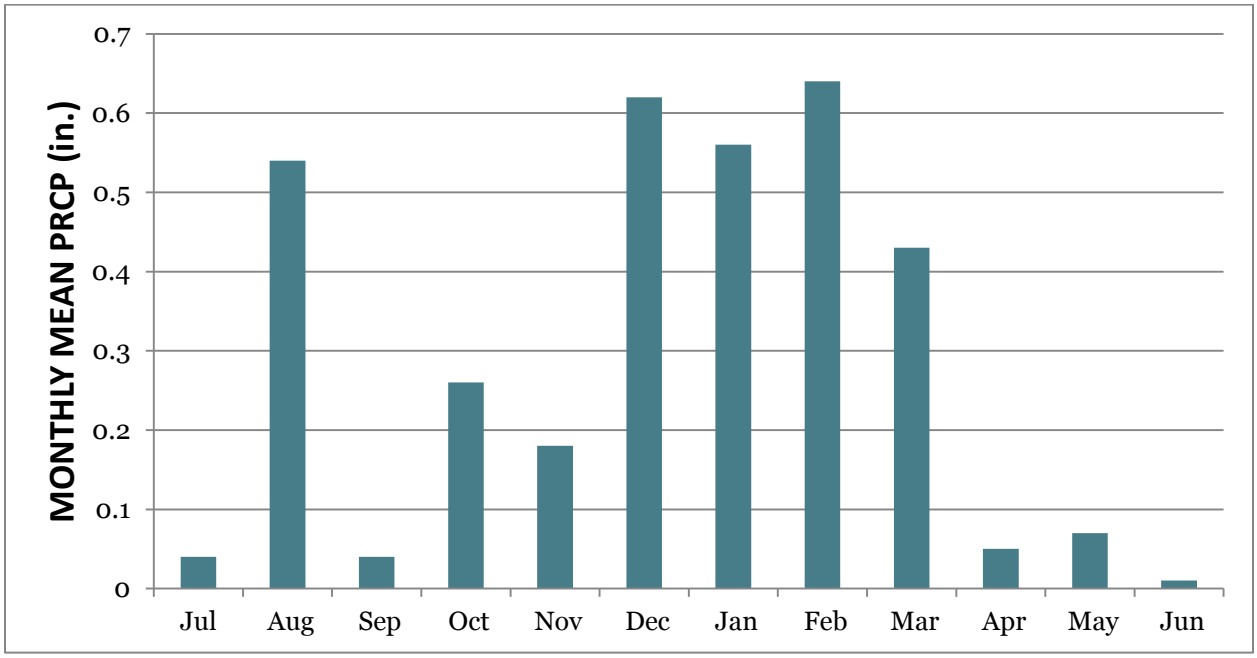


**Figure 4-16: Typical "lower valley" (Indio) average monthly variation of rainfall over the year, noting the months of highest rainfall ()**

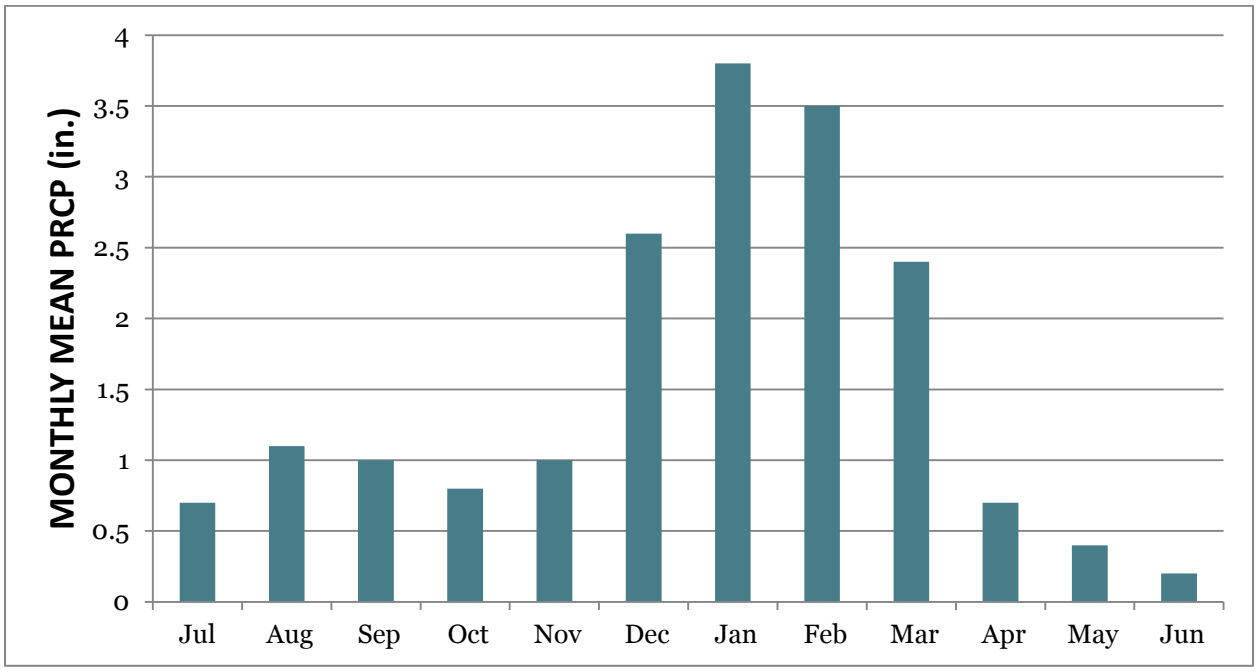


**Figure 4-17: Typical "upper valley" (Palm Springs) average monthly variation of rainfall over the year**

## 4.3 Floodplain Hydrology – Major Regional Flood Sources

The flood hazard mapping generated by FEMA and utilized for the risk/exposure assessment in this study were prepared as part of the original FEMA FIS and this included the engineering hydrologic analyses. The hydrology utilized as 100-year floodplain delineation from the FIS provides a general indication of the magnitude of the flow rate from the different watersheds. A summary of the select larger watersheds hydrology values from the FIS are provided in Table 4-13 below in order to get an understanding of the watershed characteristics and the magnitude of the hydrologic response as part of the watershed planning effort. There may be other watershed studies that have performed more refined hydrology analyses, but the intent is to provide a general understanding of the flow rates generated from the major watersheds for planning purposes. The specific concentration points or location within the watershed is based on the information provided from the FIS (FEMA, 2008).

**Table 4-13: Major Regional Flood Sources**

| Flooding Source / Location | Drainage Area (square miles) | Peak Discharge (cfs) | | |
|---|---|---|---|---|
| | | 10-year (10% chance) | 50-year (2% chance) | 100-year (1% chance) |
| **Big Morongo Wash** | | | | |
| At Pierson Blvd. | 41.98 | 1,000 | 6,590 | 11,560 |
| **Blind Canyon Channel** | | | | |
| At Confluence w/ Desert Hot Springs Channel | 4.6 | 560 | 1,900 | 2,800 |
| Approx. 2,500 feet upstream of West 16th St. | 4.6 | 560 | 1,900 | 2,800 |
| At Confluence w/ Colorado River Aqueduct | 3.2 | 440 | 1,500 | 2,200 |
| **Dead Indian Canyon** | | | | |
| At Della Robia Ln. | 16.5 | 1,000 | 4,200 | 6,700 |
| Approx. 200 feet South of Della Robia Ln. | 16.2 | 1,000 | 4,200 | 6,700 |
| **Deep Canyon Channel** | | | | |
| Approx. 1,000 feet East of Haystack Channel Junction | 63.8 | 2,000 | 8,200 | 13,000 |
| At Buckboard Trail | 63.1 | 2,000 | 8,200 | 13,000 |
| **Deep Canyon Storm Water Channel** | | | | |
| At Whitewater River | 68.7 | 2,000 | 8,600 | 14,000 |
| At Camino Del Ray | 67.4 | 2,000 | 8,600 | 14,000 |
| Approx. 700 feet South of El Dorado Dr. | 66.2 | 2,000 | 8,200 | 13,000 |
| Approx. 1,000 feet east of Haystack Channel Junction | 63.8 | 2,000 | 8,200 | 13,000 |
| At Buckboard Trail | 63.1 | 2,000 | 8,200 | 13,000 |
| **Desert Hot Springs Channel** | | | | |
| At Confluence w/ Big Morongo Wash | 8.2 | 600 | 2,000 | 3,000 |
| Approx. 500 feet South of West 8th St. | 7.9 | 600 | 2,000 | 3,000 |
| Below Confluence w/ Blind Canyon Channel | 5.8 | 600 | 2,000 | 3,000 |
| At Palm Dr. | 1.0 | 200 | 660 | 1,000 |
| At Verbena Dr. | 0.5 | 160 | 330 | 500 |
| **Dry Morongo Wash** | | | | |
| At Apex | 8.91 | 500 | 3,060 | 5,170 |
| **East Rancho Mirage Storm Channel** | | | | |
| At Confluence w/ Palm Valley Drain | 0.9 | 120 | 510 | 860 |
| Approx. 4,000 feet Southwest of Indian Trail Rd. | 0.4 | 70 | 300 | 500 |

| Flooding Source / Location | Drainage Area (square miles) | Peak Discharge (cfs) | | |
|---|---|---|---|---|
| | | 10-year (10% chance) | 50-year (2% chance) | 100-year (1% chance) |
| **Haystack Channel** | | | | |
| At Confluence w/ Deep Canyon Channel | 0.70 | 100 | 440 | 730 |
| At Medina Dr. | 0.10 | 30 | 120 | 200 |
| Approx. 1,500 feet Upstream of Medina Dr. | 0.05 | 20 | 80 | 131 |
| **Little Morongo Wash** | | | | |
| At Pierson Blvd. | 63.71 | 1,250 | 9,090 | 16,420 |
| **Long Canyon** | | | | |
| At 2S./5E.-34 SW Corner | 26.01 | 6,570 | 11,300 | 13,350 |
| **Magnesia Springs Channel** | | | | |
| At Confluence w/ Whitewater River | 5.2 | 480 | 2,100 | 3,400 |
| Approx. 4,000 feet Southwest of Indian Trail Rd. | 4.7 | 460 | 2,000 | 3,200 |
| **Martinez Canyon** | | | | |
| Martinez Canyon | 48.5 | 2,219 | 7,948 | 12,376 |
| **Mission Creek** | | | | |
| At Highway 62 | 41.09 | 1,930 | 8,480 | 13,170 |
| **North Cathedral Channel** | | | | |
| Downstream of Confluence w/ Tramview Wash | 3.9 | 400 | 1,550 | 2,600 |
| **Palm Canyon Wash** | | | | |
| Downstream of Confluence w/ Tahquitz Creek | 138.8 | 4,600 | 17,000 | 25,000 |
| **Palm Desert Channel** | | | | |
| Downstream of Confluence with Palm Desert Channel Tributary | 18.0 | 1,000 | 4,400 | 7,000 |
| At State Highway 74 | 1.40 | 160 | 800 | 1,250 |
| **Palm Valley Stormwater Channel** | | | | |
| At Confluence w/ Whitewater River | 9.70 | 700 | 3,000 | 5,000 |
| At Park View Dr. Upstream of Confluence w/ Diversion Channel | 8.40 | 640 | 2,700 | 4,600 |
| At Pitahaya St. | 7.90 | 620 | 2,700 | 4,500 |
| At Willow St. | 7.00 | 560 | 2,500 | 4,200 |
| Approx. 1,500 feet Southwest of State Highway 74 and Bel Air Rd. | 6.20 | 520 | 2,400 | 3,800 |
| At Starburst Dr. | 4.60 | 450 | 2,000 | 3,200 |

| Flooding Source / Location | Drainage Area (square miles) | Peak Discharge (cfs) | | |
|---|---|---|---|---|
| | | 10-year (10% chance) | 50-year (2% chance) | 100-year (1% chance) |
| **Pushawalla Canyon** | | | | |
| At Apex | 33.7 | 3,460 | 6,680 | 8,050 |
| **Thousand Palms Canyon** | | | | |
| At Apex | 84.1 | 5,330 | 11,170 | 14,510 |
| **Thousand Palms Tributary A** | | | | |
| At Apex | 1.4 | 640 | 980 | 1,160 |
| **Thousand Palms Tributary B** | | | | |
| At Apex | 0.9 | 560 | 850 | 1,000 |
| **Thousand Palms Tributary C** | | | | |
| At Apex | 1.1 | 680 | 1,030 | 1,220 |
| **Thousand Palms Main Channel** | | | | |
| At Apex | 7.5 | 1,240 | 2,350 | 2,820 |
| **Thunderbird Wash** | | | | |
| At Confluence w/ Whitewater River | 1.0 | 120 | 550 | 920 |
| At Pecos Rd. | 0.6 | 90 | 400 | 660 |
| At Thunderbird Rd. | 0.4 | 70 | 300 | 500 |
| **Tramview Tributary** | | | | |
| At State Highway 111 | 1.1 | 180 | 700 | 1,160 |
| **Tramview Wash** | | | | |
| Approx. 230 feet Upstream of Upstream Corporate Limits | 1.7 | 240 | 920 | 1,530 |
| **Whitewater River** | | | | |
| At Salton Sea | 1,600 | 8,500 | 27,000 | 43,000 |
| At Point Happy | 843 | 8,500 | 27,000 | 43,000 |
| Downstream of Confluence with Palm Canyon Wash | 743 | 9,000 | 30,000 | 47,000 |
| Below Palm Valley Drain | * | 8,800 | 28,000 | 46,000 |

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# 5 Integrated Flood Management (IFM) Planning Guiding Principles

## 5.1 Overview of IFM and Basic Planning Principles

IFM deviates from traditional flood protection approaches since IFM combines land and water resources development within a watershed, within the context of IRWM, and with a focus on maximizing the efficient use/net benefit of floodplain while promoting public safety. IFM is a process that promotes an integrated, rather than fragmented, approach to flood management and recognizes the connection of flood management actions to water resources management, land use planning, environmental stewardship, and sustainability. Traditional flood management practices focus on reducing the chance of flooding and flood damages through physical measures intended to store and convey floodwaters away from areas to be protected. Although this approach can reduce the intensity and frequency of flooding, it can also limit the floodplain's natural function and have other unintended consequences. In addition, the traditional approach has typically been reactive or piecemeal in addressing the negative aspects of flooding without looking at the larger watershed processes and riverine ecosystem.

IFM uses various techniques to manage flooding, including structural projects (such as levees), nonstructural measures (such as land use practices), and natural watershed functions. Depending on the characteristics of individual watersheds, various resource management strategies may be used, such as: agricultural land stewardship, conjunctive water management, conveyance, ecosystem restoration, forest management, land use planning and management, surface storage, system reoperations, urban runoff management and watershed management. In recent years, flood managers have recognized the potential for natural watershed features to reduce the intensity or duration of flooding. Natural watershed features include: undeveloped floodplains that can store and slowly release floodwaters and wetlands acting as sponges, soaking up floodwaters, filtering runoff, and providing opportunities for infiltration to groundwater. Natural watershed features also include healthy forests, meadows, and other open spaces that can slow runoff during smaller flood events, reducing peak lows, mudslides, and sediment loads in streams.

### 5.1.1 Basic Planning Principles of IFM

Table 5-1 provides basic guiding principles that provide the foundation in planning integrated flood management.

## Table 5-1: Basic guiding principles of integrated flood management planning

**1. Every flood risk scenario is different: there is no flood management blueprint**.
Understanding the type, source and probability of flooding, the exposed assets and their vulnerability are all essential if the appropriate urban flood risk management measures are to be identified. The suitability of measures to context and conditions is crucial: a flood barrier in the wrong place can make flooding worse by stopping rainfall from draining into the river or by pushing water to more vulnerable areas downstream, and early warning systems can have limited impact on reducing the risk from flash flooding.

**2. Designs for flood management must be able to cope with a changing and uncertain future**.
The impact of urbanization on flood management is currently and will continue to be significant. But it will not be wholly predictable into the future. In addition, in the present day and into the longer term, even the best flood models and climate predictions result in a large measure of uncertainty. This is because the future climate is dependent on the actions of unpredictable humans on the climate – and because the climate is approaching scenarios never before seen. Flood risk managers need therefore to consider measures that are robust to uncertainty and to different flooding scenarios under conditions of climate change.

**3. Rapid urbanization requires the integration of flood risk management into regular urban planning and governance.**
Urban planning and management which integrates flood risk management is a key requirement, incorporating land use, shelter, infrastructure and services. The rapid expansion of urban built up areas also provides an opportunity to develop new settlements that incorporate integrated flood management at the outset. Adequate operation and maintenance of flood management assets is also an urban management issue.

**4. An integrated strategy requires the use of both structural and non-structural measures and good metrics for "getting the balance right".**
The two types of measure should not be thought of as distinct from each other. Rather, they are complementary. Each measure makes a contribution to flood risk reduction but the most effective strategies will usually combine several measures – which may be of both types. It is important to identify different ways to reduce risk in order to select those that best meet the desired objectives now – and in the future.

**5. Heavily engineered structural measures can transfer risk upstream and downstream.**
Well-designed structural measures can be highly effective when used appropriately. However, they characteristically reduce flood risk in one location while increasing it in another. Urban flood managers have to consider whether or not such measures are in the interests of the wider catchment area.

**6. It is impossible to entirely eliminate the risk from flooding. Hard-engineered measures are designed to defend to a pre-determined level.**
They may fail. Other non-structural measures are usually designed to minimize rather than prevent risk. There will always remain a residual risk which should be planned for. Measures should also be designed to fail gracefully rather than, if they do fail, causing more damage than would have occurred without the measure.

**7. Many flood management measures have multiple co-benefits over and above their flood management role.**
The linkages between flood management, urban design, planning and management, and climate change initiatives are beneficial. For example, the greening of urban spaces has amenity value, enhances biodiversity, protects against urban heat island and can provide fire breaks, urban food production and evacuation space. Improved waste management has health benefits as well as maintaining drainage system capacity and reducing flood risk.

**8. It is important to consider the wider social and ecological consequences of flood management spending.**
While costs and benefits can be defined in purely economic terms, decisions are rarely based on economics alone. Some social and ecological consequences such as loss of community cohesion and biodiversity are not readily measureable in economic terms. Qualitative judgments must therefore be made by city managers, communities at risk, urban planners and flood risk professionals on these broader issues.

**9. Clarity of responsibility for constructing and running flood risk programs is critical.**
Integrated urban flood risk management is often set within and can fall between the dynamics and differing incentives of decision-making at national, regional, municipal and community levels. Empowerment and mutual ownership of the flood problem by relevant bodies and individuals will lead to positive actions to reduce risk.

**Table 5-1: Basic guiding principles of integrated flood management planning**

| |
|---|
| **10. Implementing flood risk management measures requires multi-stakeholder cooperation.**<br>Effective engagement with the people at risk at all stages is a key success factor. Engagement increases compliance, generates increased capacity and reduces conflict. This needs to be combined with strong, decisive leadership and commitment from national and local governments. |
| **11. Continuous communication to raise awareness and reinforce preparedness is necessary.**<br>Ongoing communication counters the tendency of people to forget about flood risk. Even a major disaster has a half-life of memory of less than two generations and other more immediate threats often seem more urgent. Less severe events can be forgotten in less than three years. |
| **12. Plan to recover quickly after flooding and use the recovery to build capacity.**<br>As flood events will continue to devastate communities despite the best flood risk management practices, it is important to plan for a speedy recovery. This includes planning for the right human and financial resources to be available. The best recovery plans use the opportunity of reconstruction to build safer and stronger communities which have the capacity to withstand flooding better in the future. |

## 5.1.2 General Elements of IFM

An integrated strategy usually requires the use of both structural and non-structural solutions. It is important to recognize the level and characteristics of existing risk and likely future changes in risk. Integrated flood management also includes the recognition that flood risk can never be entirely eliminated and that resilience to flood risk can include enhancing the capacity of people and communities to adapt to and cope with flooding.

The defining characteristic of IFM is integration simultaneously occurring in different forms such as: mix of different strategies, types of mitigation (structural and non-structural), short-term or long-term, and a participatory approach by multiple agency stakeholders within the watershed to decision making. Key elements of IFM would include:

**Enhanced Level of Watershed Stakeholder Communication**

- Open communication and participation by stakeholders, planners, and decision makes at all levels.
- Public consultation and involvement of watershed stakeholders for decision-making
- Promote coordination/communication across jurisdiction boundaries within the watershed including information management and exchange

**Integrate Land and Water Management**

- Land use planning and water management combined through coordination authorities to obtain consistency in planning
- Main elements of watershed management (water quantity, water quality, and processes of erosion/sedimentation) should be linked in planning
- Effect of land use changes on the hydrologic cycles should be evaluated and considered

**Manage the Water Cycle as a Whole**

- Resource management using an ecosystem approach

- Flood management linked with drought management in the effective use of flood water
- Promote multi-benefit solutions that achieve multiple water resource benefits simultaneously

**Adopt a Best-Mix of Strategies**

- Flood management strategies should involve a combination of complementary strategies
- Formulate a layered strategy based on economic and watershed characteristics that is adaptable to changing conditions
- Appropriate combination of structural and non-structural measures should be evaluated recognizing the different advantage and disadvantages for the most effective plan

**Adopt Integrated Hazard Management Approaches**

- Flood management should be integrated into the risk management process

## 5.2 General Flood Management Opportunities / Constraints

The characteristics of the region provide background into understanding the both potential opportunities as well as constraints for developing potential IFM solutions for the existing flood hazards. Flood management projects are planned and implemented to solve problems reducing risk to public safety and property, meet challenges, and seize opportunities. A "problem" can be thought of as an undesirable condition, while an "opportunity" offers a chance for improvement, and "constraints" limit the ability for implementation. The Coachella Valley IRWM Region includes a specialized terrain conditions, as well as geographic features, which can generate a range of different types of watershed response. These features include urban development surrounded by rainfall-collecting steep terrain that discharges onto the flat valley floor. The geography as well meteorological conditions are conducive to sudden flooding. The desert environment has unique geomorphic features that have been formed from historical flooding and the responses of the watersheds. The arid climate, where the total rainfall is typically concentrated in a few short months, adds to the uncertainty of flood prediction. In addition, the unique issues associated with the watershed conditions also limit the application of even conventional flood management solutions. It is important to identify and recognize the areas within the watershed which have specific unique properties as part of the planning process to assist in the formulation of alternative solutions. This study is utilizing a watershed scale assessment as part of an IFM approach that allows examination of flood hazards and their management in combination with other water resources and environmental restoration on a broad scale.

Based on the characteristics discussed above, the Region's flood management opportunity/constraints may be divided into four major categories which include: (1) physical conditions, (2) regulatory, (3) land use, and (4) environmental/biological.

## Physical

Different physical features define the types of flooding issues since the topographic features greatly influence the response of the watershed. The nature of the flooding created by the topography also results in different constraints and limits the ability to apply different conventional solutions for the flood hazard mitigation. Table 5-2 illustrates the opportunity and constraints with floodplain management that are associated with "physical features" within the watershed.

**Table 5-2: Opportunity / Constraints for regional floodplain management – Physical**

| **Physical** | |
|---|---|
| **Opportunity / Constraint** | **Reference** |
| Hydraulic conveyance limitations of existing roadway and utility crossings | • Identification of hydraulic limitations as potential target areas for fixes that may reduce areas of flooding and sedimentation |
| Existing manmade facilities and structures located with the floodplain | • Define existing flood risk from existing facilities/uses within the floodplain |
| Sediment delivery with flood flows from canyons / mountainous areas | • Excessive sediment delivery causes deposition and will ultimately be deposited at a downstream location with flatter slope<br>• High sediment yields bulk the flood waters and increase depth of flooding |
| Limited topographic relief/slope that limits hydraulic conveyance in valley areas compared to the canyon and alluvial fans | • Facility sizes will increase further downstream within the watershed because of the reduced slope |
| Soils/geology primarily alluvial deposits that are highly erodible | • Channel migration routinely occurs<br>• Erosion hazards for development adjacent to channels |
| Specialized geographic/geomorphic features which include alluvial fans and coastal plains | • Hydraulic conditions are unique and conventional flood management solutions are not applicable |
| Topographic features result in steep slopes in the mountains/foothills and extremely flat slopes on the valley floors | • Changes in hydraulic conveyance and sediment delivery because of the change in slopes |

## Regulatory

The existing regulations related to floodplain management/flood control influence the existing level of flood protection provided to the community. Table 5-3 illustrates the opportunity and constraints with floodplain management that are associated with "regulatory" items within the watershed.

**Table 5-3: Opportunity / Constraints for regional floodplain management – Regulatory**

| Regulatory | |
|---|---|
| **Opportunity / Constraint** | **Reference** |
| Two different regional flood control agencies have jurisdiction for different portions of the Coachella Valley (CVWD and RCFCWCD), while there are some areas which are in neither jurisdiction that come under the County | • Comprehensive planning required that reflects the current though process for flood management and the environmental considerations for each of the regional watersheds that will cross over political boundaries |
| FEMA/NFIP requirements for community floodplain regulations | • NFIP requirements have the most influence on floodplain restrictions |
| Water quality limitations and restrictions based on the Basin Plan and identified TMDLs | • Water quality restrictions should be implemented as part of the regional planning solution |

## Land Use

Existing land use and future proposed development should be closely coordinated with the existing mapped flood hazards. Land use restrictions are one of the primary tools for floodplain management in order to reduce flood risks. Table 5-4 illustrates the opportunity and constraints with floodplain management that are associated with "land use features" within the watershed.

**Table 5-4: Opportunity / Constraints for regional floodplain management – Land Use**

| Land Use | |
|---|---|
| **Opportunity/Constraints** | **Reference** |
| Various urban/commercial land use and additional manmade encroachments within the floodplain | • Cost/benefit assessments should be performed to evaluate cost effectiveness of flood control facilities or removing these uses from the floodplain |
| Limitations of development and land use restrictions within active flood hazard zones | • Modifications to current General Plan modifying land uses so that they are compatible with the floodplain overlay since many locations have development zoned for floodplain areas |

## Environmental/Biological

Existing biological resources within the floodplain corridor are an important opportunity to integrate into the regional planning as part of the preservation of these resources. However, in addition to an opportunity these resources can represent constraints in the different types of solutions that can be applied for flood mitigation and may result in additional costs. Table 5-5 illustrates the opportunity and constraints with floodplain management that are associated with "environmental/biological" elements within the watershed.

## Table 5-5: Opportunity / Constraints for regional floodplain management – Environmental / Biological

| Environmental / Biological | |
|---|---|
| **Opportunity/Constraints** | **Reference** |
| Environmental permitting limitations for activities/structures within the floodplain (i.e. endangered species, etc.) | • Additional costs or limitations on the potential solutions available because of environmental regulatory restrictions |
| Many existing floodplain corridors have special defined ecological preserve or similar designations because of habitat for sensitive species (i.e. CV MSHCP) | • Existing floodplains and streams are valuable biological resources for preservation |

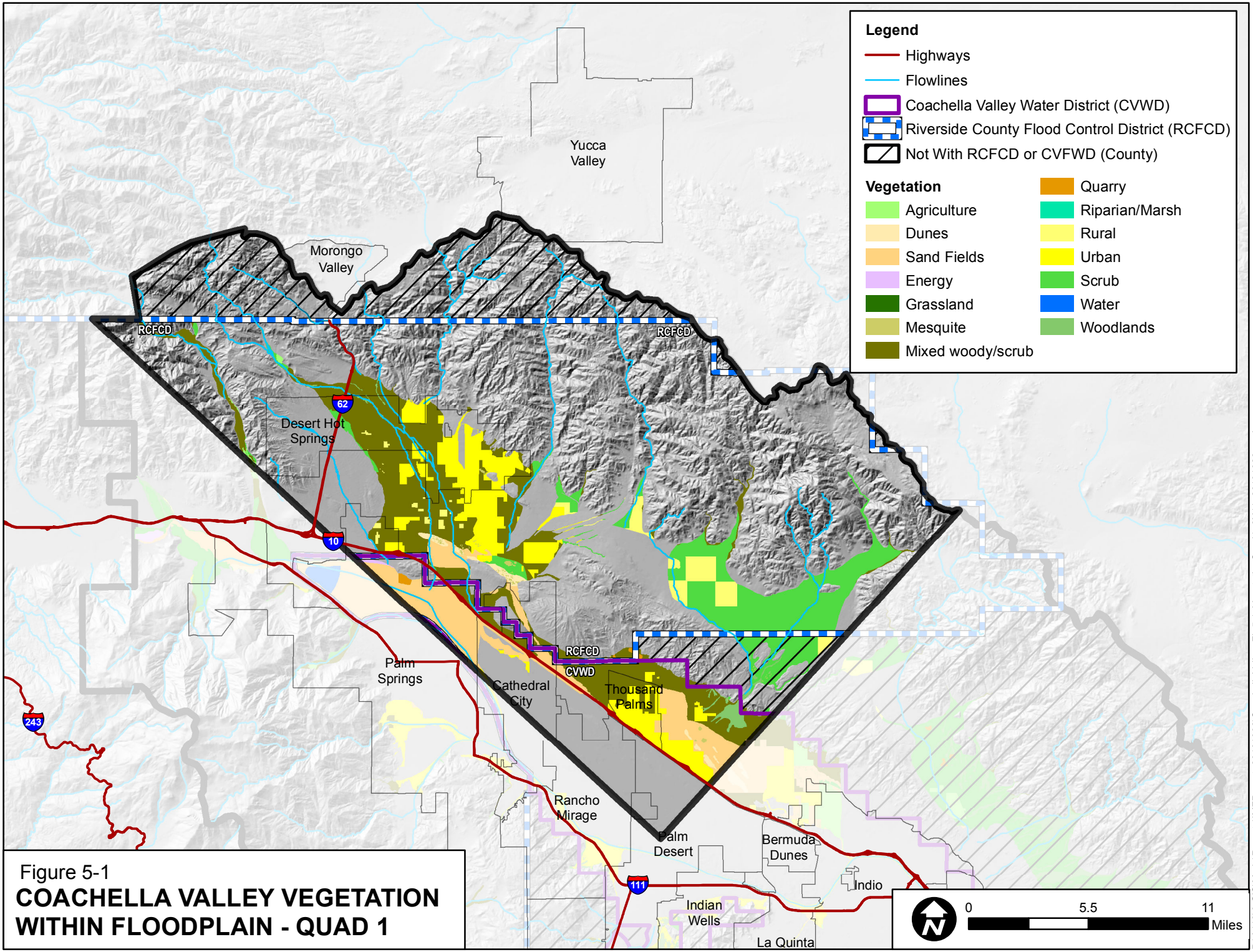


Figure 5-1

**COACHELLA VALLEY VEGETATION WITHIN FLOODPLAIN - QUAD 1**

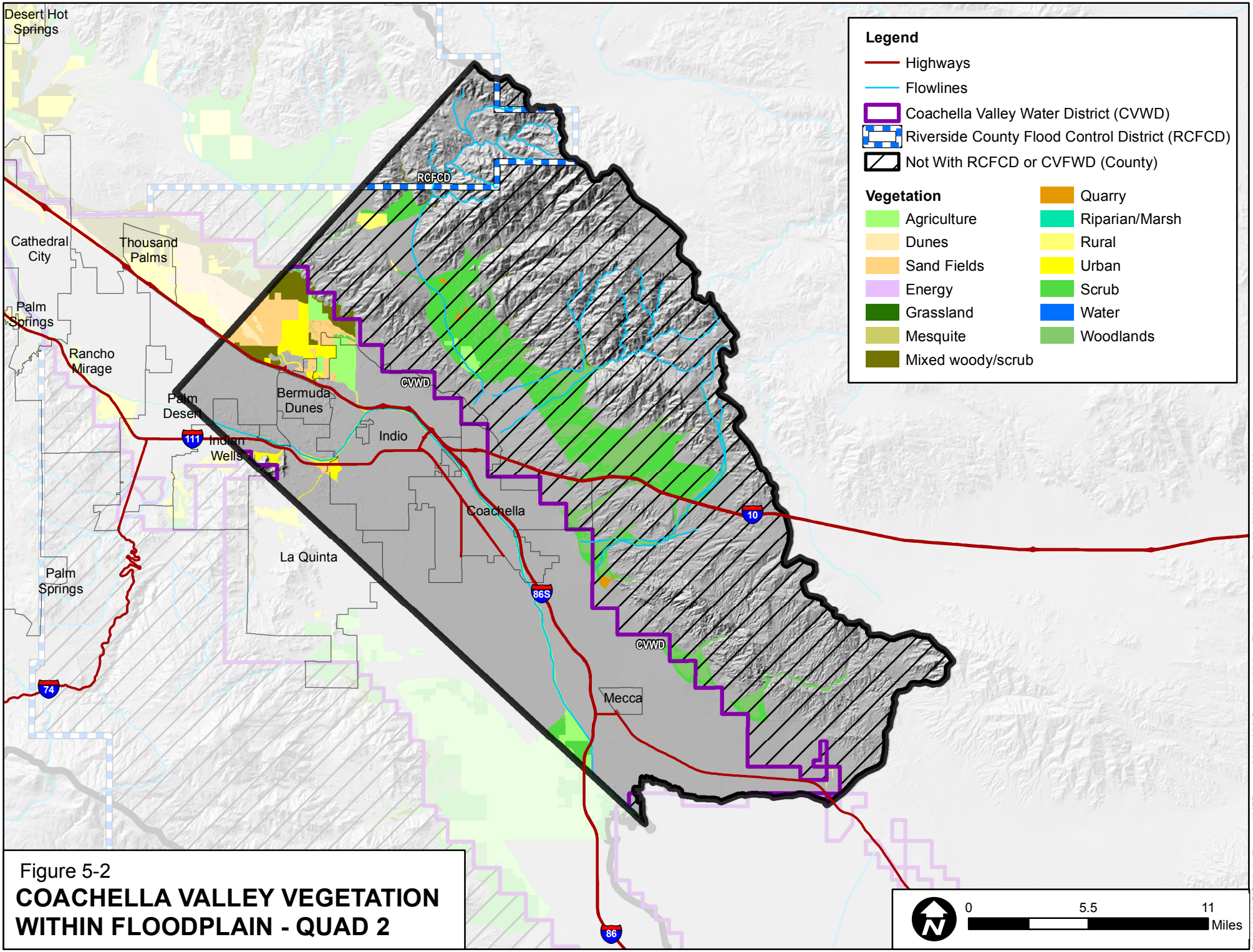


Figure 5-2

**COACHELLA VALLEY VEGETATION WITHIN FLOODPLAIN - QUAD 2**

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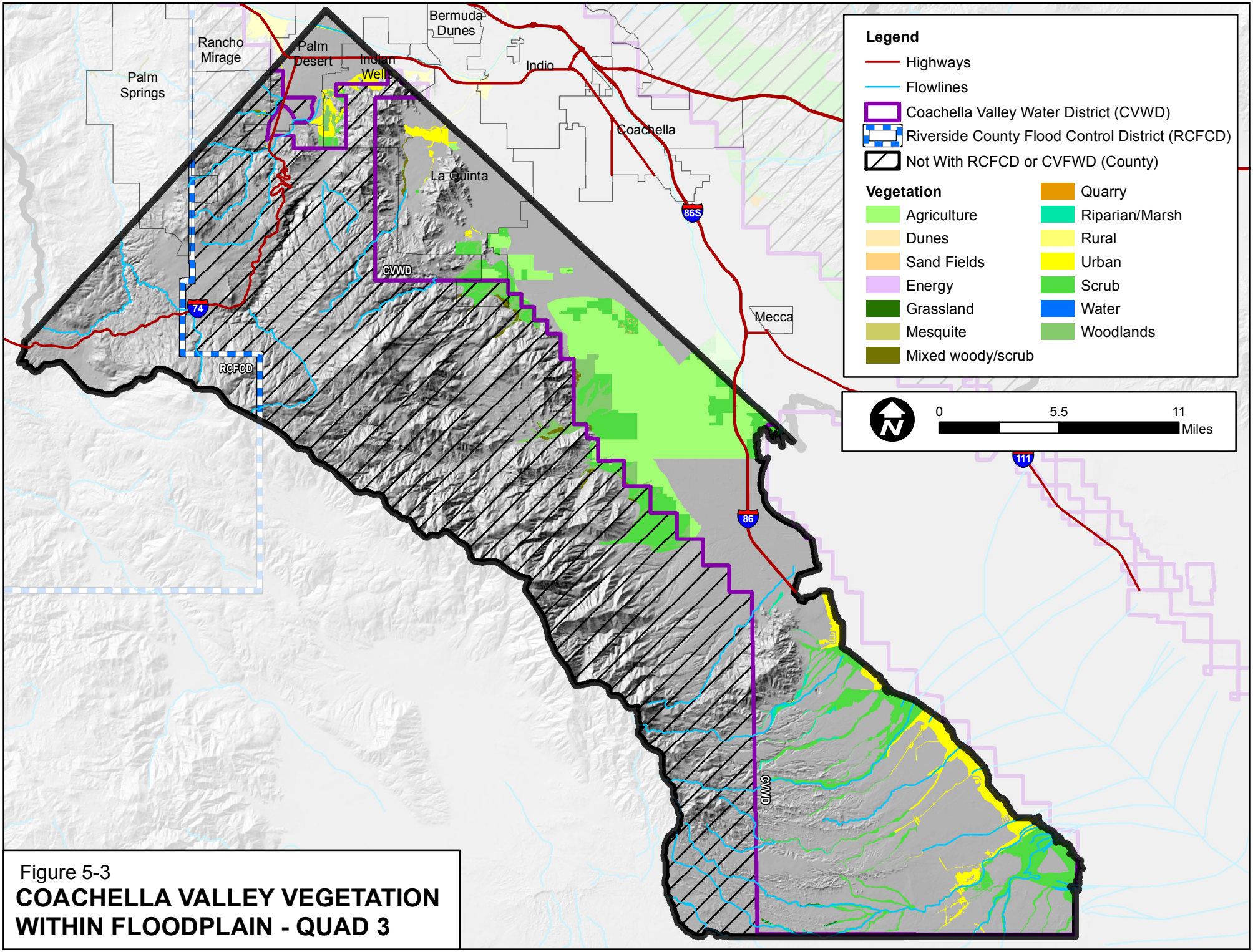


Figure 5-3

**COACHELLA VALLEY VEGETATION WITHIN FLOODPLAIN - QUAD 3**

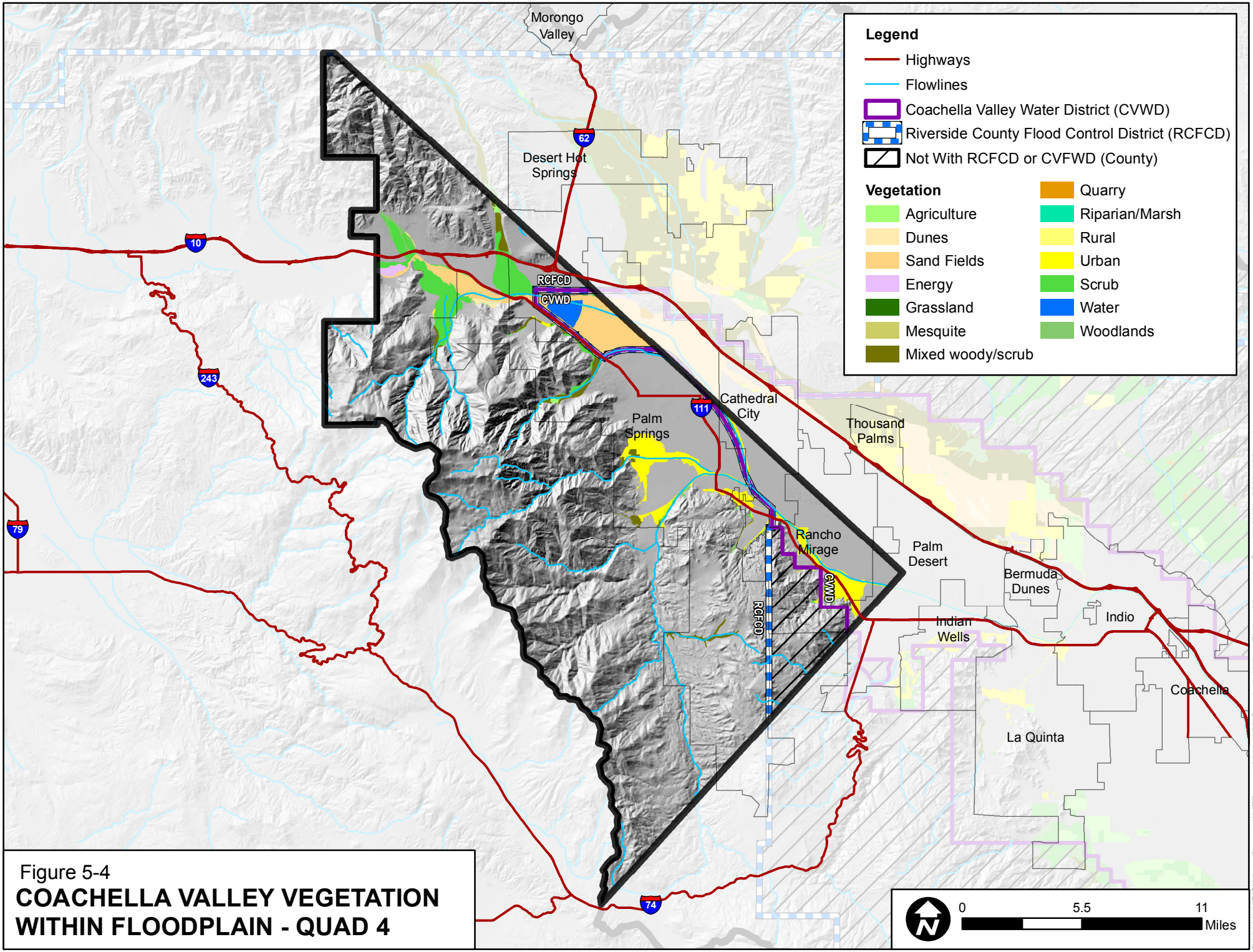


Figure 5-4

**COACHELLA VALLEY VEGETATION WITHIN FLOODPLAIN - QUAD 4**

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# 6 Formulation of IFM Strategies

## 6.1 Global IFM Strategies

IFM includes a broad range of management strategies and can be grouped into four general approaches— (1) Nonstructural Approaches, (2) Restoration of Natural Floodplain Functions, (3) Structural Approaches, and (4) Emergency Management. These approaches and the management actions within them serve as a toolkit of potential actions that local agencies can use to address flood-related issues, and advance IFM throughout the Region's watersheds. These actions range from policy or institutional changes to operational and physical changes to flood infrastructure. Such actions are not specific recommendations for implementation; rather, they serve as a suite of generic management tools that can be used individually or combined for specific application situations. A variety of management actions can be bundled together as part of a single flood management project to provide a multiple benefit outcome related to water resources.

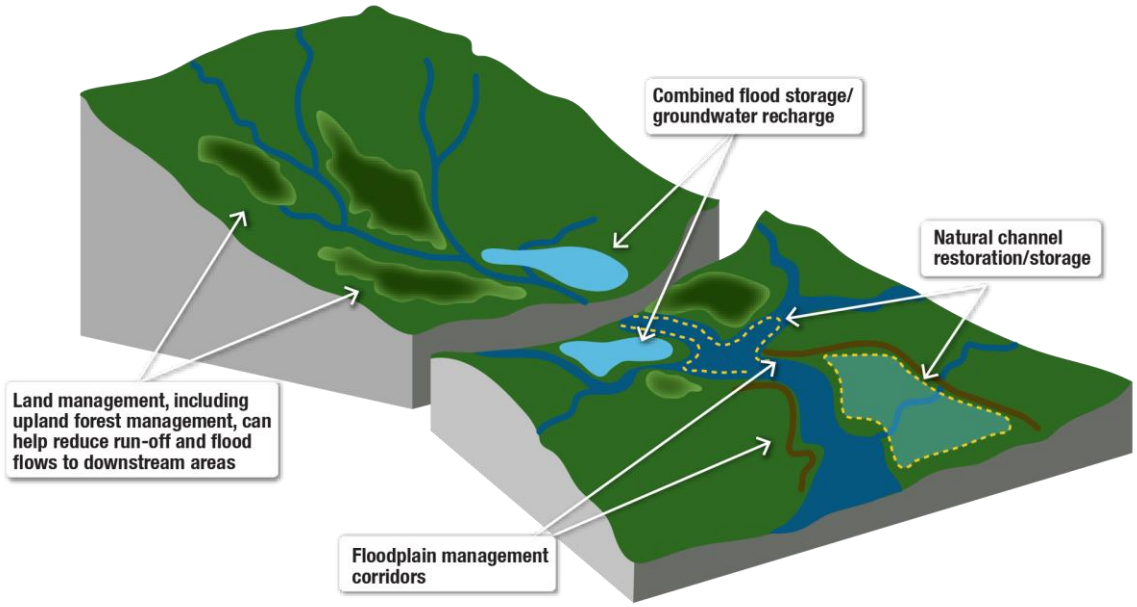



**Figure 6-1: Example of IFM strategies applied at different locations on a watershed basis to achieve multiple water resources benefits**

## 6.2 Nonstructural Approaches

### 6.2.1 Land Use Planning – Floodplain Basis

Land use planning employs policies, ordinances, and regulations to limit development in flood-prone areas and encourages land uses that are compatible with floodplain functions. This can include policies and regulations that restrict or prohibit development within floodplains, restrict size and placement of structures, prevent new development from providing adverse flood impacts

to existing structures, encourage reduction of impervious areas, require flood-proofing of buildings, and encourage long-term restoration of streams and floodplains.

### 6.2.2 Land Use Planning – Watershed Basis

Land use controls on a watershed basis provide the opportunity to assist in controlling the response of the watershed and influence or correct potential problems through non-structural means. In addition, land use planning and regional water management can be coordinated between land management and water management authorities to achieve consistency and maximum benefits. Land use impacts different elements of the watershed including water quantity, water quality, and the processes of erosion/deposition. It is important to understand these linkages between land use and the watershed functions in order to develop collaboration to improve the watershed performance on a regional basis.

### 6.2.3 Floodplain Management

Floodplain management generally refers to nonstructural actions in floodplains to reduce flood damages and losses. Floodplain management actions include:

- **Floodplain Mapping and Risk Assessment –** Floodplain mapping and risk assessment serve a crucial role in identifying properties that are at a high risk to flooding. Accurate, detailed maps are required to prepare risk assessments, guide development, prepare plans for community economic growth and infrastructure, utilize the natural and beneficial function of floodplains, and protect private and public investments. Development of needed technical information includes topographic data, hydrology, and hydraulics of streams and rivers, delineation of areas subject to inundation, assessment of properties at risk, and calculation of probabilities of various levels of loss from floods.
- **Land Acquisitions and Easements** – Land acquisitions and easements can be used to restore or preserve natural floodplain lands and to reduce the damages from flooding by preventing urban development. Land acquisition involves acquiring full-fee title ownership of lands from a willing buyer and seller. Easements provide limited-use rights to property owned by others. Flood easements, for example, are purchased from a landowner in exchange for perpetual rights to periodically flood the property when necessary or to prohibit planting certain crops that would impede flood flows. Conservation easements can be used to protect agricultural or wildlife habitat lands from urban development. Both land acquisitions and easements generally involve cooperation with willing landowners. Although acquisition of lands or easements can be expensive, they can reduce the need for structural flood improvements that would otherwise be needed to reduce flood risk. Maintaining agricultural uses and/or adding recreational opportunities where appropriate provide long-term economic benefits to communities and the State.
- **Building Codes and Flood-proofing** – Building codes and flood-proofing include specific measures that reduce flood damage and preserve egress routes during high- water events. Building codes are not uniform; they vary across the state based on a variety of factors. Example codes could require flood-proofing measures that increase the resilience of

buildings through structural changes, elevation, or relocation and the use of flood resistant materials.

- **Retreat** – Retreat is the permanent relocation, abandonment, or demolition of buildings and other structures. Retreat can be used in a variety of settings from floodplains to coastal areas. In coastal regions, this action would allow the shoreline to advance inward, unimpeded in areas subject to high coastal flooding risks, high erosion rates, or future sea level rise. Integrating recreation uses into retreat areas along the shoreline provides economic uses for these buffer lands.
- **Flood Risk Awareness (Information and Education)** – Flood risk awareness is critical because it encourages prudent floodplain management. Flood hazard information is a prerequisite for sound education in understanding potential flood risks. If the public and decision makers understand the potential risks, they can make decisions to reduce risk, increase personal safety, and expedite recovery after floods. Effective risk awareness programs are critical to building support for funding initiatives and to building a connection to the watershed.
- **Flood Insurance** – Flood insurance is provided by the Federal government via the NFIP to communities that adopt and enforce an approved floodplain management ordinance to reduce future flood risk. The NFIP enables property owners in participating communities to purchase subsidized insurance as a protection against flood losses. If a community participates in the voluntary Community Rating System and implements certain floodplain management activities, the flood insurance premium rates are discounted to reflect the reduced flood risks

### 6.2.4 Restoration of Natural Floodplain Functions

This strategy recognizes that periodic flooding of undeveloped lands adjacent to rivers and streams is a natural function and can be a preferred alternative to restricting flood flows to an existing channel. The intent of natural floodplain function restoration is to preserve and/or restore the natural ability of undeveloped floodplains to absorb, hold, and slowly release floodwaters, to enhance ecosystem, and to protect flora and fauna communities. Natural floodplain conservation and restoration actions can include both structural and nonstructural measures. To permit seasonal inundation of undeveloped floodplains, some structural improvements (e.g., weirs) might be needed to constrain flooding within a defined area along with nonstructural measures to limit development and permitted uses within those areas subject to periodic inundation. Actions that support natural floodplain and ecosystem functions include:

- **Promoting Natural Hydrologic, Geomorphic, and Ecological Processes –** Natural hydrologic, geomorphic, and ecological processes are key components of promoting natural floodplain and ecosystem functions**.** Human activities (including infrastructure such as dams, levees, channel stabilization, and bank protection) have modified natural hydrological processes by changing the extent, frequency, and duration of natural floodplain inundation. These changes disrupt natural geomorphic processes such as sediment erosion, transport, and deposition, which normally cause channels to migrate, split, and rejoin

downstream. These natural geomorphic processes are important drivers in creating diverse riverine, riparian, and floodplain habitat to support wildlife, and in providing natural storage during flood events. Restoration of these processes might be achieved through setting back levees, restoring channel alignment, removing unnatural hard points within channels, or purchasing lands or easements that are subject to inundation.

- **Protecting and Restoring Quantity, Quality, and Connectivity of Native Floodplain Habitats –** Quantity, quality, and connectivity of native floodplain habitats are critical to promote natural floodplain and ecosystem functions**.** In some areas, native habitat types and their associated floodplain have been lost, fragmented, and degraded. Lack of linear continuity of riverine, riparian habitats, or wildlife corridors, impacts the movement of wildlife species among habitat patches and results in a lack of diversity, population complexity, and viability. This can lead to native fish and wildlife becoming rare, threatened, or endangered. Creation or enhancement of floodplain habitats can be accomplished through setting back levees and expanding channels or bypasses, or through removal of infrastructure that prevents flood flows from entering floodplains.
- **Invasive Species Reduction –** Minimizing invasive species can help address problems for both flood management and ecosystems. Invasive species can reduce the effectiveness of flood management facilities by decreasing channel capacity, increasing rate of sedimentation, and increasing maintenance costs. Nonnative, invasive plant species often can out-compete native plants for light, space, and nutrients, further degrading habitat quality for native fish and wildlife. These changes can supersede natural plant cover, eliminate, or reduce the quality of food sources and shelter for indigenous animal species, and disrupt the food chain. Reductions in the incidence of invasive species can be achieved by defining and prioritizing invasive species of concern, mapping their occurrence, using BMPs for control of invasive species, and using native species for restoration projects.

## 6.3 Structural Approaches

Structural approaches to flood management include flood infrastructure, reservoir and floodplain storage and operations, and operations and maintenance (O&M).

### 6.3.1 Flood Infrastructure

Flood infrastructure varies significantly based on the type of flooding. There are many alternative components that can be applied to correct flood control deficiencies. These components can be used individually or in different combinations with other available alternative components. The alternative structural flood control infrastructure solutions that are available to select from for any type of flood control problem are limited to three major categories of solutions from which the individual components will generally fall within one of these categories and include (1) conveyance oriented, (2) storage, and (3) diversion. The major categories of structural solutions can be further expanded to define additional classifications of the primary components which include: (1) flow redirection, (2) structural rigid revetments, (3) other structural techniques, (4) biotechnical techniques, (5) channel geometry, (6) channel alignment, (7) diversion, (8) storage, and (9) other techniques. Flood infrastructure can include:

- **Levees and Floodwalls –** Levees and floodwalls are designed to confine flood flows by containing waters of a stream or lake. Levees are an earthen or rock berm constructed parallel to a stream or shore (or around a lake) to reduce risk from all types of flooding. Levees could be placed close to stream edges, or farther back (e.g., a setback levee). Ring levees could be constructed around a protected area, isolating the area from potential floodwaters. A floodwall is a structural reinforced-concrete wall designed and constructed to hold back floodwaters. Floodwalls have shallow foundations or deep foundations, depending on flood heights and soil conditions. Although Levees and Floodwalls are structural flood management approaches, they are not recommended. Due to strict FEMA regulations and intensive maintenance requirements, other alternatives are preferred within the County of San Diego.
- **Channels and Bypasses –** Channels and bypasses convey floodwaters to reduce the risk of slow rise, flash, and debris- flow flooding. Channels can be modified by deepening and excavating the channel to increase its capacity, or lining the streambed and/or banks with concrete, riprap, or other materials, to increase drainage efficiency. Channel modifications can result in increased erosion downstream and degradation of adjacent wildlife habitat, and often the modifications require extensive permitting. Bypasses are structural features that divert a portion of flood flows onto adjacent lands (or into underground culverts) to provide additional flow-through capacity and/or to store the flows temporarily and slowly release the stored water.
- **Retention and Detention Basins** – Retention and detention basins are used to collect stormwater runoff and slowly release it at a controlled rate so that downstream areas are not flooded or eroded. A detention basin eventually drains all of its water and remains dry between storms. Retention basins have a permanent pool of water and can improve water quality by settling sediments and attached pollutants.
- **Culverts and Pipes** – Culverts and pipes are closed conduits used to drain stormwater runoff. Culverts are used to convey stream-flow through a road embankment or some other type of flow obstruction. Culverts and pipes allow stormwater to drain underground instead of through open channels and bypasses.
- **Streambank Stabilization** –Streambank stabilization protects the banks of streams from erosion by installing different types of bank protection for armoring which include rock riprap, matting, vegetation or other materials to reduce erosion.
- **Debris Mitigation Structures** – For debris and alluvial flooding, debris fences and debris basins separate large debris material from debris flows, or the structures contain debris flows above a protected area. These structures require regular maintenance to periodically remove and dispose of debris after a flood. Deflection berms (or training berms) can be used to deflect a debris flow or debris flood away from a development area, allowing debris to be deposited in an area where it would cause minimal damage.

### 6.3.2 Floodplain Storage and Operations

Floodplain storage provides an opportunity to regulate flood flows by reducing the magnitude of flood peaks occurring downstream. Floodplain storage occurs when peak flows in a river are

diverted to adjacent off-stream areas. Floodplain storage can occur naturally when floodwaters overtop a bank and flow into adjacent lands, or storage can be engineered using weirs, berms, or bypasses to direct flows onto adjacent lands.

- **Groundwater Recharge** – In some areas, opportunities may exist to provide recharge to the aquifer in order to capture surface water sources which would normally discharge to the ocean can enhance the water supplies. In addition, the opportunities for flood storage should be coordinated with recharge opportunities to ensure that these are located where optimum benefits occur, including recharge capabilities.

### 6.3.3 Operations and Maintenance

Operation and maintenance (O&M) is a crucial component of flood management. O&M activities can include inspection, vegetation management, sediment removal, management of encroachments and penetrations, repair or rehabilitation of structures, or erosion repairs. Because significant flood infrastructure constructed in the early to mid-twentieth century are near or have exceeded the end of their expected service lives, adequate maintenance is critical for this flood infrastructure to continue functioning properly.

## 6.4 Flood Emergency Management

Flood emergency management includes the following preparedness, response, and recovery activities:

- **Flood Preparedness** – Flood preparedness consists of the development of plans and procedures on how to respond to a flood in advance of a flood emergency, including preparing emergency response plans, training local response personnel, designating evacuation procedures, conducting exercises to assess readiness, and developing emergency response agreements that address issues of liability and responsibility.
- **Emergency Response** – Emergency response is the aggregate of all those actions taken by responsible parties at the time of a flood emergency. Early warning of flood events through flood forecasting allows timely notification of responsible authorities so that plans for evacuation of people and protection of property can be implemented. Emergency response includes flood fighting, emergency evacuation, and sheltering. Response begins with, and might be confined to, affected local agencies or operational areas (counties). Depending upon the intensity of the event and the resources of the responders, response from regional, State, and Federal agencies might be required.
- **Post-Flood Recovery** – Recovery programs and actions include restoring utility services and public facilities, repairing flood facilities, draining flooded areas, removing debris, and assisting individuals, businesses, and communities to protect lives and property. Recovery planning could include development of long- term floodplain reconstruction strategies to determine if reconstruction would be allowed in flood-prone areas, or if any existing structures could be removed feasibly. Such planning should review what building standards would be required, how the permit process for planned reconstruction could be

improved, funding sources to remove existing structures, natural habitat restoration, and how natural floodplains and ecosystem functions could be incorporated.

## 6.5 Application of Common IFM Strategies

The value of using an IFM approach within the watershed is in the results—improved public safety, enhanced environmental stewardship, and statewide economic stability. Localized, narrowly focused projects are not the best use of public resources and might have negative unintended consequences in nearby regions. The IFM approach can help deliver more benefits at a faster pace using fewer resources than what is possible from single-benefit projects. Table 6-1 provides examples of different recommended IFM strategies that have been utilized effectively throughout the state as background to assist in formulating alternatives within the different watersheds in order to produce high-value multi-benefit projects.

**Table 6-1: Examples of applications of different IFM strategies and approaches**

1. Increase hydraulic conveyance capacities and remove flow restrictions
2. Provide flood relief structures or bypass system to reduce downstream flows
3. Construct setback levees to preserve natural floodplain vegetation corridor
4. Preservation of natural active washes and floodplain corridors
5. Clearing of debris and snags within channel systems
6. Watershed and floodplain vegetation management plan including current levee requirements
7. Streambank stabilization to reduce sedimentation downstream
8. Update O&M procedures and methods to reflect other functions in the flood management system including ecosystem functions
9. Acquire floodplain areas to reduce flood damages and preserve natural floodplain corridors / ecosystem values
10. Sediment deposition removal projects to enhance hydraulic capacity and maintain fluvial processes
11. Update local flood management plans and coordinate with land use planning
12. Designate additional floodways based on current hydraulic and hydrologic conditions
13. Encourage compatible land use with flood management system and floodplain
14. Mange urban stormwater runoff to natural floodplain to reduce the potential for “hydromodification” impacts including flooding and stream stability
15. Improved accuracy of floodplain mapping/delineation, including urban areas, as well as better assessment of flood risks
16. Increased public information on floodplain hazards through access to floodplain hazard delineation with GIS tools on web based applications
17. Increased awareness and participation of FEMA Community Rating System (CRS) for flood insurance rate adjusting program
18. Identify locations and structures which have repetitive flood damage losses and eliminate
19. Land use planning and decision-making should be based on a more accurate assessment of flood risk from multiple hazards (i.e. influence of wildfires on flooding)
20. Construct new or enlarge existing temporary floodplain storage to attenuate peak flooding downstream
21. Increase flood control allocation by expanding existing or building new off-stream storage.
22. Implement advanced weather- forecast-based operations to increase reservoir management flexibility on a watershed basis such as with the County ALERT Network
23. Manage runoff through watershed management. Runoff from watershed source areas increases, in varying extents, due to increases in impermeable surfaces in developed areas, soil compaction from agriculture, reductions in vegetative cover, incision of stream channels, and losses of wetlands. Runoff flood
24. Remove unnatural hard points in or on the banks of streams (such as bridge abutments, rock revetment,

**Table 6-1: Examples of applications of different IFM strategies and approaches**

dikes, limitations on channel boundaries, or other physical encroachments into a channel or waterway) can affect the hydraulics of river channels, constraining dynamic natural fluvial geomorphologic processes of erosion.

25. Develop hazardous waste and materials management protocols to identify, contain, and remediate potential water quality hazards within floodplains
26. Operate reservoirs with flood reservation space to more closely approximate natural flow regimes
27. Reduce the incidence of invasive species in flood management systems
28. Remove barriers to fish passage
29. Encourage natural physical geomorphic processes, including channel migration and sediment transport
30. Floodplain and watershed improve the quality, quantity, and connectivity of wetland, riparian, woodland, grassland, and other native habitat communities
31. Develop regional advanced mitigation strategies and promote networks of both public and private mitigation banks to meet the needs of flood and watershed infrastructure projects.
32. An effective and sustainable flood/watershed management system encompass critical habitat and migration corridors through integration of public safety, water supply, and ecosystem function—managing flood infrastructure as a system
33. Coordinate flood response planning and clarify roles and responsibilities of the different flood management agencies/entities related to flood preparedness and emergency response
34. Use Building Code amendments to reduce consequence of flooding
35. Encourage multi- jurisdictional and regional partnerships on flood planning and improve agency coordination on flood management within watersheds to provide system wide planning

# 7 Coachella Valley IFM Guidance and Recommendations

## 7.1 Applicable IFM Strategies for Coachella Valley

A more detailed assessment was developed for commonly utilized IFM strategies that are applicable to the desert environment, focusing on the potential uses in the Coachella Valley. The "general approaches" for IFM explained in Chapter 6 were expanded to identify potential strategies for the valley setting. In addition, previously utilized IFM strategies that had been applied successfully throughout the state as well as in other arid areas of the southwest were also used an initial guide for selection. This initial formulation and screening resulted in a variety of the different specific strategies or projects that were generalized or lumped to 24 different general types of strategies or applications that could be utilized for this area (see Table 7-1). A series of fact sheets (see following sections) were developed for the different generalized application in order to assist in the guidance and formulation of specific projects.

**Table 7-1: Summary of different recommended general categories of IFM Strategies**

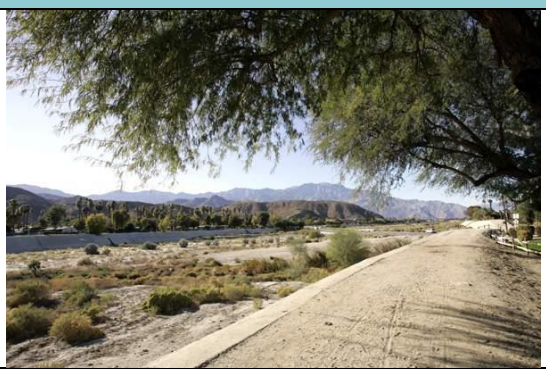
| IFM Strategy No. | Benefit Category | IFM Approach |
|---|---|---|
| 1 | Water Supply | Increased floodplain infiltration |
| 2 | Habitat/Water | Increased Floodplain storage areas |
| 3 | Habitat | Setback levee systems from active floodplain |
| 4 | Habitat | Preservation of floodplain natural open space |
| 5 | Water Supply | Permeable flood control channel lining |
| 6 | Water Supply | Infiltration basins |
| 7 | Water Supply | Application of LID techniques for watershed development |
| 8 | Habitat/Water | Conversion of agriculture areas to increase vegetated floodplain fringe and habitat corridor |
| 9 | Policy | Watershed land use planning and regulations |
| 10 | Erosion/Quality | Stabilization of eroding earthen/natural channel systems |
| 11 | Quality | Urban stormwater quality treatment basins / infiltration |
| 12 | Quality | Debris basins |
| 13 | Policy | Floodplain land use regulations |
| 14 | Water Supply | Retention / detention storage basins |
| 15 | Quality | Watershed land erosion stabilization techniques |
| 16 | Stability | Hydromodification runoff management techniques |
| 17 | Transportation | Channel improvement projects with trails / bikeways |
| 18 | Water Supply | Parks with integrated flood storage / infiltration areas |
| 19 | Habitat | Floodplain land acquisition |
| 20 | Stability | Bridge invert channel stabilization |
| 21 | Quality | Agricultural runoff / excess irrigation water quality treatment |
| 22 | Water Supply | Recycle agriculture / urban non-stormwater discharges for non-potable water source |
| 23 | Policy | Coordination between programs/agencies for water management and flood management planning. |
| 24 | Watershed Database | Watershed / floodplain information management and data exchange |

# 7.2 Coachella Valley IFM Strategies Fact Sheets

**Strategy Application No. 1 - Increased Floodplain Infiltration Areas / Enhancement**

**IFM Objectives / Principles:**

- Increased channel area
- Enhancement for infiltration
- Peak flow reduction
- Maintain natural hydrologic processes
- Flood volume reduction
- Flood water surface reduction



**Description of Representative Actions / Elements:**

Adjustment to the active floodplain or flood control channels to allow more infiltration to occur within the channel through different adjustments to the channel geometry / cross section. Enhancements to allow increased infiltration should occur in locations of the watershed which have (1) areas conducive to infiltration with high permeability, (2) located near production aquifers, (3) ensure that there are not any geotechnical barriers that would limit infiltration. Modifications to the floodplain can include (1) widening of the channel to increase the area of infiltration, (2) widening the active portion of the channel through lowering of adjacent overbank areas, (3) creating widened channel bottom that can be configured similar to cul-de-sacs adjacent to the channel bottom but allow surface water to freely communicate, (4) excavating depressions in the channel bottom below the normal channel flow line or invert to allow temporary retention storage enhancing infiltration. Additional enhancements can include construction of small low-height berms to create in-channel storage basins. In addition, other modifications of the channel to slow floodwaters and allow longer period of flow to be in the channel for to capture water through infiltration.

**Potential Benefits:**

- Enhanced groundwater supplies
- New water source
- Habitat enhancement and increased corridor
- Widened active floodplain areas

**Strategy Application No. 2 - Enhanced Floodplain Storage Areas**

**IFM Objectives / Principles:**

- Floodplain preservation
- Peak flow reduction
- Flooding reduction
- Maintain natural hydrologic processes

**Description of Representative Actions / Elements:**

Creative use of the floodplain to provide temporary in-channel storage to reduce peak flow rates downstream. The identification of potential flood storage within the floodplain involves integrating wetland and floodplain natural and beneficial functions into floodplain management planning. Integrate the protection and restoration of floodplain and wetland natural and beneficial functions into comprehensive land use planning, watershed planning, and floodplain management planning effort. Protection of floodplain and wetland vegetation to erosion is particularly important for high velocity areas

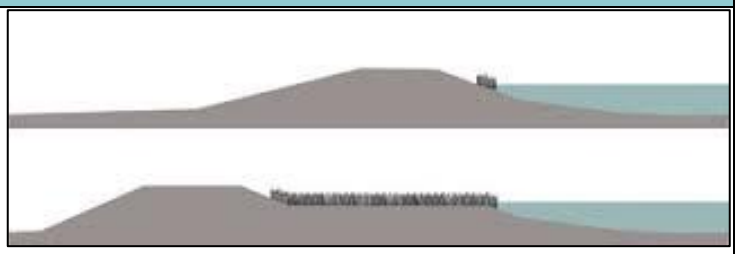
**Potential Benefits:**

- Enhanced groundwater supplies
- New water source
- Habitat enhancement and increased corridor

**Strategy Application No. 3 - Setback Levee System from Active Channel / Floodplain**

**IFM Objectives / Principles:**

- Increase floodplain reserved area
- Floodplain land acquisition
- Managed/restricted floodplain land use
- Flooding reduction and lower levels
- Larger vegetation corridor/habitat
- Flood storage
- Increased potential infiltration areas
- Maintain natural hydrologic processes



**Description of Representative Actions / Elements:**

Effective management of adjacent floodplain land use to increase floodplain areas through land acquisition to convert adjacent agricultural or undeveloped lands to floodplain. Structural levee systems can be constructed away from the active floodplain so the active channel has the ability to migrate and perform the natural hydrologic functions. The widened floodplain with these larger overbank areas will provide increased flood conveyance and flood water level reduction or confinement of the floodwaters. Creative use natural vegetative corridors in the new overbank areas acquired from farm lands which will also provide temporary in-channel storage to reduce peak flow rates downstream. Allows for the creation of additional habitat and wetlands or natural water quality treatment systems in the floodplain fringe or overbank area. There is the potential to continue to allow farming on the inboard side of the levees with the understanding that there is the potential for flooding and loss of the crop.

**Potential Benefits:**

- Enhanced groundwater supplies
- Habitat enhancement and increased corridor
- Land use planning
- Flood damage reduction of existing agricultural losses
- Increased floodplain flow capacity

**Strategy Application No. 4 – Preservation Floodplain Open Space Habitat Corridor / Vegetation Buffer**

**IFM Objectives / Principles:**

- Vegetation buffer
- Habitat preservation
- Stream corridor stabilization
- Floodplain management
- Land use planning

**Description of Representative Actions / Elements:**

Wetlands and floodplain vegetation can provide a hydrologic buffer to the watershed response through reduced velocity and increased time of watershed. The watershed vegetation can buffer the intensity of rainfall events and the corresponding watershed response which will reduce the flooding downstream. The preservation of natural vegetation reduced water flow connectivity by interrupting surface flows of water, for example, by water storage or planting buffer strips of grass or trees.

**Potential Benefits:**

- Reduction of streambank/streambed erosion through natural protection
- Enhanced wildlife habitat benefits
- Natural water quality biological uptake benefits

**Strategy Application No. 5 - Permeable Flood Control Channel Lining / Replacement Impermeable Lining**

**IFM Objectives / Principles:**

- Flood volume reduction
- Hydromodification
- Maintain natural hydrologic processes
- Increased groundwater infiltration
- Enhance groundwater supplies

**Description of Representative Actions / Elements:**

Utilize channel permeable type of channel linings for the channel invert systems to allow infiltration for groundwater recharge and potential treatment or capture of urban dry-weather flows.

**Potential Benefits:**

- Enhanced groundwater supplies
- New water source
- Enhance channel stability downstream
- Channel habitat enhancement
- Water quality

**Strategy Application No. 6 - Infiltration / Groundwater Recharge Basins**

**IFM Objectives / Principles:**

- Groundwater infiltration
- Floodplain preservation
- Peak flow and volume reduction
- Flooding reduction
- Maintain natural hydrologic processes
- Water quality treatment

**Description of Representative Actions / Elements:**

An infiltration basin is a shallow impoundment which is designed to infiltrate stormwater into the soil. This has high pollutant removal efficiency and can also help recharge the ground water, thus increasing base flow to stream systems. Infiltration basins can be challenging to apply on many sites, however, because of soils requirements. Soils and topography are strongly limiting factors when locating infiltration basins. Soils must be significantly permeable to ensure that the practice can infiltrate quickly enough to reduce the potential for clogging, and soils that infiltrate too rapidly may not provide sufficient treatment, creating the potential for ground water contamination. The infiltration rate should range between 0.5 and 3 inches per hour. In addition, the soils should have no greater than 20 percent clay content, and less than 40 percent silt/clay content. Vector control is another item that should be taken into account for the design of infiltration basins. The basins should be located in coordination with the groundwater management agency in order to maximize the benefits to the producing groundwater aquifer. The size and shape can vary from one large basin to multiple, smaller basins throughout a site. Ideally, the basin should avoid disturbance of existing vegetation. The key to promoting infiltration is to provide enough surface area for the volume of runoff to be absorbed. An engineered overflow structure should be provided for the larger storms. Infiltration Basins can be incorporated into new development. Ideally, existing vegetation can be preserved and utilized as the infiltration area. Runoff from adjacent buildings and impervious surfaces can be directed into this area, which will “water” the vegetation, thereby increasing evapotranspiration in addition to encouraging infiltration.

**Potential Benefits:**

- Flooding reduction
- Reduce downstream erosion
- Hydromodification mitigation
- Enhanced groundwater supplies
- New water source
- Water quality treatment

**Strategy Application No. 7 - Application of LID techniques for New Development Projects**

**IFM Objectives / Principles:**

- Water quality
- Land use planning
- Hydrologic cycle modification
- Maintain natural hydrologic processes
- Increase infiltration
- Runoff reduction

**Description of Representative Actions / Elements:**

LID techniques attempt to mimic a site's predevelopment hydrologic regime, using distributed landscape features and engineered devices such as bioretention, infiltration swales, rain barrels, and permeable pavements to reduce runoff, minimize pollutant discharges, decrease erosion, and maintain base flows of receiving streams. LID focuses on capturing and infiltrating the stormwater into the soil as close as possible to the point at which it hits the ground, thus reducing runoff. It differs from conventional stormwater management approaches, which typically aim to move water away from a site as quickly as possible via impervious surfaces An example of a LID technique is to substitute impervious materials with pervious or porous surfaces that can help reduce surface flow and increase infiltration. There are several types of surface covers that work well for this purpose. Porous cement concrete, porous asphalt concrete, gravel pavers, grass pavers, variations on different types of grids and blocks, and loose aggregate. These pervious surfaces can be used in a variety of areas including driveways, parking stalls, walkways, emergency vehicle access ways, alleys, highway shoulders and other non-high vehicle traffic areas. However, under the right circumstances these surface cover materials can be used, with caution, in roadways and other moderate traffic flow areas. Well-designed parking and roadways can include a mixture of various porosity densities, with the more dense material being located in high traffic areas, and less dense or pervious material located in low traffic areas, or areas where wheel turning is at a minimum (e.g., parking stalls). Pervious surfaces should not be used when the surface grade exceeds 5%.

**Potential Benefits:**

- Enhanced groundwater supplies
- New water source
- Urban water quality treatment
- Hydromodification mitigation
- Downstream flood reduction
- Reduced drainage system requirements

**Strategy Application No. 8 - Conversion of Agriculture/Farmland to Increase Vegetated Floodplain Fringe & Habitat Corridor**

**IFM Objectives / Principles:**

- Floodplain land management
- Floodplain development restrictions
- Increased floodplain conveyance area
- Maintain natural hydrologic processes
- Restoration altered floodplain
- Increase floodplain habitat corridor

**Description of Representative Actions / Elements:**

Acquisition of properties adjacent to the active river corridor, but are located within the 100-year floodplain or flood hazard area. This can include other land use and structures that are located within flood hazards. In particular, properties should be targeted that have incurred repetitive flood damage losses. Careful planning of the adjacent floodplain fringe lands should be performed with the use of the floodplain hydraulic models to understand the minimum corridor that is required on either side of the existing active river corridor in order to fully contain the flood hazards.

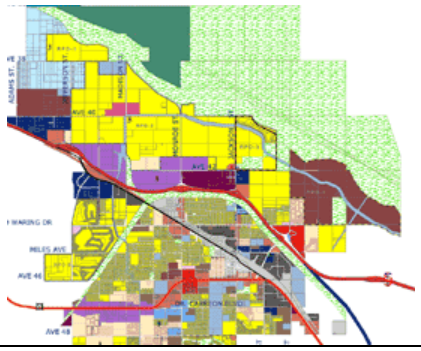
**Potential Benefits:**

- Habitat enhancement and increased corridor
- Flood damage loss reduction
- Floodplain land use management
- Minimizing flood control structures
- Restoring the natural floodplain processes.

**Strategy Application No. 9 – Watershed Land Use Planning and Regulations**

**IFM Objectives / Principles:**

- Land use planning
- LID policies
- Natural resource preservation
- Sustainable development
- Water quality
- Runoff management



**Description of Representative Actions / Elements:**

Apply core underlying watershed management planning guidelines in developing the proposed strategies and infrastructure for future development. These guidelines would ensure that development (i) mimics existing runoff and infiltration patterns within the project area, (ii) does not exacerbate peak flow rates or water volumes within or downstream of the project area, (iii) maintains the geomorphic structure of the major tributaries within the project area, (iv) maintains coarse sediment yields, storage and transport processes, and (v) uses a variety of strategies and programs to protect water quality. The principles refine the planning framework and identify key physical and biological processes and resources at both the watershed and sub-basin level. The Watershed Planning Principles focus also on the fundamental hydrologic and geomorphic processes of the overall watersheds and of the sub-basins.

These principles can be utilized to guide the initial planning of the development program relative to watershed resources and to minimize impacts thereto through careful planning by integrating the initial baseline technical watershed assessments. Non-structural watershed protection planning principles would include minimization of impervious areas/preservation of open spaces, prioritization of soils for development and infiltration, and establishment of riparian buffer zones. Examples of watershed planning principles that can be used include:

*Principle 1 – Recognize and account for the hydrologic response of different terrains at the sub-basin and watershed scale.*

*Principle 2 – Emulate, to the extent feasible, the existing runoff and infiltration patterns in consideration of specific terrains, soil types and ground cover.*

*Principle 3 – Address potential effects of future land use changes on hydrology.*

*Principle 4 – Minimize alterations of the timing of peak flows of each sub-basin relative to the mainstem creeks.*

*Principle 5 – Maintain and/or restore the inherent geomorphic structure of major tributaries and their floodplains.*

*Principle 6 – Maintain coarse sediment yields, storage and transport processes.*

*Principle 7 – Protect water quality by using a variety of strategies, with particular emphasis on natural treatment systems such as water quality wetlands, swales and infiltration areas and application of Best Management Practices within development areas to assure comprehensive water quality treatment prior to the discharge of urban runoff into the floodplain corridor*

**Potential Benefits:**

- Integrated land planning process with watershed functions
- Managed runoff from development and commercial watershed activities
- Maintain natural runoff process
- Minimize long term maintenance costs within floodplain

**Strategy Application No.10 – Channel or Streambank Stabilization of Eroding Earthen Channel Systems**

**IFM Objectives / Principles:**

- Sediment control
- Increased floodplain capacity
- Water quality
- Reduce sediment deposition downstream

**Description of Representative Actions / Elements:**

Channel erosion, with substantial stream incision can be a large contributor of sediment to downstream receiving waters and deposition in portions of channels that reduce flood capacity. In addition, increased sediment transport will baulk the runoff flows in the channel and further diminish the flood conveyance capacity. Watershed based regional studies/investigations of the fluvial processes and watershed sediment yields as well as geomorphic assessments/monitoring can evaluate those critical locations within the watershed that require stabilization. Stream erosion and sedimentation adversely impact water quality beneficial uses of both the stream and the receiving waters, and sediment TMDL. Stabilization of the natural alluvial channel system to eliminate future erosion of the streambed and streambank will assist in critical channel areas as a major sediment source as well as disrupting the loss of vegetative habitat within the floodplain. Detailed streambed stability assessments provide part of the technical support for the evaluation of the benefits of and opportunities for alternative stream stabilization / restoration techniques to ensure that the natural geomorphic and fluvial processes are maintained in balance.

**Potential Benefits:**

- Minimize maintenance in floodplains
- Reduce long term operations costs
- Reduce apparent peak discharge through reduced sediment bulking
- Reduce loss of land
- Improve recharge in streambed
- Reduce sediment deposition in riverine /estuarine habitat areas

**Strategy Application No.11 – Urban Water Quality Treatment Facilities / Infiltration BMPs**

**IFM Objectives / Principles:**

- Water reuse / recycling
- Groundwater recharge
- Natural floodplain protection
- Stream stabilization
- Water quality treatment
- Urban flood management

**Description of Representative Actions / Elements:**

Management of urban stormwater runoff and the associated water quality as well as increased runoff quantities impacting the natural floodplain corridors which result in a variety of impacts, not just increased flooding. Projects involving the capture of non-stormwater flows provide an opportunity for recycling this water source which was a waste-stream in the past

**Potential Benefits:**

- Improved water quality and reduce impact to downstream receiving waters
- Restore natural floodplain functions
- Reduce impacts of urban hydromodification

**Strategy Application No. 12 - Debris Basins**

**IFM Objectives / Principles:**

- Reducing potential sediment deposits downstream
- Peak flow reduction through reducing flow bulking
- Flooding reduction
- Water Quality
- Groundwater recharge

**Description of Representative Actions / Elements:**

Debris basins are constructed to treat either the loss of control of runoff and deterioration of water quality, or threats to human life and property. The design of debris basins must be to a standard that they provide immediate protection from flood water, floatable debris, sediment, boulders, and mudflows. They are usually constructed in stream systems with normally high sediment loads. Their purpose is to protect soil and water resources from unacceptable losses or to prevent unacceptable downstream damage. Debris basins must be designed with large vehicle access to the basins so they can be cleaned out periodically. Maintenance is a key factor in effectiveness of this treatment. Debris dams are structures placed across a well-defined channel to form a barrier that impedes the stream flow. The dams also form a basin that provides storage for deposits of detritus and floating debris. Debris dams and basins are used at sites that convey heavy debris loads where it is economically impracticable to provide a culvert large enough to convey the surges of debris. They are also used to trap heavy boulders or coarse gravel that would clog culverts, especially on low fills. In some locations, debris dams have been built to provide the added benefit of ground water recharge resulting from ponded water. An outlet structure should be provided to drain the floodwater temporarily stored behind the structure. The structure could be either a closed conduit consisting of a culvert with a riser set above the expected level of the debris deposit or an open channel acting as a weir structure. The design of the structure will have an influence on the design volume of the basin and embankment height. In general, an outlet structure designed to convey more of the runoff volume will reduce the design volume of the basin and lower the embankment height, but the cost of the structure will increase. Therefore, several different types and sizes of the outlet structure should be considered in the design of the structure to optimize the total cost of the debris dam

**Potential Benefits:**

- Enhanced groundwater supplies
- New water source
- Habitat enhancement and increased corridor

**Strategy Application No. 13- Floodplain Management Land Use Regulations**

**IFM Objectives / Principles:**

- Integrated land use planning
- Natural floodplain corridor preservation
- Sediment management / stream stability
- Natural streambed groundwater recharge

**Description of Representative Actions / Elements:**

Facilitating improved alignment and coordination between land use and flood management would result in better understanding of flood risk and potential impacts to proposed developments, as well as improved decision making. Specifically, flood risk information has the potential to influence land use policy decisions related to developing and expanding communities within a floodplain, which would result in reductions to flood damage claims and long-term O&M costs on projects. At the planning stage, additional measures might be incorporated into the initial proposed projects that could provide community benefits, such as setback areas that act as greenways or trails, and greatly reduce the need to retrofit or replace undersized infrastructure in the future. Too often, regional and land use policymakers realize flood risk and economic losses only after a damaging flood event. Some of the additional actions associated with this item include defining increased floodways to limit development along the floodplain fringe, floodplain retreat through purchase of properties within the floodplain, ensuring that different land uses are compatible with the floodplain risks.

**Potential Multiple Water Resource Benefits:**

- Reduction in flood damage subsidies to chronic flood locations

**Strategy Application No. 14 – Multi-Function Retention / Detention Basin with Groundwater Recharge**

**IFM Objectives / Principles:**

- Flood reduction
- Groundwater recharge
- Stormwater recycling / alternative water source

**Description of Representative Actions / Elements:**

Regional watershed evaluation and planning to provide flood peak flow attenuation through either off-channel or adjacent in-channel temporary flood volume storage. The reduction in peak flow rates will minimize downstream flooding in addition the stored flood runoff volumes can be recharged into the aquifer to enhance groundwater supplies. Coordination with groundwater management agencies should be performed on a watershed basis to determine the optimum location to ensure that maximum recharge can be provided to the aquifer since different areas of the watershed may not provide any benefit to groundwater supplies. Coordination of both groundwater and flood benefits is necessary as part of advance planning with multiple agencies. In addition, floodplain enlargement can result in increased habitat corridors as well as the in-channel flood storage capabilities.

**Potential Benefits:**

- Reduced flooding downstream
- Stormwater recycling and additional water source capture

**Strategy Application No. 15 – Watershed Sediment Control / Surface Erosion Control / Stabilization Management Techniques**

**IFM Objectives / Principles:**

- Land use planning
- Development sustainability
- Water quality enhancement

**Description of Representative Actions / Elements:**

Soil is considered a water pollutant because it can significantly affect water used for public consumption, recreation and habitat. Therefore, the most effective way to control soil erosion is at its source. Erosion control best management practices (BMPs) are required on all land disturbance sites to provide a defense against soil erosion in addition to different commercial activities within the watershed. Watershed planning implementing and requiring different BMPs can be applied as well as the modification of these commercial activities to minimize sediment disturbances. There are also natural areas which may be de-stabilized and be a significant sediment source which require specialized treatments to reduce the amount of sediment production.

**Potential Benefits:**

- Receiving waters improved water quality
- Reduce flooding through reduced sediment bulking of flows
- Reduction of sediment deposition in undesirable locations within floodplain

**Strategy Application No. 16 - Hydromodification Runoff Management Techniques for New Developments**

**IFM Objectives / Principles:**

- Maintain natural hydrologic processes
- Infiltration groundwater supplies
- Flood volume and peak flow reduction
- Land use planning requirements
- Modify hydrologic cycle
- Downstream channel stability
- Prevent downstream channel erosion

**Description of Representative Actions / Elements:**

Urbanizing watershed can cause an alteration of flow (hydromodification) that increases the volume of runoff and decreases the infiltration of rainwater, an important source of groundwater recharge. Figure 1 shows stormwater discharges in an urban watershed and a pre-urban watershed .The greater volume and increased rate of flow that are associated with urbanization results in degradation of aquatic habitat and increased flood risk. On solution for hydromodification is LID which is an alternative method of land development that seeks to maintain and mimic the natural hydrologic processes by infiltrating, retaining, and slowly releasing stormwater on a site by site basis. LID often begins with careful site planning that considers the location of natural features and incorporates them into the stormwater management plan whenever possible. This may include retaining a wide riparian corridor to allow for natural stream processes, identifying and preserving areas with coarse sediment, protecting locations suitable for

groundwater recharge, and considering soil permeability and slope when siting bioretention areas. This approach is generally known as natural resource-based planning. Another solution is instream restoration practices (IRPs) modify the banks and beds of waterways using natural materials to return the stream to a less impacted condition and improves aquatic habitat. IRPs can affect two of the variables associated with hydromodification: the increased quantity of fine sediment (small particle size) and the increased slope (gradient) of streams and rivers. Bank erosion is a natural process, but is accelerated by the effects of hydromodification, which can have multiple negative effects on the aquatic ecosystem and riparian habitat. Intense stormwater flows associated with compacted soil and impervious cover are a major contributor to bank erosion. The rate of erosion varies, depending on existing vegetation type and location, soil composition, and the frequency and intensity of flows.

**Potential Benefits:**

- Channel stabilization
- Reduced channel erosion
- Maintaining the natural hydrologic process including hydrology quantities prior to urbanization
- Habitat enhancement and increased corridor

**Strategy Application No. 17 - Channel Improvement Projects with Public Trails / Bikeways**

**IFM Objectives / Principles:**

- Alternative public transportation
- Enhance circulation patterns
- Multi-use roadway
- Promote health and fitness by providing people the opportunity for active recreation
- promote economic development, specifically at trailhead locations
- Increase user safety by offering dedicated travel routes for pedestrians, bicyclists
- Offer viable and safe transportation alternatives
- Support the protection and preservation of natural resources

**Description of Representative Actions / Elements:**

The design of a multi-use roadway should be compatible with the maintenance requirements of the channel system and the structural section of the bike roadway should be designed to accommodate the large maintenance vehicles. Specialty features such as gates or bollards may be required to restrict other types of vehicles from access the trail system. The design section, including the width should be based on the AASHTO or Caltrans HDM which also includes the striping and signage.

**Potential Benefits:**

- Alternative transportation path
- Recreation
- Habitat enhancement and increased corridor

**Strategy Application No. 18 - Parks with Integrated Flood Storage / Infiltration Areas**

**IFM Objectives / Principles:**

- Groundwater recharge
- Peak and volume flow reduction
- Water quality treatment
- Maintain natural hydrologic processes

**Description of Representative Actions / Elements:**

Integrate groundwater recharge and retention of stormwater as part of active park system through the initial planning and layout of the part system so that this objective is an integral part of the overall design. Creative use of the engineered grading and topographic design for the park to ensure that surface drainage paths and storage volume is provided. The identification of potential flood storage within the park requires special planning to ensure that the beneficial functions of the park are still maintained for recreation and to minimize maintenance. The park provides an excellent opportunity to provide education benefits to the general public related to stormwater resources. Three interpretive signs were installed at the park to introduce visitors to LID, the specific functions of the LID elements in the park, and how LID can be used in a variety of development scenarios One of the objectives is to introduce use an alternative to the conventional "pipe and pond" approach to stormwater management - Low Impact Development (LID). LID is an ecologically-based approach to stormwater management that creates a hydrologically functional landscape that generates less surface runoff and less nonpoint pollution, which is especially important for development projects adjacent to sensitive resource areas. Additional recharge elements that can be integrated into the park include rain gardens, porous pavers, and bioretention swales.

**Potential Benefits:**

- Enhanced groundwater supplies
- New water source
- Urban water quality treatment
- Public education on water resources protection

**Strategy Application No. 19 – Floodplain Land Acquisition**

**IFM Objectives / Principles:**

- Floodplain preservation
- Land use managements
- Reduced flood losses

**Description of Representative Actions / Elements:**

Acquiring properties within the floodplain which are subject to "repetitive losses" is a non-structural adjustments to floodplain management. This is a cost effective method of reducing flood losses and better managing the land use with flood hazard zones. Generally the "fair market value" of the land is limited because of the restricted use within the floodplain. In addition this provides the ability to increase publically controlled areas of the floodplain and potential restore these areas back to the natural floodplain. However, land acquisition programs in urban areas is a complex process and encounter problems because they are seen to infringe on personal rights, adversely affect property values and restrict local tax bases when they lead to demolition of buildings and other structures considered to have historical or architectural value. The acquired land provides the ability to restore natural habitat and develop a habitat corridor within the floodplain, limiting manmade uses within the floodplain.

**Potential Benefits:**

- Increased public floodplain corridor
- Land use management and restricted uses within the floodplain
- Increased floodplain corridor
- Increased habitat corridor
- Economic flood loss reduction

**Strategy Application No. 20 - Bridge/ Channel Invert Stabilization**

**IFM Objectives / Principles:**

- Floodplain preservation
- Creek stabilization
- Erosion reduction
- Water quality
- Peak flow reduction through bulking factor
- Floodplain vegetation preservation

**Description of Representative Actions / Elements:**

Protection of flood channel structures and roadway bridge crossings from erosion and preventing failures of these structures. Stabilization of the channel invert

**Potential Benefits:**

- Floodplain structure protection / damage prevention
- Roadway (lifeline) protection
- Channel erosion reduction
- Water quality improvement

**Strategy Application No. 21 - Agricultural Runoff Water Quality Treatment**

**IFM Objectives / Principles:**

- Water quality treatment

**Description of Representative Actions / Elements:**

Agricultural runoff and non-stormwater releases from excess irrigation, including "drain water" results in poor water quality. This can result in impaired water quality through high nutrients and salts as a few examples. The runoff and non-stormwater discharges can be treated through a variety of different types of BMPs targets to specific pollutants in the water. These facilities can be integrated into the overall operation and may require more specialized applications to accommodate physical constraints such as elevation differential associated with drain water outfall locations.

**Potential Benefits:**

- Water quality treatment
- Achieve water quality objectives and TMDLs
- Improve receiving waters
- Floodplain habitat and vegetation health

**Strategy Application No. 22 - Recycle Agricultural/Urban Non-stormwater Discharge for Non-potable Water**

**IFM Objectives / Principles:**

- Water recycling
- Secondary water supply
- Water treatment
- Water quality

**Description of Representative Actions / Elements:**

Collection, treatment, and reuse of excess agricultural water runoff associated with irrigation and drain water. Excess irrigation water as well as drain water from tile drain systems discharges a water source to the channels that can be recycled as a non-potable water source if the water quality is improved. The same is true of urban non-stormwater or dry-weather discharges can be captured and recycled. Generally, the urban discharges are relatively small and can be captured with infiltration and LID type applications. However, there is the potential in new residential and commercial construction to utilize "grey water" and recycle it for use as a potential irrigation water source for landscaping. The excess agricultural drain water and irrigation flows can be captured and recycled through larger scale natural treatment systems such as wetlands to remove nutrients. However, salt removal is more difficult and cannot be readily removed through natural treatment systems and would require different technologies in an engineered treatment system to achieve the desired pollutant removal.

**Potential Benefits:**

- Enhanced water supplies
- New water source
- Water quality
- Non-stormwater discharges

**Strategy Application No. 23 - Coordination between programs/agencies for water management and flood management planning**

**IFM Objectives / Principles:**

- Communication between agencies within watershed
- Watershed planning guidance / regulations
- Enhanced water supplies
- Water management

**Description of Representative Actions / Elements:**

Improving coordination between regional water management and flood management planning is a key strategy to increase implementation of IWM projects. Existing planning groups and forums should be utilized to the extent possible. By coordinating water and flood management planning with balanced representation, a common understanding of flood management, water supply, water quality, environmental stewardship, public safety, and economic sustainability factors would be developed. Where possible, policy changes that promote this holistic approach to IWM should be proposed and sponsored (for example, changes to existing IRWM legislation). In addition, coordination in watershed planning process provides the opportunity to optimize the benefits of joint-use regional facilities to maximize water resources as well as flood mitigation benefits.

**Potential Benefits:**

- Maintaining natural watershed response
- Increased groundwater replenishment
- Reduced flood damage
- Reduction in flood maintenance

**Strategy Application No. 24 - Watershed / floodplain information management and data exchange**

**IFM Objectives / Principles:**

- Communication between agencies within watershed
- Community involvement
- Increased watershed monitoring

**Description of Representative Actions / Elements:**

Improving the watershed database to ensure that different watershed stakeholders have access to the different available information and studies being performed. The sharing and the exchange of data, information, knowledge among experts, general public, policy makers, and floodplain managers in a most transparent manner is essential for comprehensive planning and effective management. Significant studies and mapping information are being performed within the watershed on an individual basis with single users or sole functions, but could become a valuable asset is shared with other users as well as saving significant costs. Fragmentation of data is common and providing a common data repository as well as manager provides the technical foundation for comprehensive planning.

**Potential Benefits:**

- Improved tracking and monitoring of watershed characteristics
- Reduction in data acquisition
- Enhanced community involvement in watershed, include active participation in data collection

## 7.3 Defining "Opportunities" for IFM

It is useful to consider the "opportunities" for the implementation of regional and sub-regional facilities utilizing IFM and the associated planning principles. These "opportunities" are watershed or floodplain characteristics which would define the potential suitable application of IFM at a particular location. There are certain watershed characteristics which would make IFM ideal at a particular location such as an area which has high infiltration capabilities above a water producing aquifer. The series of "opportunities" in GIS mapping layers that were considered in the initial development of this planning or screening tool to consider locations for IFM in the watershed included: (1) floodplain areas, (2) highly permeable soils (hydrologic soil type A), (3) groundwater basins, (4) riparian vegetation or sensitive habitat area, and (5) high sediment producing watershed areas. These initial mapping layers were overlaid to determine the locations where multiple occurrences of these five criteria occurred and were considered "opportunities." The more opportunities at a particular location then the more there was the possibility of achieving multiple flood management and water resources benefits. For example, in-stream groundwater recharge locations would be possible at location where there is (1) wide floodplain area, (2) permeable soil, and (3) groundwater basin in order to maximize the benefits to the aquifer. The "opportunity ranking" shown on the following exhibits identifies how many IFM opportunities occur at a

particular location. The rankings scale is shown as 1 through 6 which indicates how many opportunities occur at a particular location. For example, a ranking of 4 would indicate that there are four different opportunities which would encourage the use of IFM at this particular location, so it would be very conductive for many different potential IFM strategies.

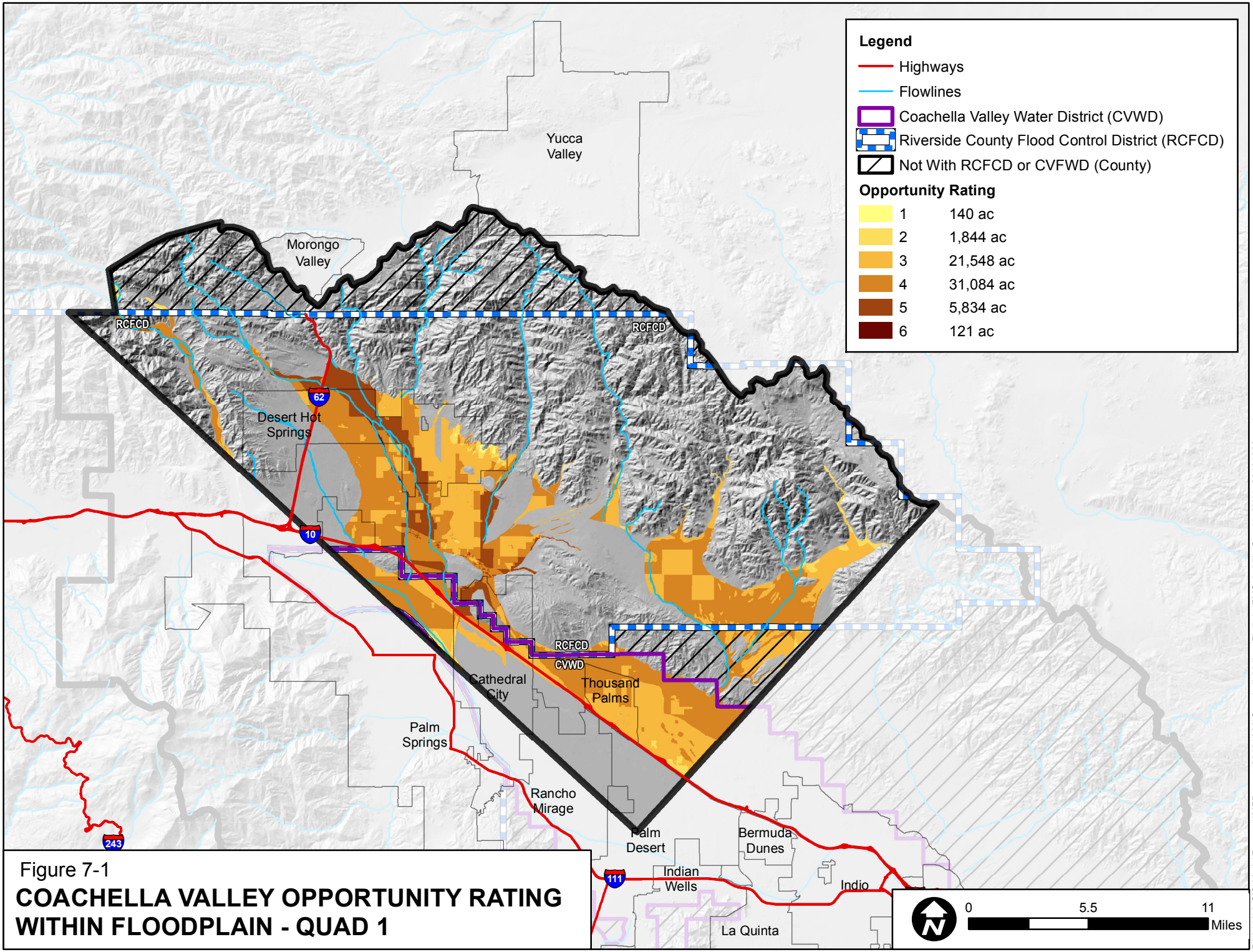



Figure 7-1

# COACHELLA VALLEY OPPORTUNITY RATING WITHIN FLOODPLAIN - QUAD 1

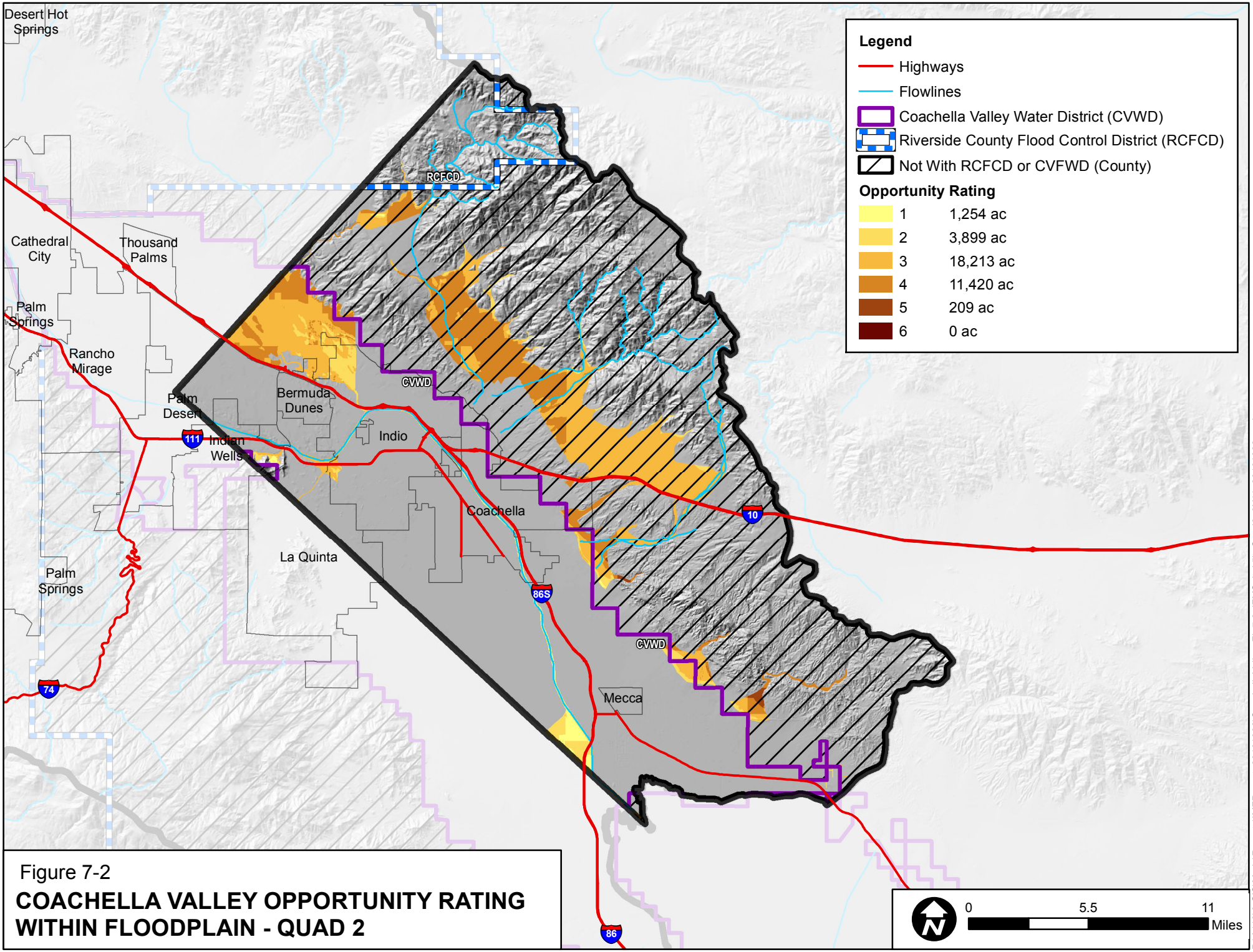



Figure 7-2

**COACHELLA VALLEY OPPORTUNITY RATING WITHIN FLOODPLAIN - QUAD 2**

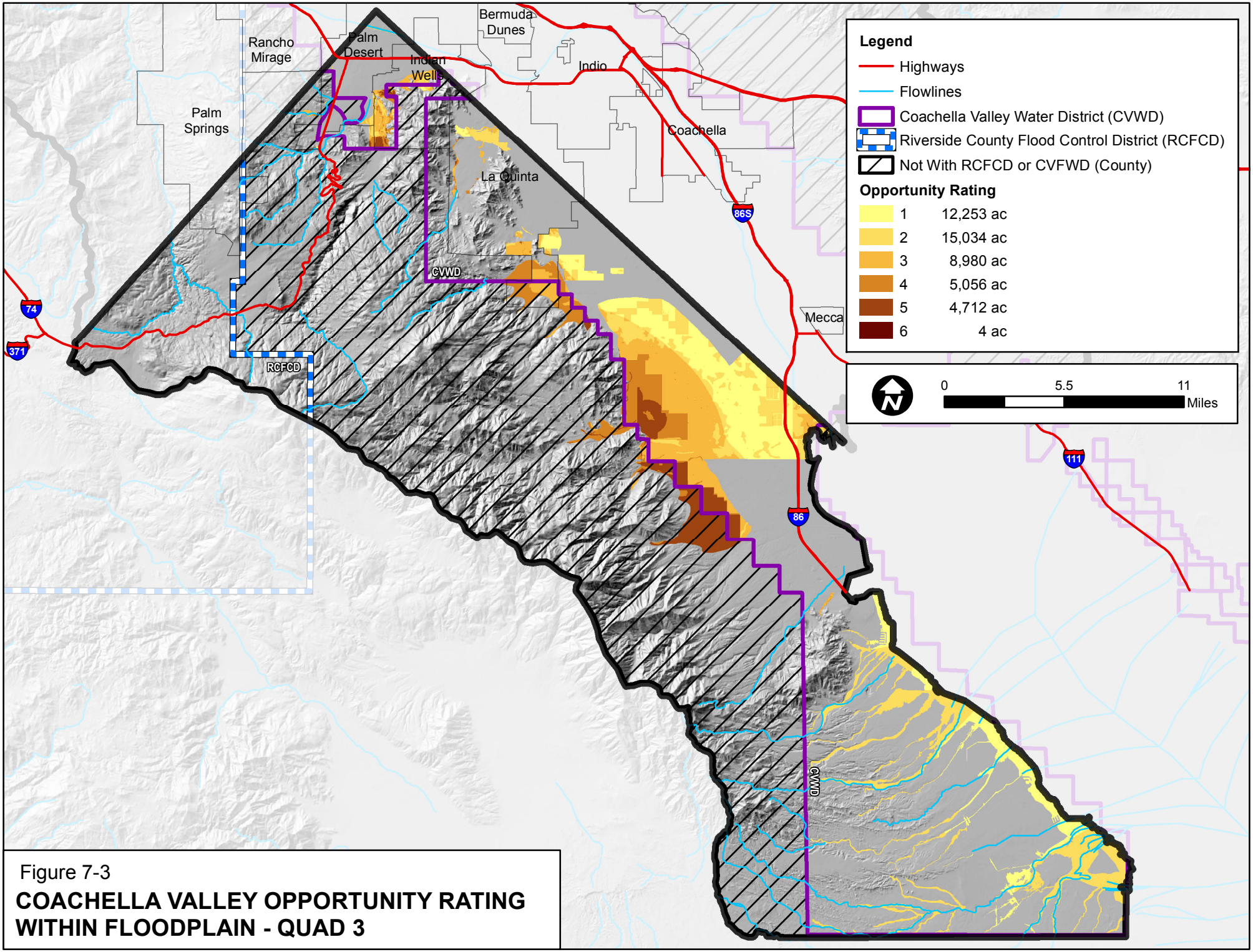



Figure 7-3

**COACHELLA VALLEY OPPORTUNITY RATING WITHIN FLOODPLAIN - QUAD 3**

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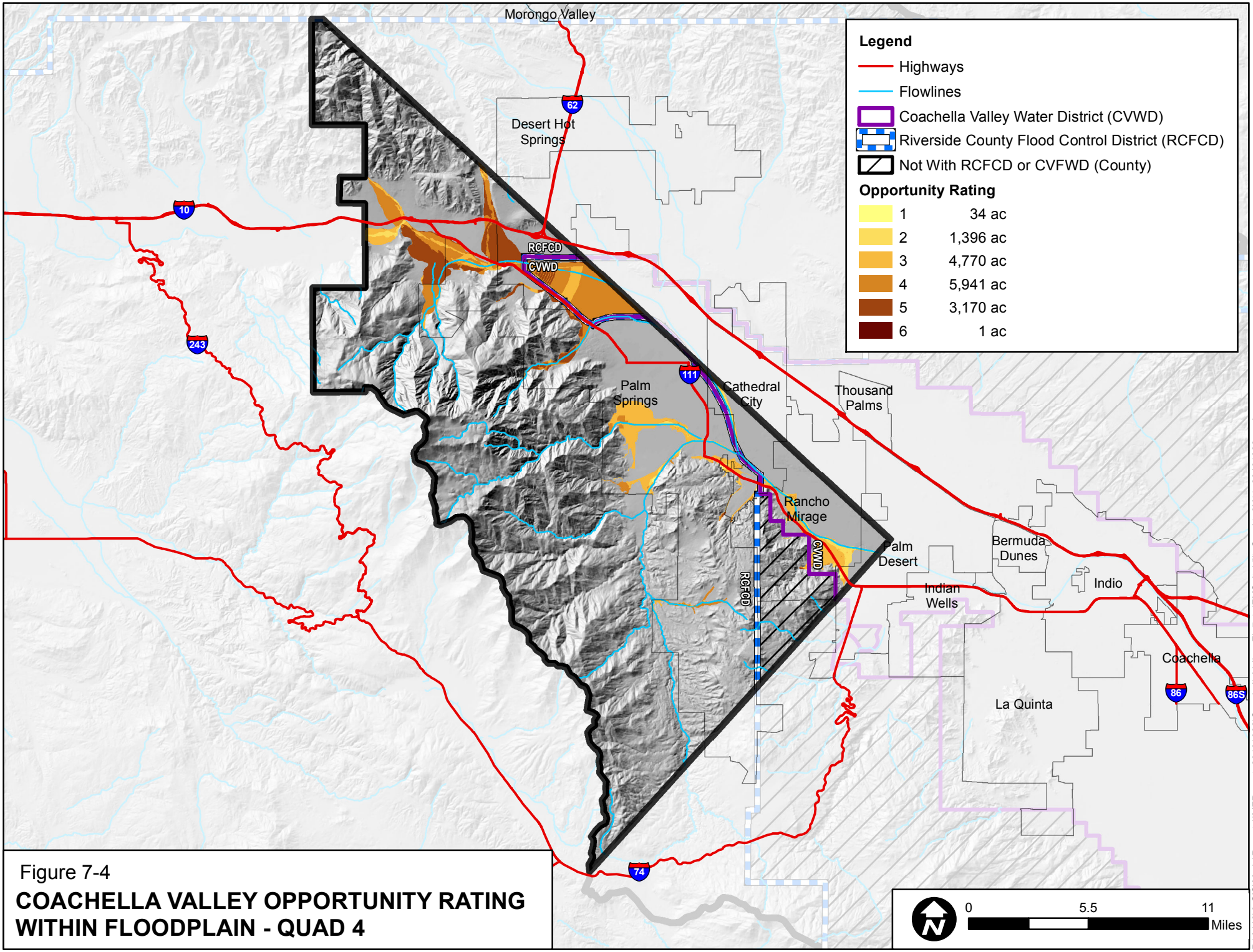


Figure 7-4

**COACHELLA VALLEY OPPORTUNITY RATING WITHIN FLOODPLAIN - QUAD 4**

## 7.4 Specialized GIS Mapping Watershed IFM Planning Tool

The actual implementation of different IFM strategies for specific project should ensure that (1) the maximum number of benefits is achieved, (2) optimum location within the watershed to achieve the maximum flood benefits is identified, (3) multiple flood hazard issues are addressed, and (4) the focus on different water resources objectives is achieved. In order to assist in developing these projects on a watershed basis, a watershed planning tool has been developed to define locations within the watershed or floodplain that would potentially be able to utilize a specific type of IFM strategy based on the different characteristics and opportunities. A mapping tool was developed to help identify the locations within the Coachella Valley where the different IFMs could be best applied as an "initial screening tool" in the planning process for IFM.

The planning tool was developed by correlating (1) watershed characteristics, and (2) IFM opportunity mapping to the different general categories of IFM strategies initially defined for the Coachella Valley. This initial screening process is best illustrated in the following figure which shows the overall process for developing the general IFM strategy locations within the Coachella Valley. The process included (1) defining the different benefits from the IFM approach, (2) limiting the IFM strategies to just the desert area, and (3) correlating the watershed characteristics required for a particular IFM strategy. The GIS database is available as well as the hardcopy exhibits so this planning technique can be applied manually through the use of this guidance document.

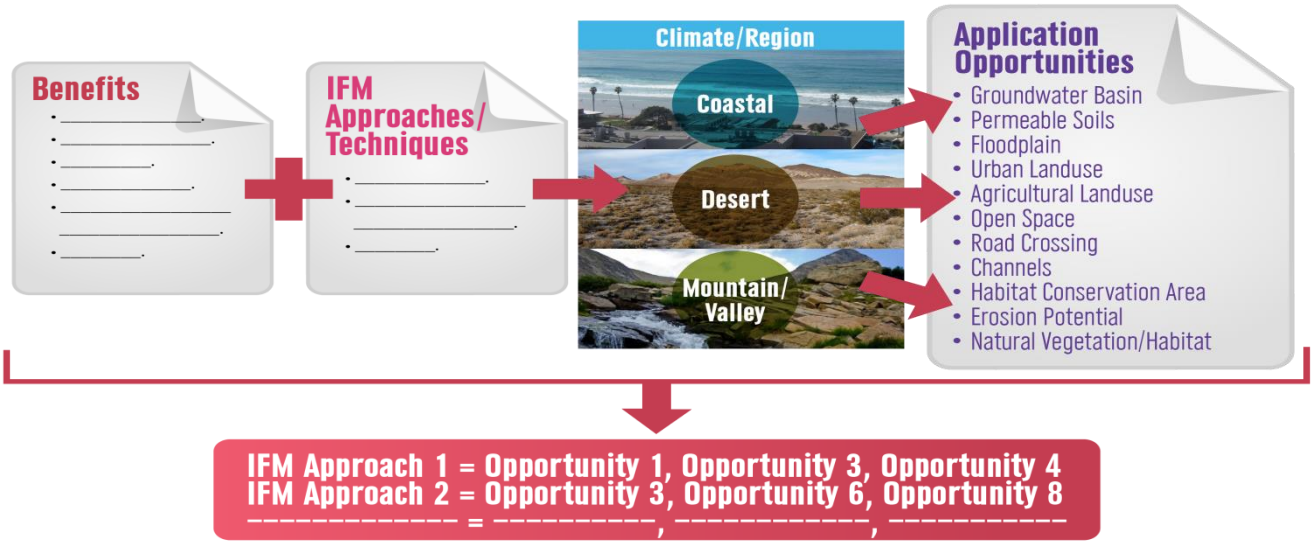


**Figure 7-5: Methodology for developing IFM planning tool which correlated watershed characteristics/opportunities to specific IFM strategy requirements**

This methodology for the planning tool development utilized 12 different watershed characteristics or opportunities typically associated with different IFM strategies which included: (1) permeable soils, (2) floodplain areas, (3) urban land use, (4) agricultural land use, (5) roadway channel crossing, (6) groundwater basin, (7) natural vegetation / habitat, (8) habitat conservation area, (9) recreation land use, (10) open space land use in floodplains, (11) channels, and (12) high erosion

potential. These 12 different opportunities were compared to 22 different IFM approaches identified for the Coachella Valley. (24 IFM strategies have been identified for the Coachella Valley, but that last two were considered policy oriented IFMs so only 22 IFMs were used in the mapping tool).

This guidance/planning tool is intended to be used as background in the initial planning to identify the range of these different types of projects for implementation using multiple IFM strategies within the watershed. However, the intent of this document is not to limit the range of specific strategies. These potential projects depend in part on the lead agency or entity promoting the particular sub-watershed facility plan implementation and many other influential factors such as timing and opportunity. The objective in developing this initial planning tool is to provide as much flexibility as possible in order to allow responding to potential implementation/funding opportunities that may be available in the future that will allow the construction of different facilities. A feature of this planning is to identify feasible alternative regional and sub-regional facility locations based on specific feasibility selection screening criteria. The results of the alternative screening exercise based on feasibility of opportunities does not preclude the use of additional alternative sites in the future, as other different types of opportunities may be presented since the feasibility screening was based on a specific set of criteria. The resulting screening and correlation analyses developed a series of different categories of IFM approaches that required the use of different sets of IFM opportunities which were labeled as an "IFM Category." The following table indicates the results of the analyses as well as Figures 7-6 through 7-21 which represent the final planning tool to assist in the location of the IFM strategies.

**Table 7-2: Results of Analysis Correlating IFM Strategy with Watershed Opportunities Generating and IFM Category**

| IFM No. | Opportunity Combinations | IFM Category |
|---|---|---|
| 1 | 1, 2, 6, 11 | A |
| 2 | 2, 4, 7, 8 | B |
| 3 | 2, 4, 7, 8, 11 | C |
| 4 | 2, 4, 7, 8, 11 | C |
| 5 | 1, 2, 6, 10 | D |
| 6 | 1, 3, 6 | E |
| 7 | 3, 9 | F |
| 8 | 2, 4 | G |
| 9 | 3, 4, 9, 11 | H |
| 10 | 10 | I |
| 11 | 3 | J |

| IFM No. | Opportunity Combinations | IFM Category |
|---|---|---|
| 12 | 10, 12 | K |
| 13 | 2, 3, 4 | L |
| 14 | 3, 4, 9 | M |
| 15 | 3, 4, 7 | N |
| 16 | 3 | J |
| 17 | 5, 10 | O |
| 18 | 3, 9 | F |
| 19 | 2, 3, 4 | L |
| 20 | 5, 10 | O |
| 21 | 4 | P |
| 22 | 3, 4 | Q |

The GIS IFM watershed planning tool evaluated different types of "opportunities" that define water resource benefits and IFM planning requirements to define the most appropriate locations. There may be other IFM strategies that can be considered that are not in the identified list which allows flexibility in the tool. The list of identified strategies is intended to be complete as possible utilizing the more common approaches, but there is opportunity to expand. In the future, additional screening criteria can be added to the tool as well as additional features such as evaluating the amount of tributary watershed area to assess the potential benefit or understand facility sizing. The tool provides planning level information to assist in evaluating potential IFM features within the watershed to maximize the beneficial water resources use.

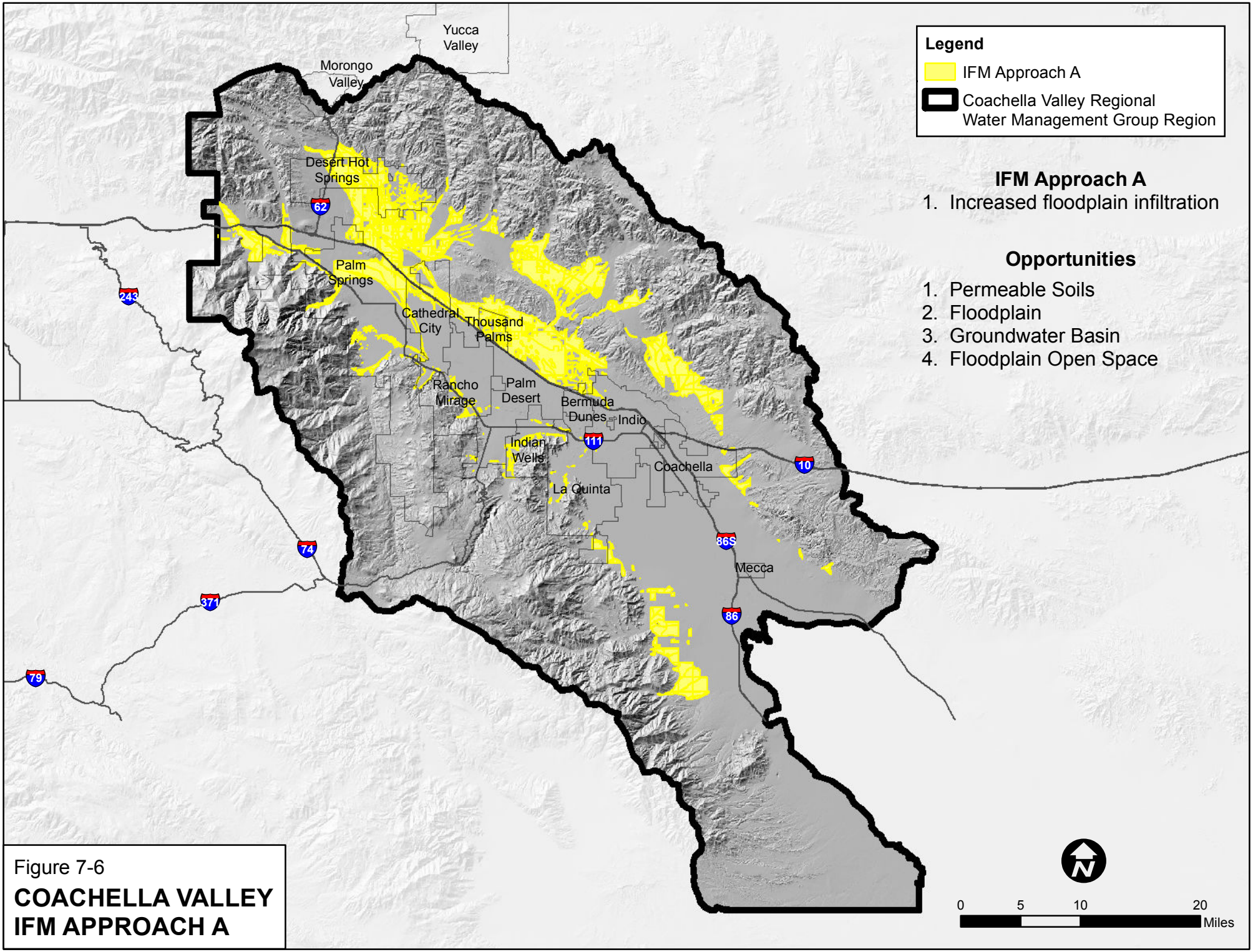


Figure 7-6

**COACHELLA VALLEY IFM APPROACH A**

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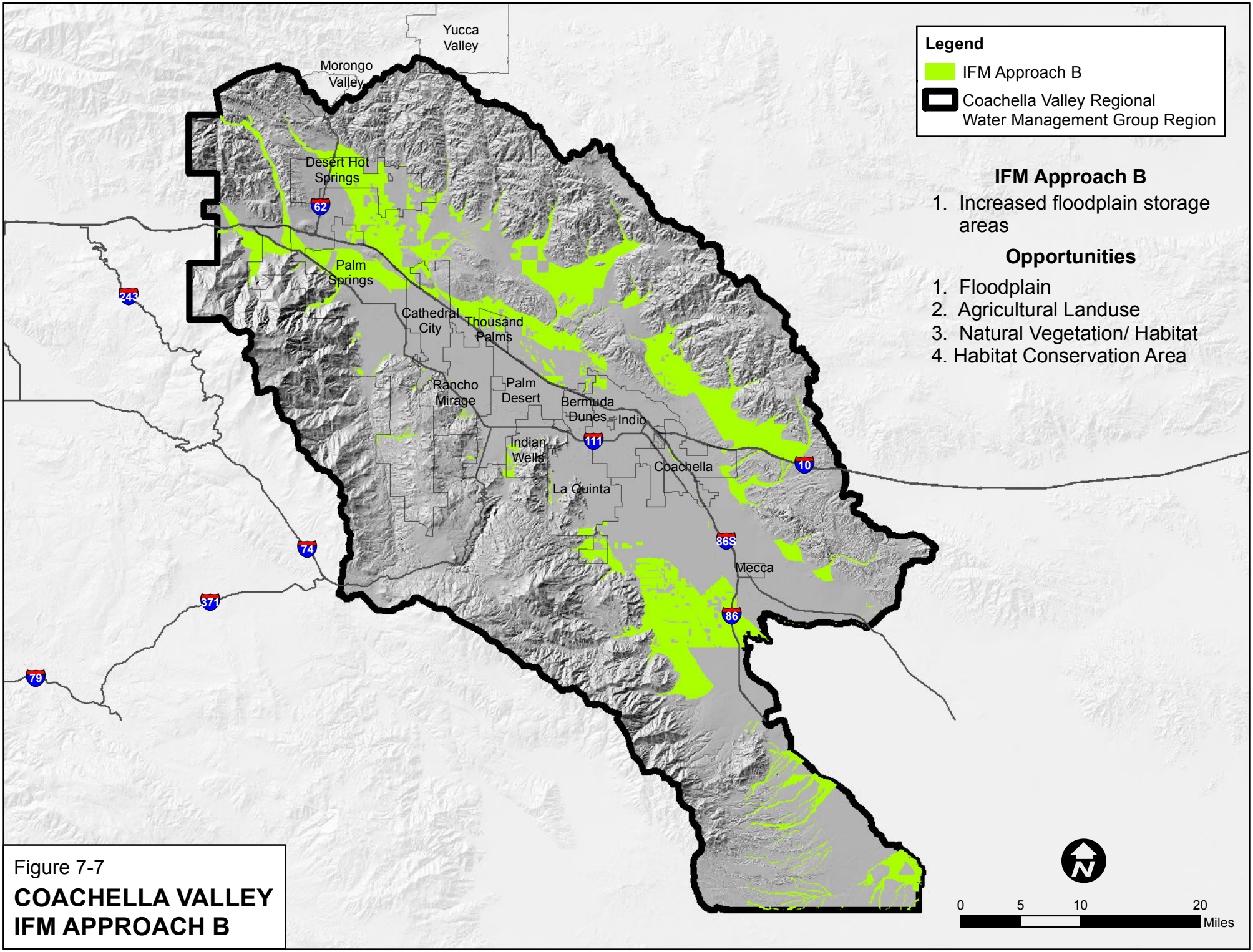


Figure 7-7

**COACHELLA VALLEY IFM APPROACH B**

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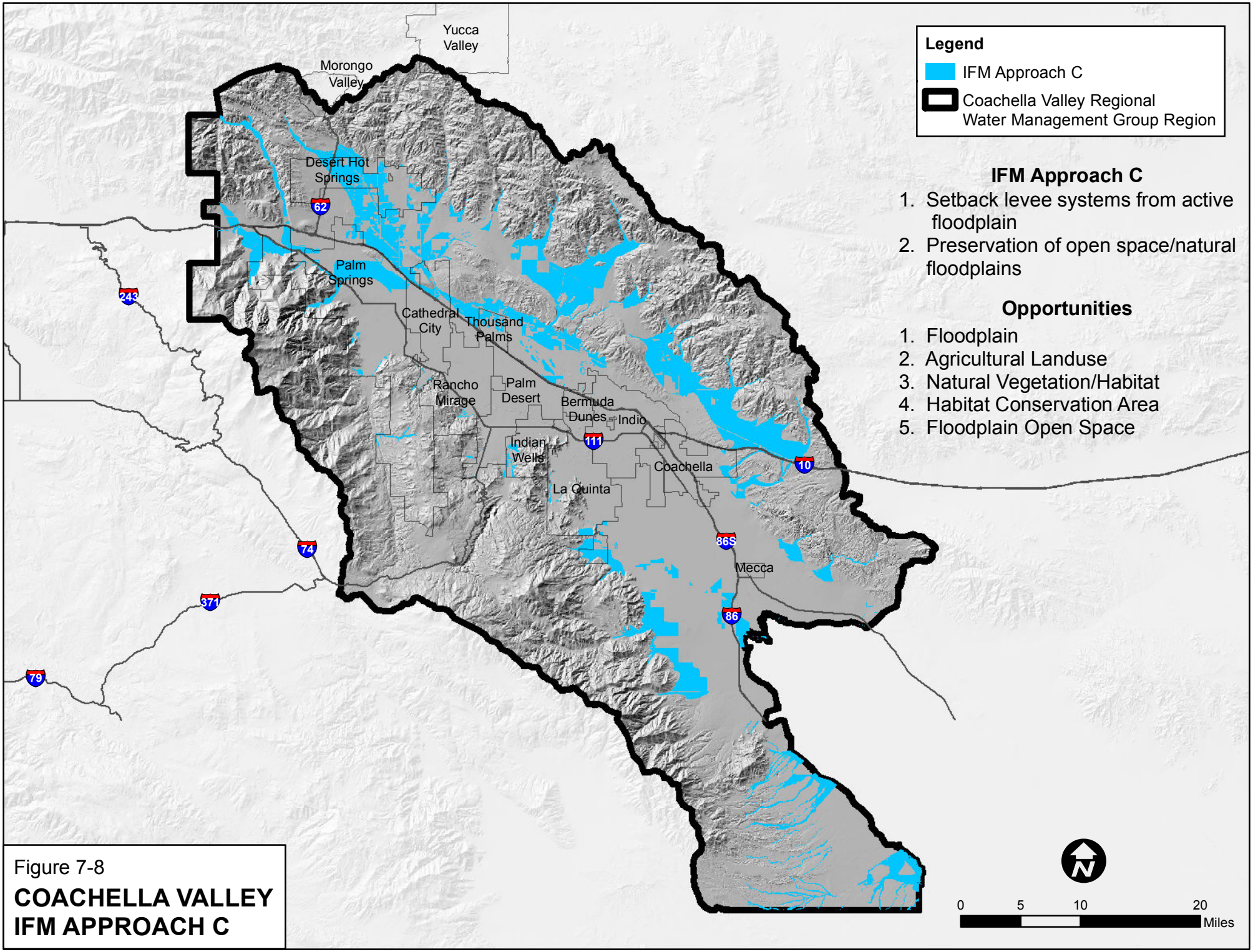


Figure 7-8

**COACHELLA VALLEY IFM APPROACH C**

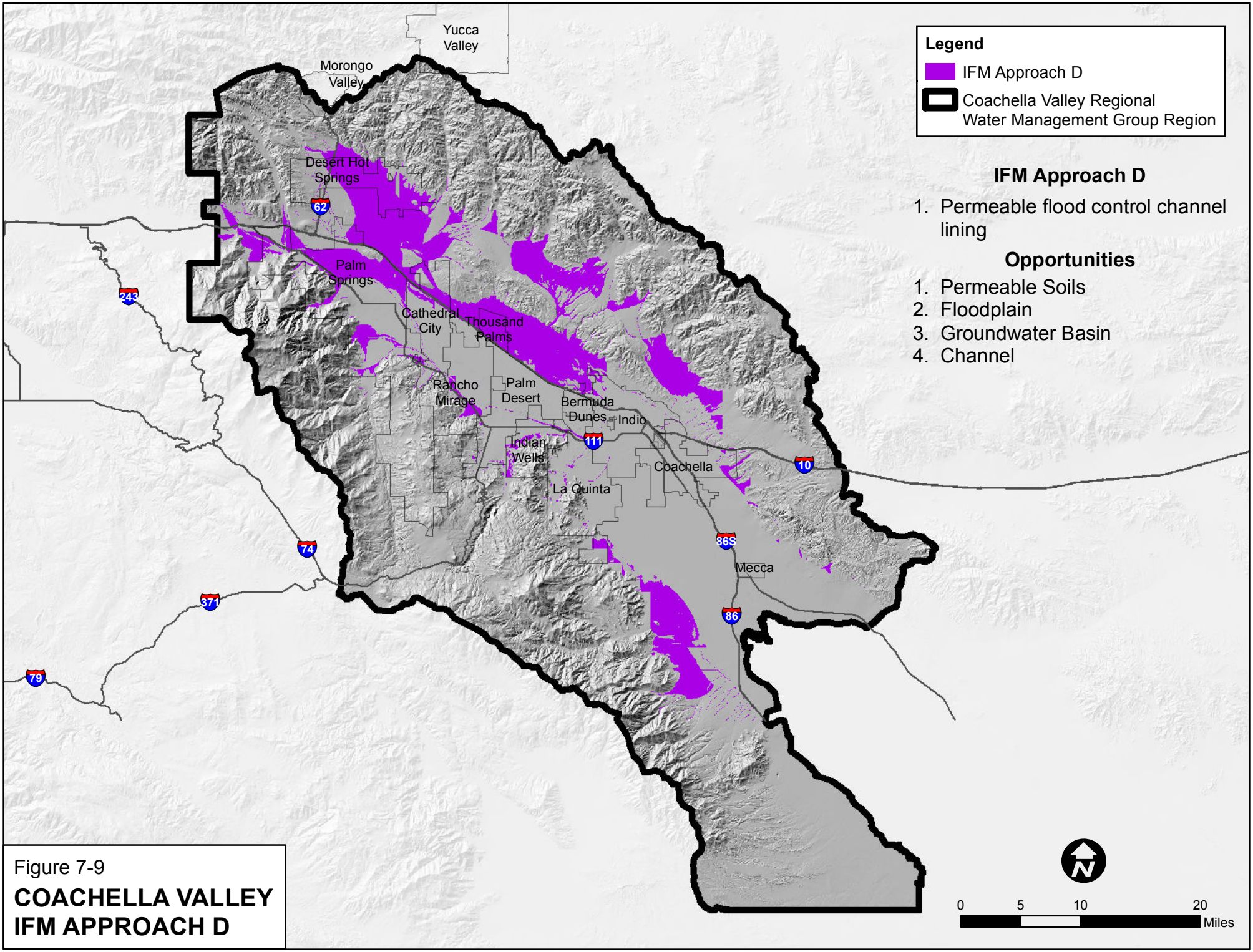


Figure 7-9

**COACHELLA VALLEY IFM APPROACH D**

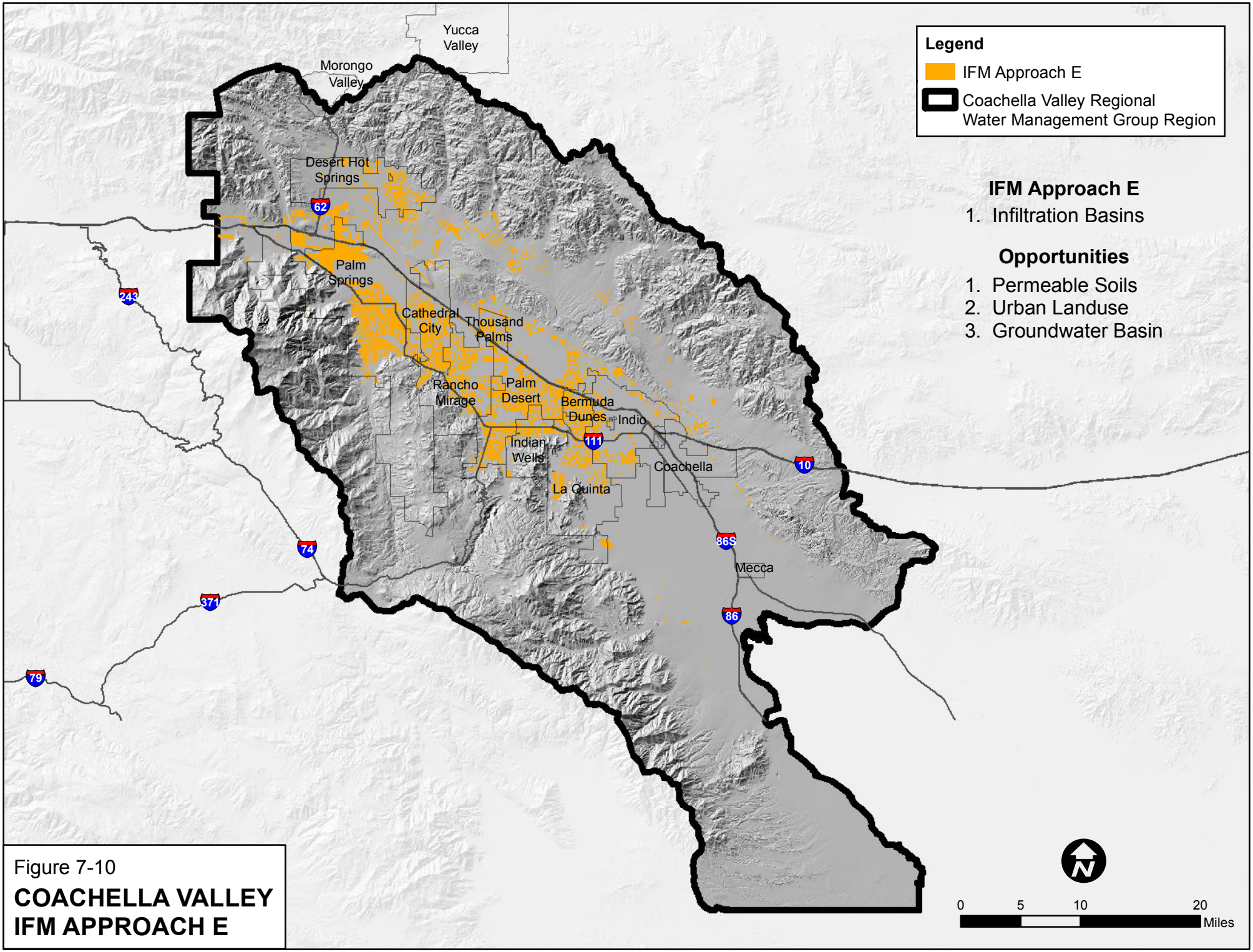


Figure 7-10

**COACHELLA VALLEY IFM APPROACH E**

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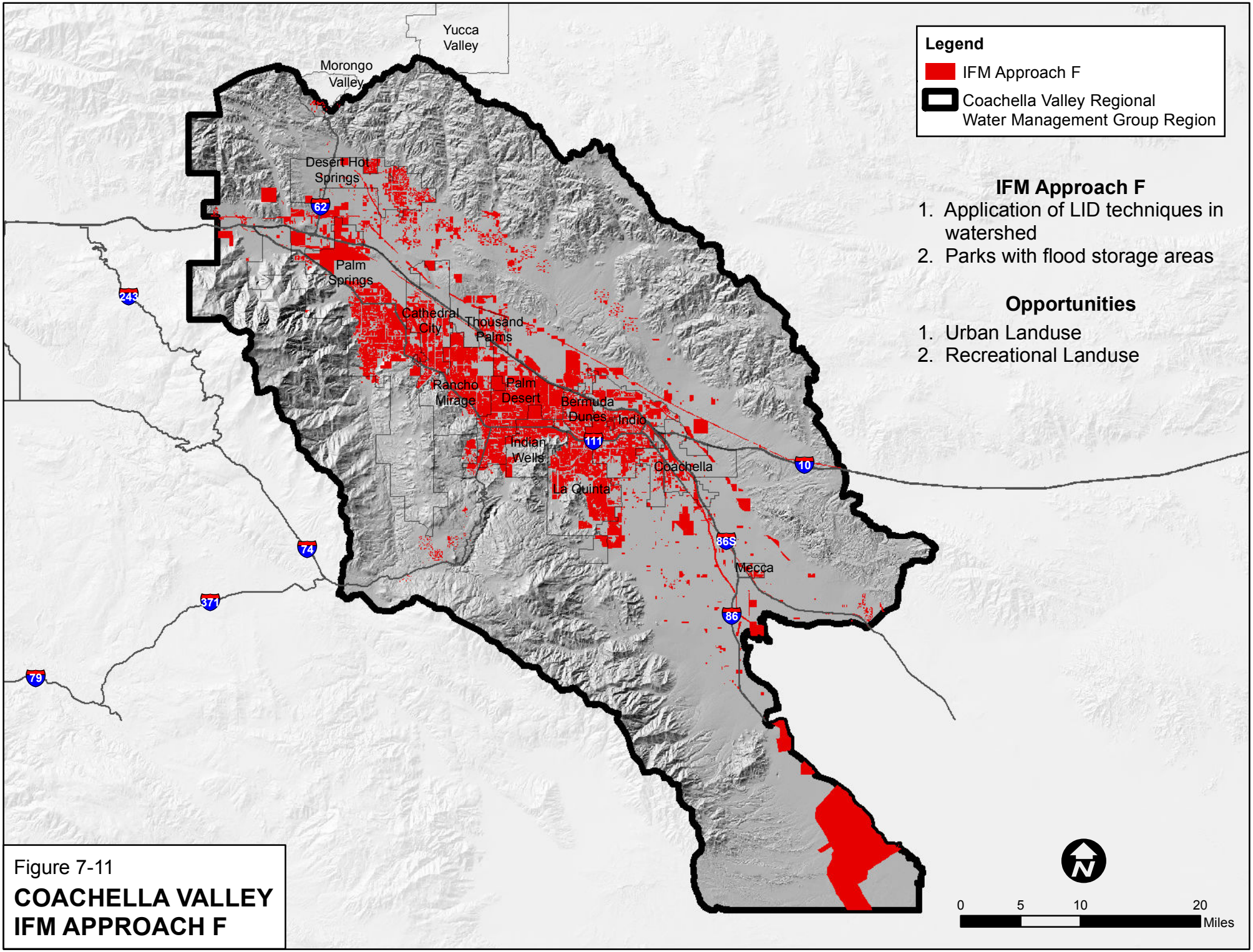


Figure 7-11

**COACHELLA VALLEY IFM APPROACH F**

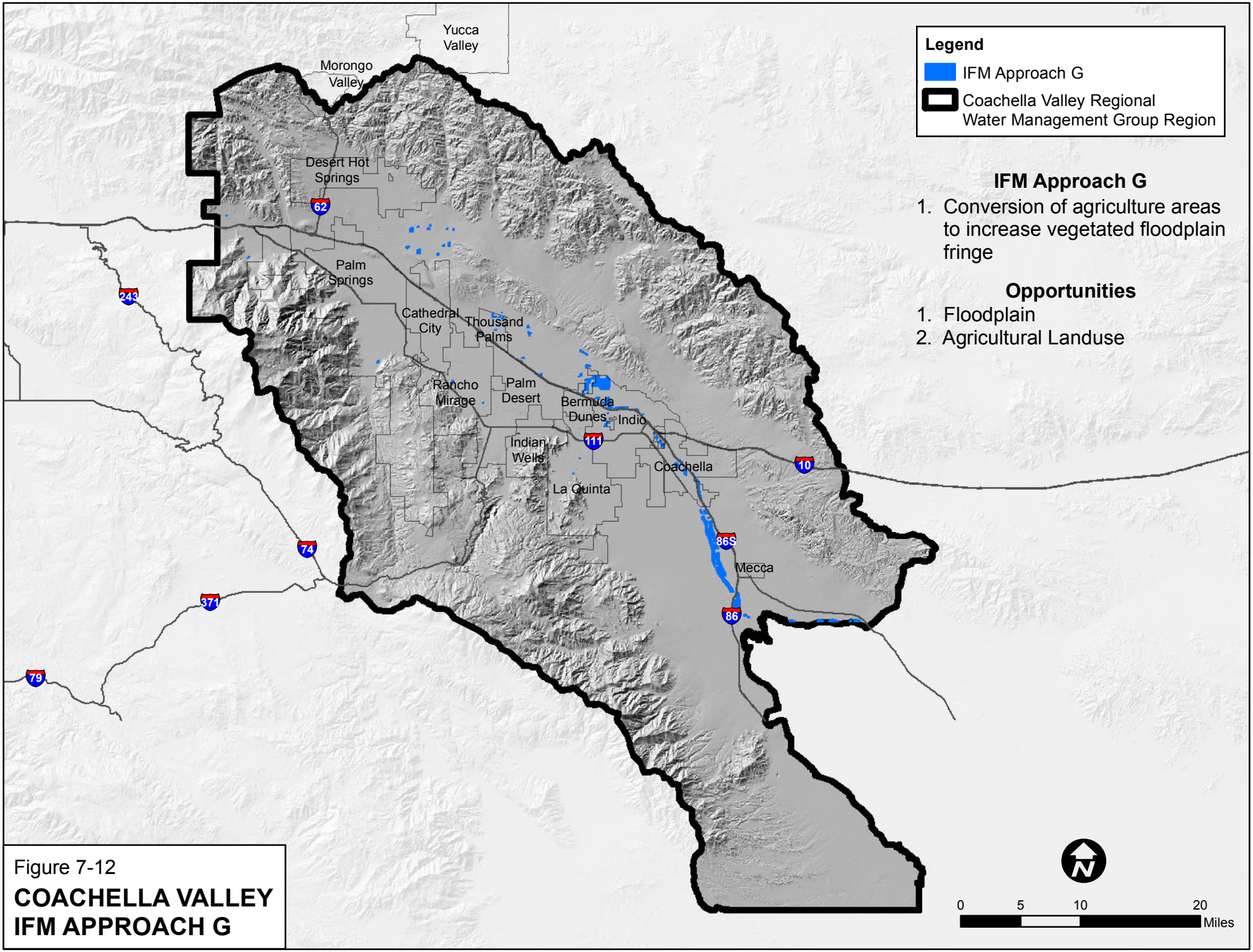


Figure 7-12

**COACHELLA VALLEY IFM APPROACH G**

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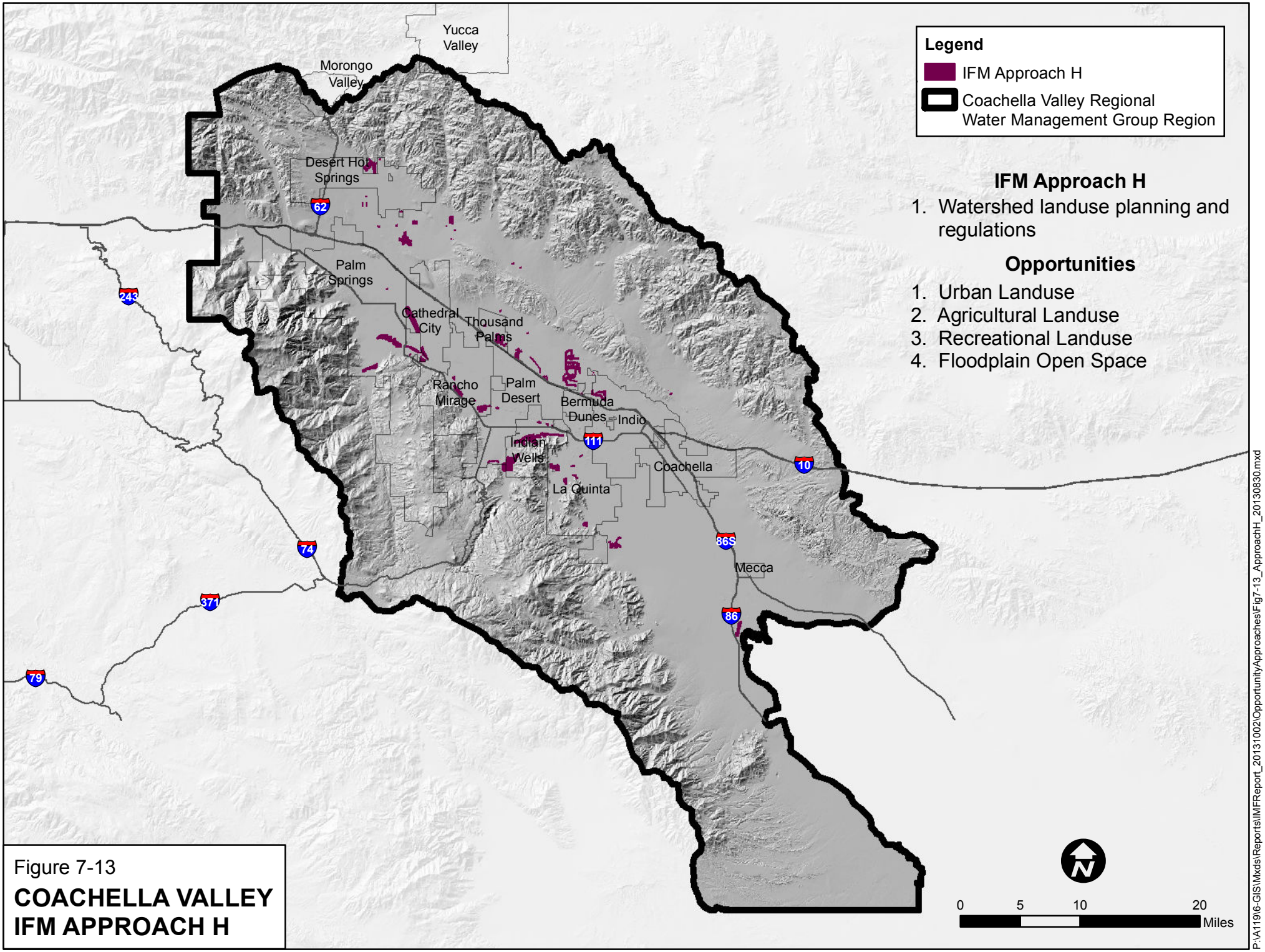


Figure 7-13

**COACHELLA VALLEY IFM APPROACH H**

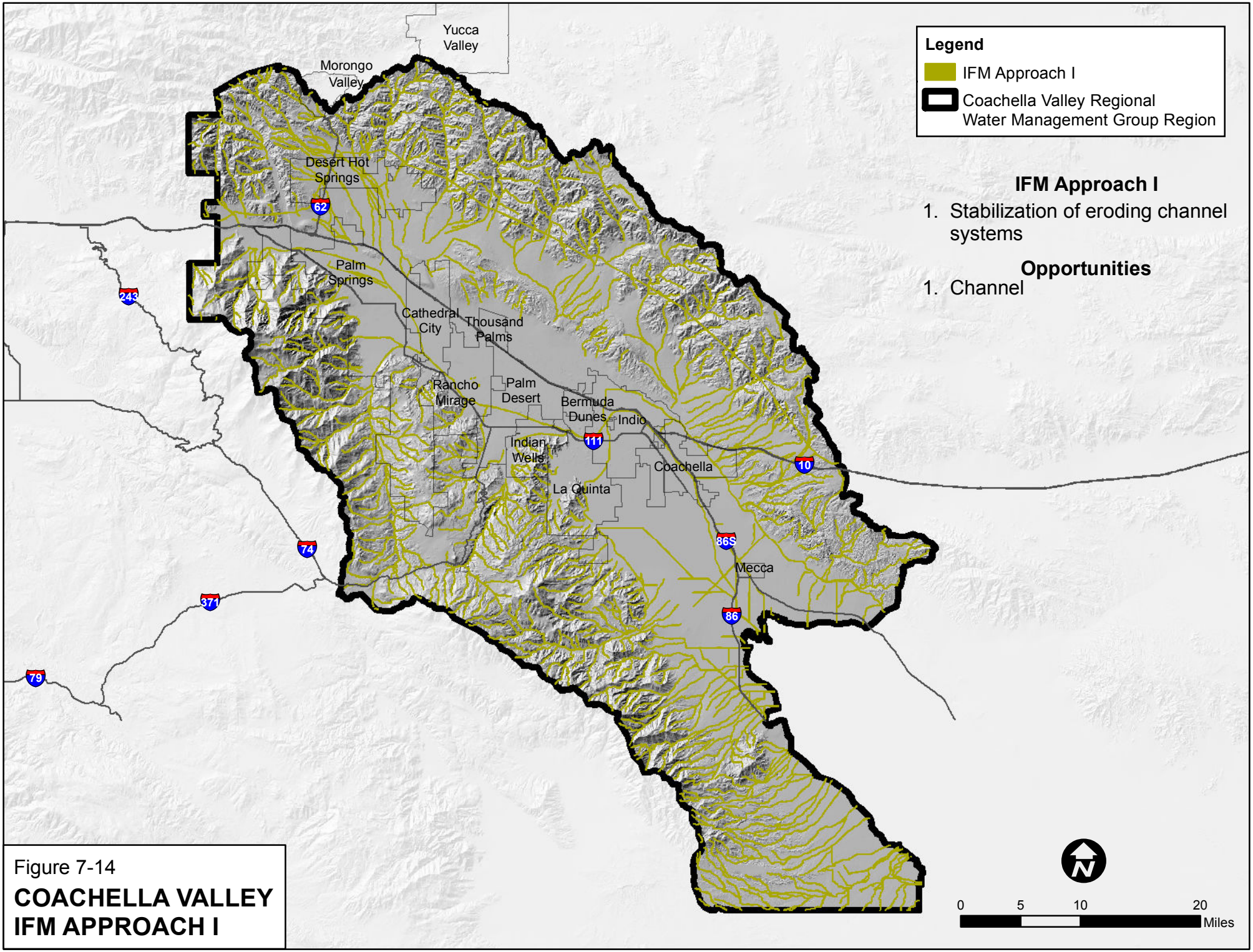


Figure 7-14

**COACHELLA VALLEY IFM APPROACH I**

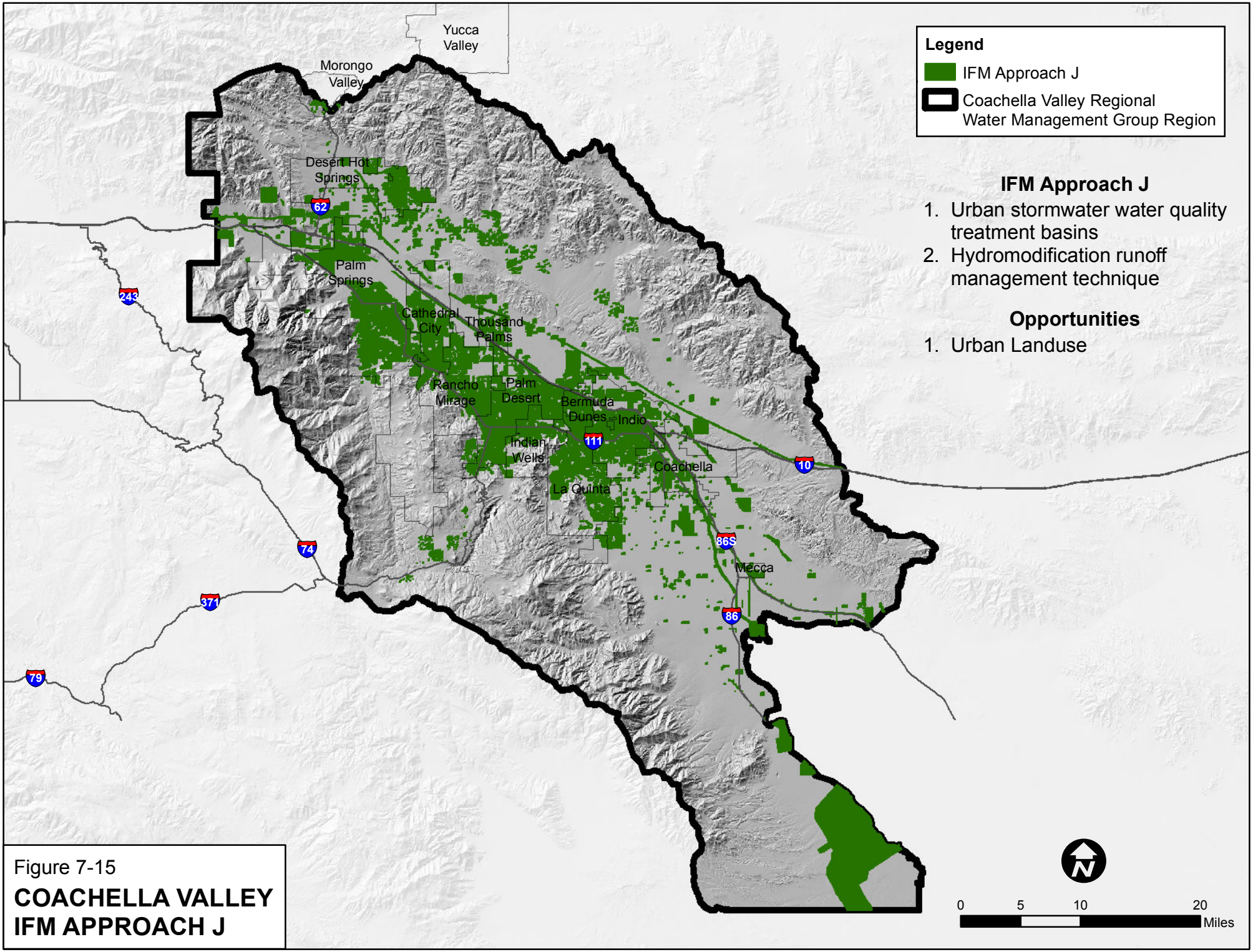


Figure 7-15

**COACHELLA VALLEY IFM APPROACH J**

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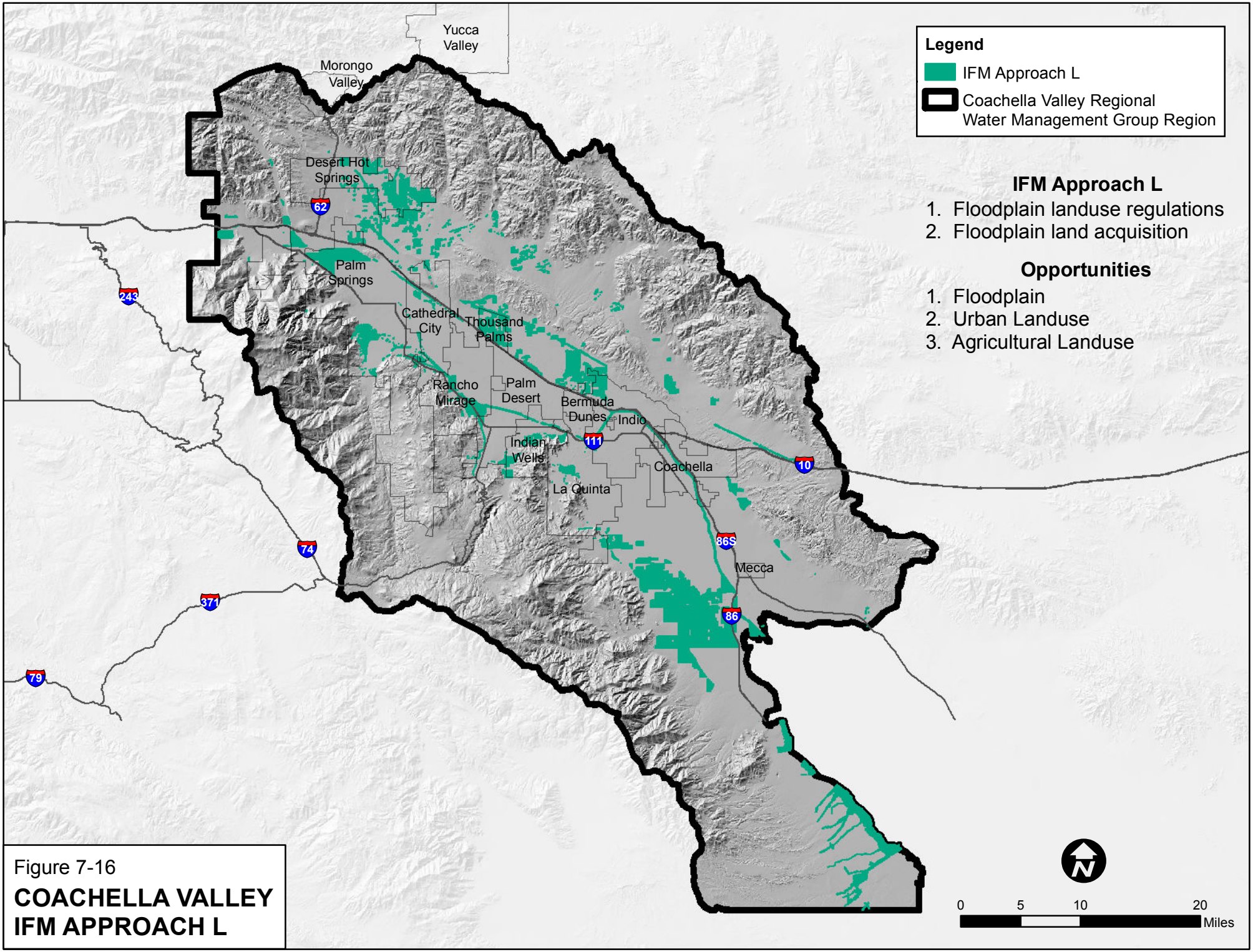


Figure 7-16

**COACHELLA VALLEY IFM APPROACH L**

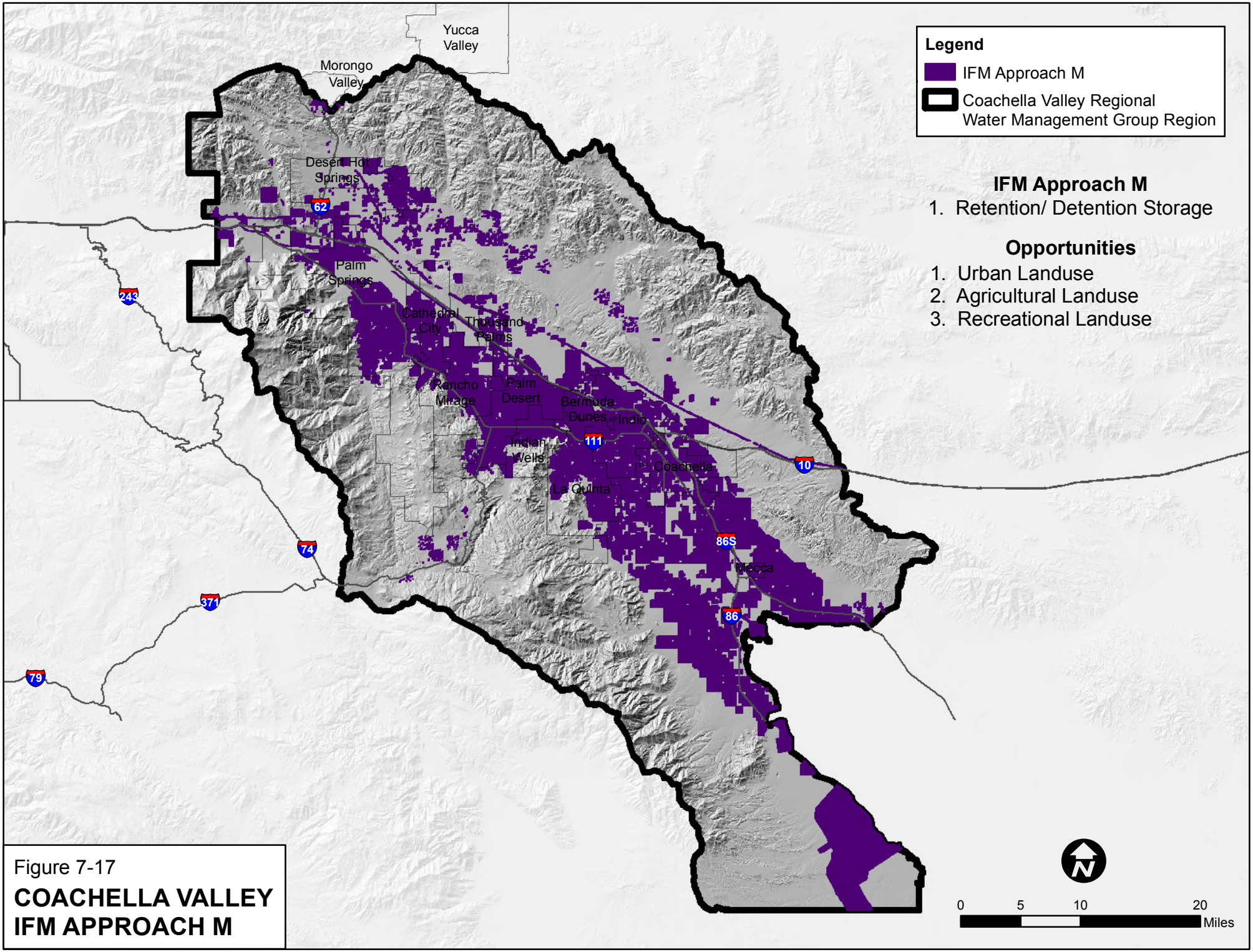


Figure 7-17

**COACHELLA VALLEY IFM APPROACH M**

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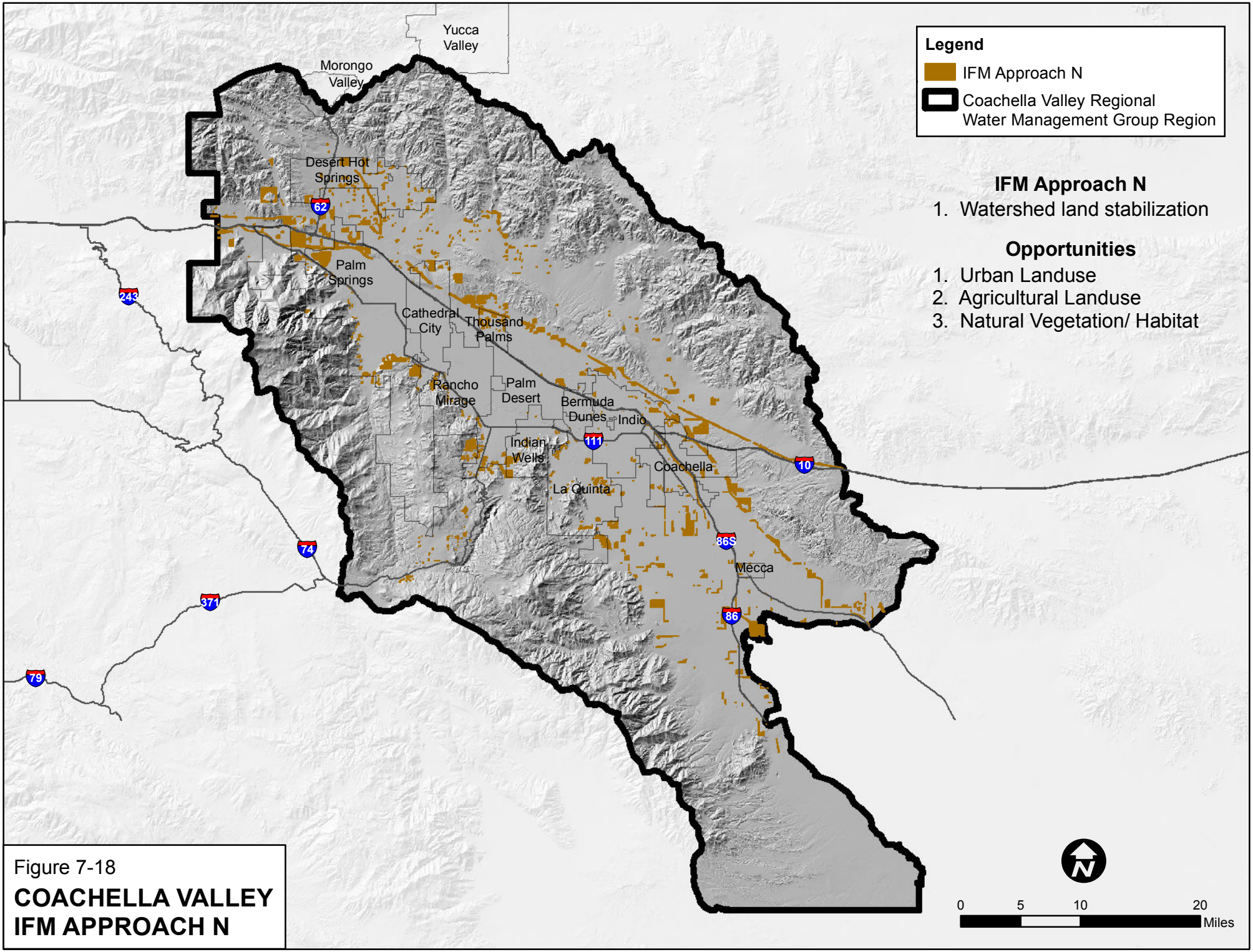


Figure 7-18

**COACHELLA VALLEY IFM APPROACH N**

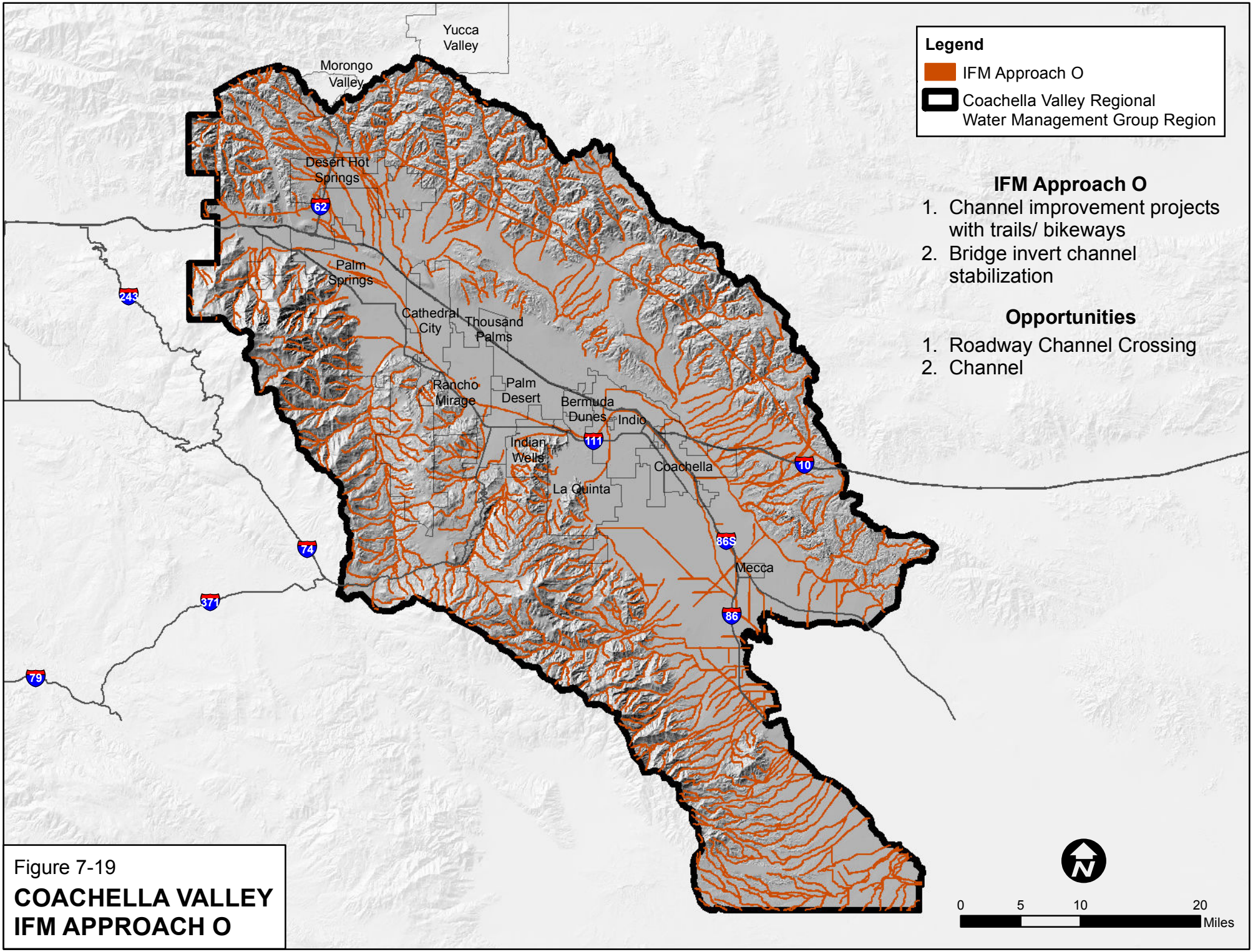


Figure 7-19

**COACHELLA VALLEY IFM APPROACH O**

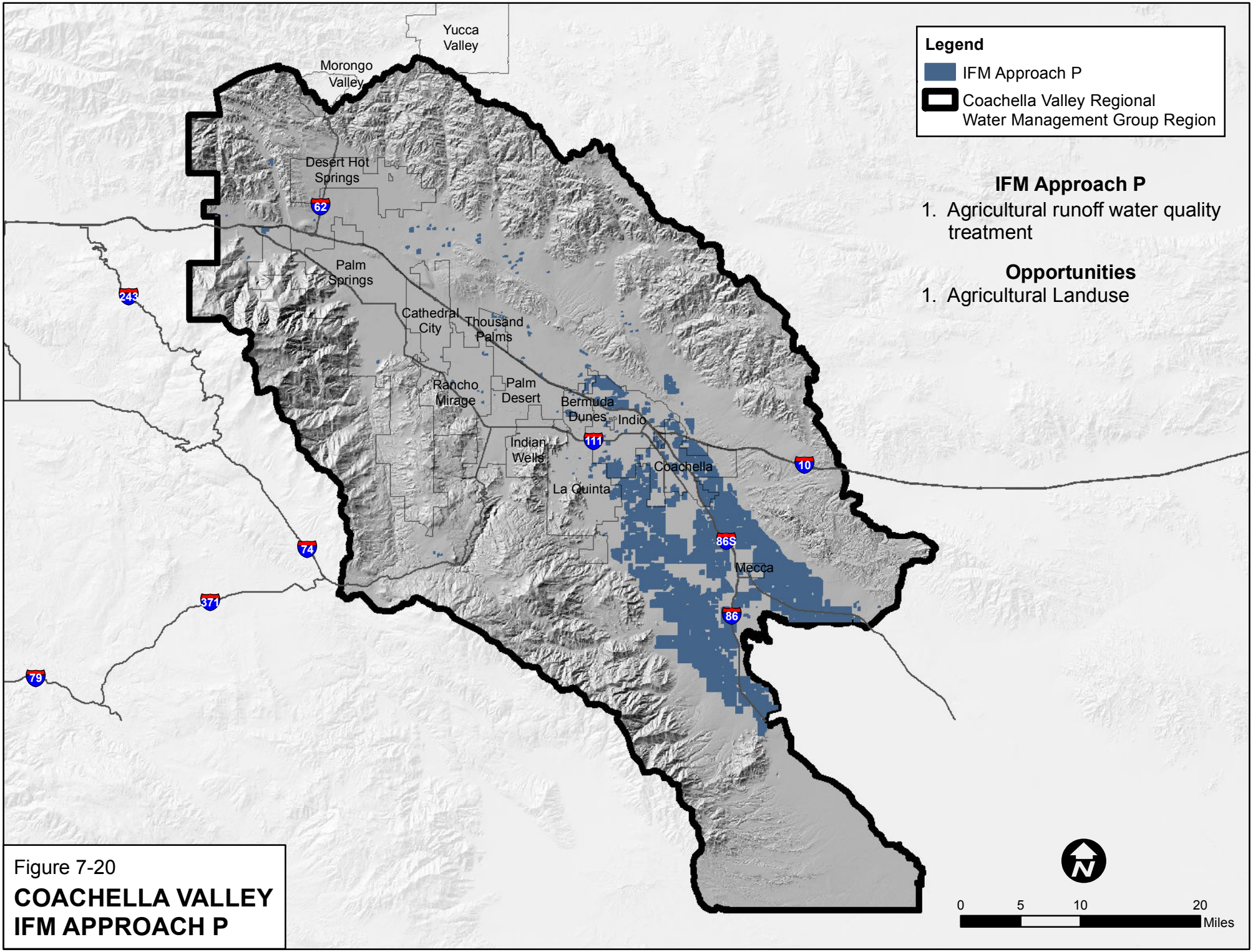


Figure 7-20

**COACHELLA VALLEY IFM APPROACH P**

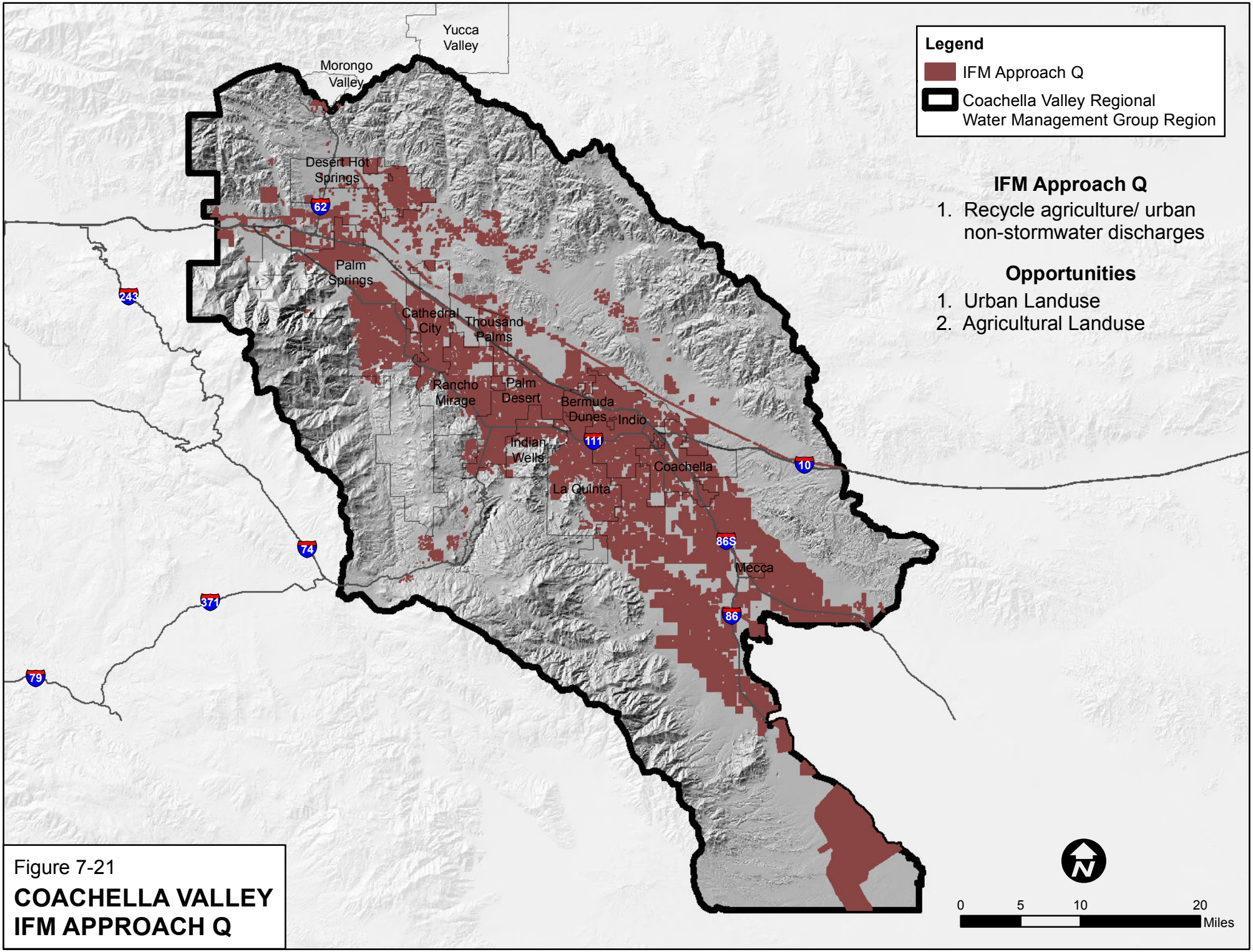


Figure 7-21

**COACHELLA VALLEY IFM APPROACH Q**

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## 7.5 IFM Project Formulation

The initial project formulation process should provide numerous alternative general concepts or approaches that cover an entire range or spectrum of available potential IFM solutions or applications of strategies. The range of alternatives generated from this process should be of sufficient extent that it would satisfy an alternative analysis as part of the environmental documentation or regulatory permitting. These different options are developed through the application of a variety of available conventional tools and flood protection techniques that can be developed into different creative and effective solutions.

Conceptual design solutions are developed through an in-depth understanding of the problems and fundamental hydraulic/hydrologic processes. A hierarchy of design components is pieced together utilizing the engineering "toolbox" to develop creative alternatives that provide the desired hydraulic/hydrologic function. Techniques are selected with respect to the hydraulic conditions and fulfilling the objectives/design criteria. The intent of this process is to ensure that novel and innovative solutions are generated rather than focusing on routine alternatives.

An integral component is application of different techniques as part of these solutions that embrace the natural river function/ecology and preservation/enhancement of these resources. An important first step in formulating alternative plans is the process of creating measure of performance of evaluating each alternative since the performance measures often assist in defining potential alternatives. The performance measure must be easily understood and directly related to the planning objective. For example for the flood protection evaluation the change in water surface elevation within the floodplain will be a clear indicator of the alternative performance related to that particular primary objective.

There are many unique challenges associated with the selection and prioritization of watershed projects in order to ensure that the correct or optimum is selected that provides the maximum benefits while addressing multiple watershed objectives, or ensuring the needs of all the watershed stakeholders are adopted. It is desirable to have a planning tool to assist in the alternative screening process which can provide guidance in understanding the relative importance of many different objectives through a numerical weighting scale which can be used in ranking alternatives in forming the decision nexus.

## 7.6 Recommended Actions

This study is intended to identify a general framework for the application of an IFM approach throughout the Coachella Valley on a regional basis that will ensure maximizing water resources benefits. General principles and strategies are also provided as guidance to assist in watershed planning. Using an IFM approach provides significant benefits including high-value multi-benefit projects, which the community can leverage through broader access to funding sources. This report is intended as a "guidance document" to facilitate an integrated water resources approach to flood management. This assessment is based on readily available information to perform planning level risk assessment in order to provide high level recommendations.

Based on the findings, the following actions are recommended to advance the use of IFM on regional basis within the Coachella Valley or development of flood management solutions. The majority of these actions were taken by the CVRWMG during development of the IFM Study, those actions that are ongoing (such as collaboration and communication) are recommended to continue as applicable and necessary:

1. **Increase collaboration/communication of agencies responsible municipal and regional floodplain management which will increase effectiveness of flood management**
    - Develop framework and process for different level of communication for floodplain managers
    - Provide basis for a regional work-group forum of floodplain managers and watershed stakeholders that allows increased collaboration and future regular meetings. Utilize existing industry forums or regional planning agencies such as CVAG to establish these initial working groups.
2. **Improve understanding and accuracy of regional and local flood risks on a watershed basis**
    - Develop understanding of the different types of flooding from both regional level and local level and include specific flood problems for the different areas as well inventory of common "hot spots" of chronic problems
    - Provide methodology to define the magnitude of flood risks to better prioritize the level of flood risk which integrates potential flood damage
    - Review common recurring flood damage losses and evaluate the sources of these flood problems.
    - Improve the accuracy of the existing flood hazard mapping and extend mapping of these hazards to areas which are currently not mapped
3. **Develop regional watershed database to assist in flood management planning that will provide a data exchange of information for all watershed stakeholders as well as sharing of information between public agencies to foster collaboration**
    - Ensure that different watershed stakeholders have access to the different available information and studies being performed
    - Develop community based watershed groups to provide monitoring of floodplains and reduce costs of performing these services while increase the active field database
    - Collect and compile watershed mapping information related to flood hazards and watershed information in a GIS format as well as developing a schema for managing the data to benefit future watershed planning
    - Develop an updated GIS database of all the different flood control and flood management infrastructure
4. **Develop watershed based planning, which includes collaboration with all the different stakeholder groups to minimize conflicts and define specific watershed goals**
    - Develop understanding of the different priority goals of the watershed stakeholders based on the common recurring flooding issues/problems/hazards

- Involve environmental groups and agencies in the planning process as well as develop an understanding of additional environmental resources

5. **Initiate understanding and awareness of "integrated flood management" (IFM) for agencies and the community**
   - Prepare educational material and information on background of IFM to encourage better understanding of the required thought process
   - Provide examples of IFM projects to assist in understanding how to apply and the basis of the key planning principles which are different from conventional watershed planning
6. **Identify applicable IFM strategies on a watershed basis that can be utilized within the Coachella Valley to assist agency's understanding on how IFM can be implemented given the nature of the types of flood hazards within the Coachella Valley**
   - Define common types of IFM strategies which integrate different planning principles through different scales (1) watershed level, (2) city level, and (3) neighborhood/local level for the -arid climate
   - Develop regional mapping of both opportunities and constraints related to integrated flood management
   - Develop a specialized GIS based tool which assists in the defining locations of IFM projects at a regional scale and can provide maximum multiple benefits and provides method for prioritizing flood management projects
7. **Develop watershed planning guidance program implementing IFM through different land planning regulations and collaboration with agencies during the development planning process**
   - Develop watershed planning process framework with key planning principles for implementing IFM that focuses on linking sustainability, water resource management, and land use planning to flood management and the entire hydrologic cycle
   - Prepare guidance on integrating "land use planning" as central element of IFM and define how it can be utilized for different type of floodplain hazards issues
   - Develop overall guidance document that provides stakeholders the basis for watershed planning with IFM

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# Appendix – GIS Mapping Database

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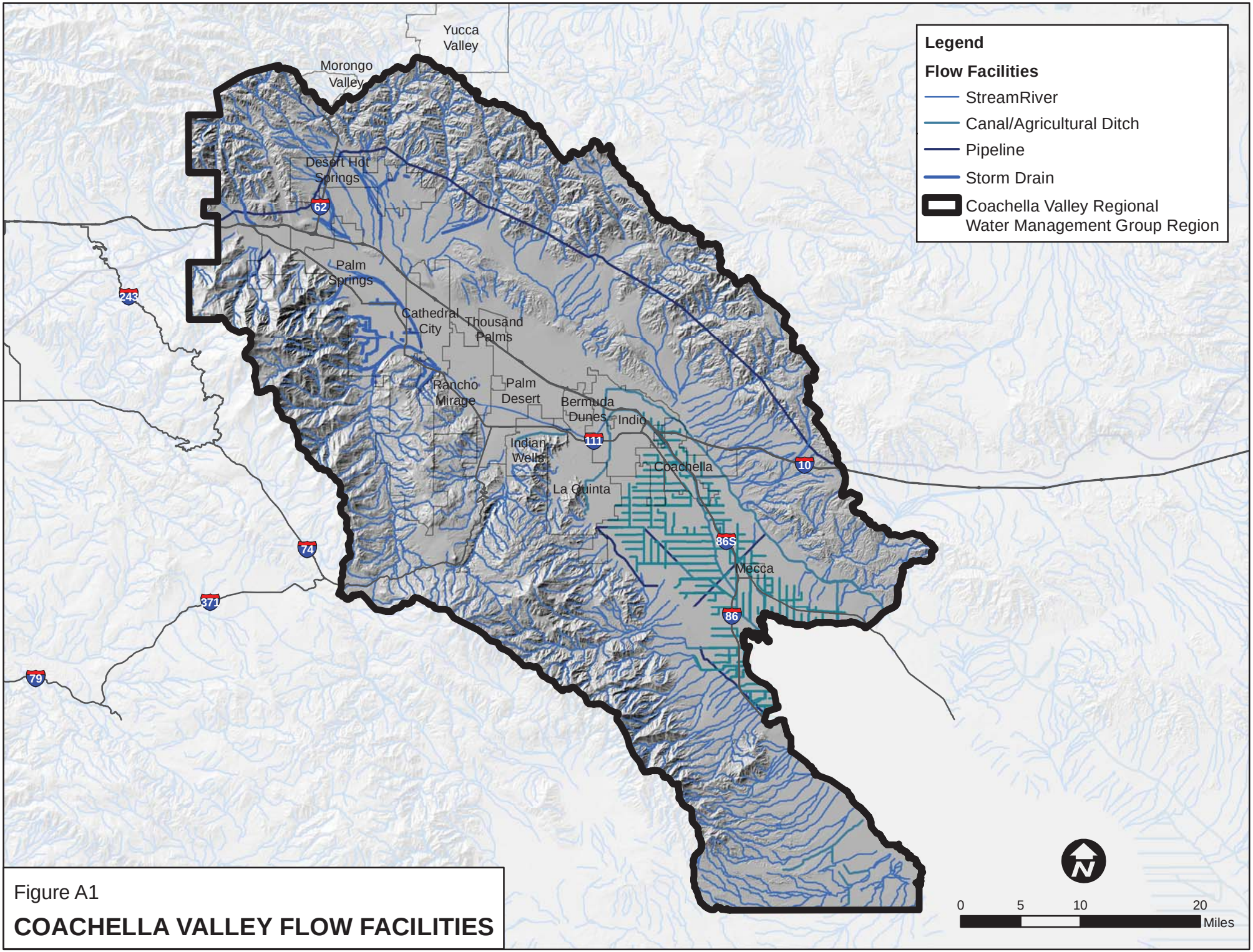


Figure A1

**COACHELLA VALLEY FLOW FACILITIES**

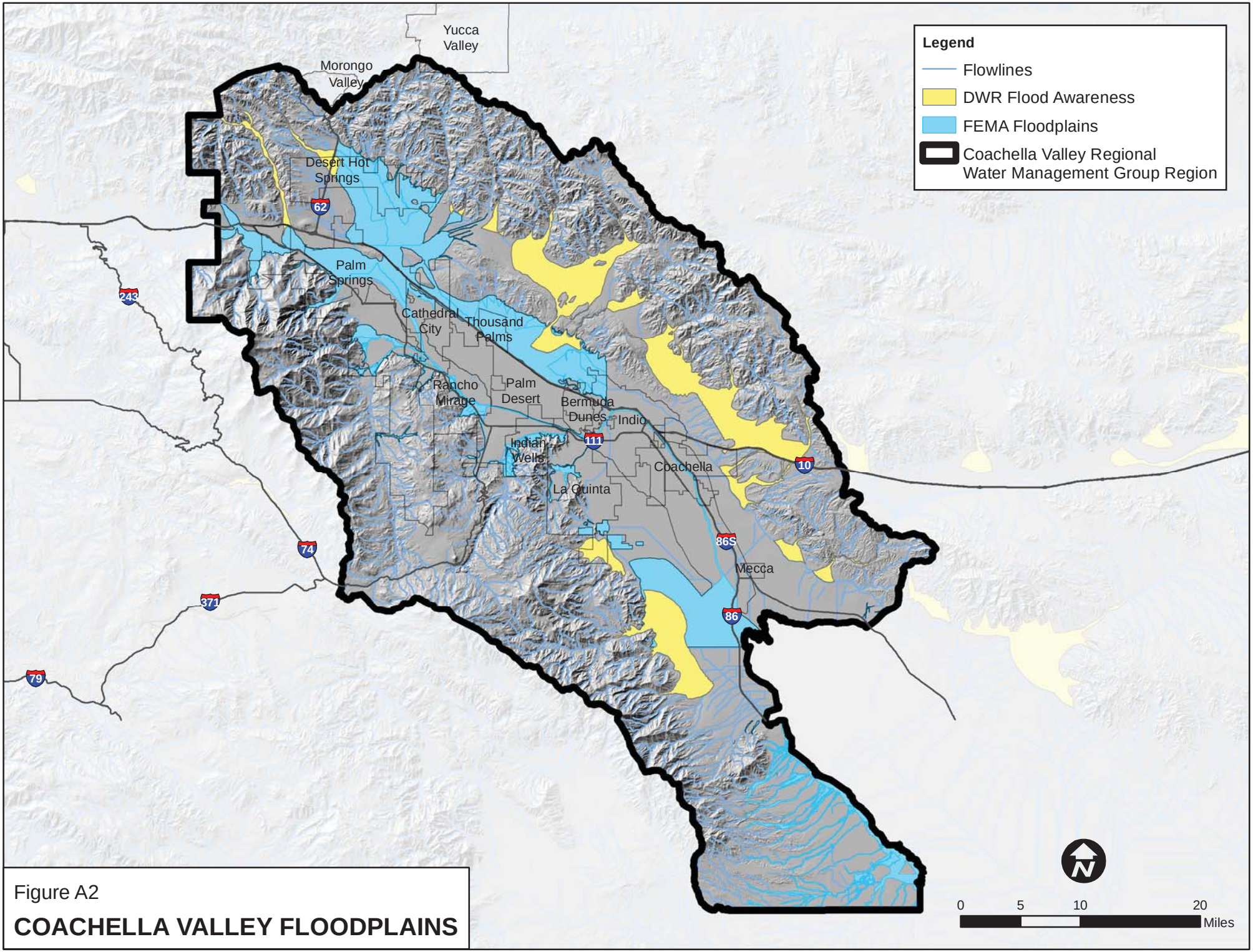


Figure A2

**COACHELLA VALLEY FLOODPLAINS**

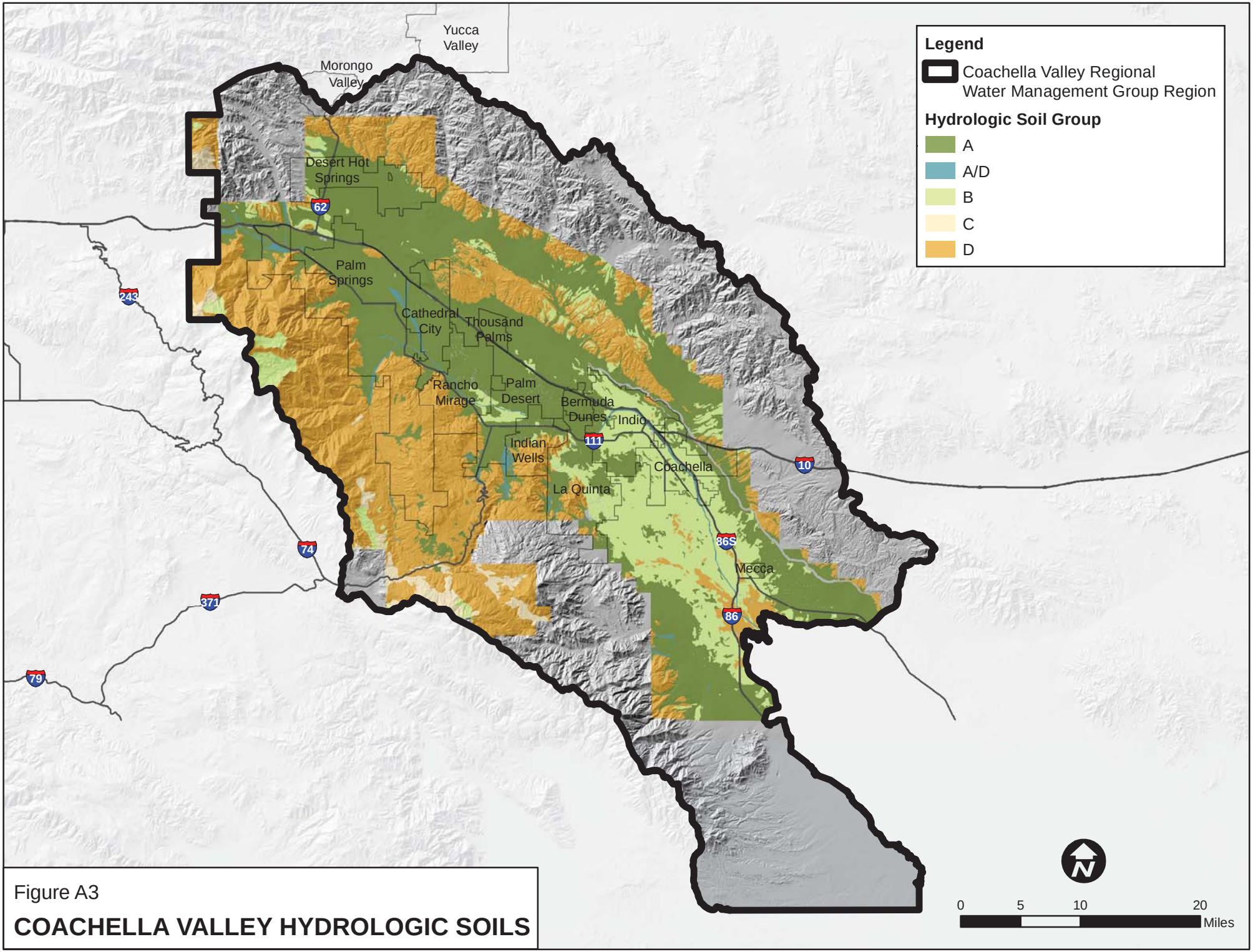


Figure A3

**COACHELLA VALLEY HYDROLOGIC SOILS**

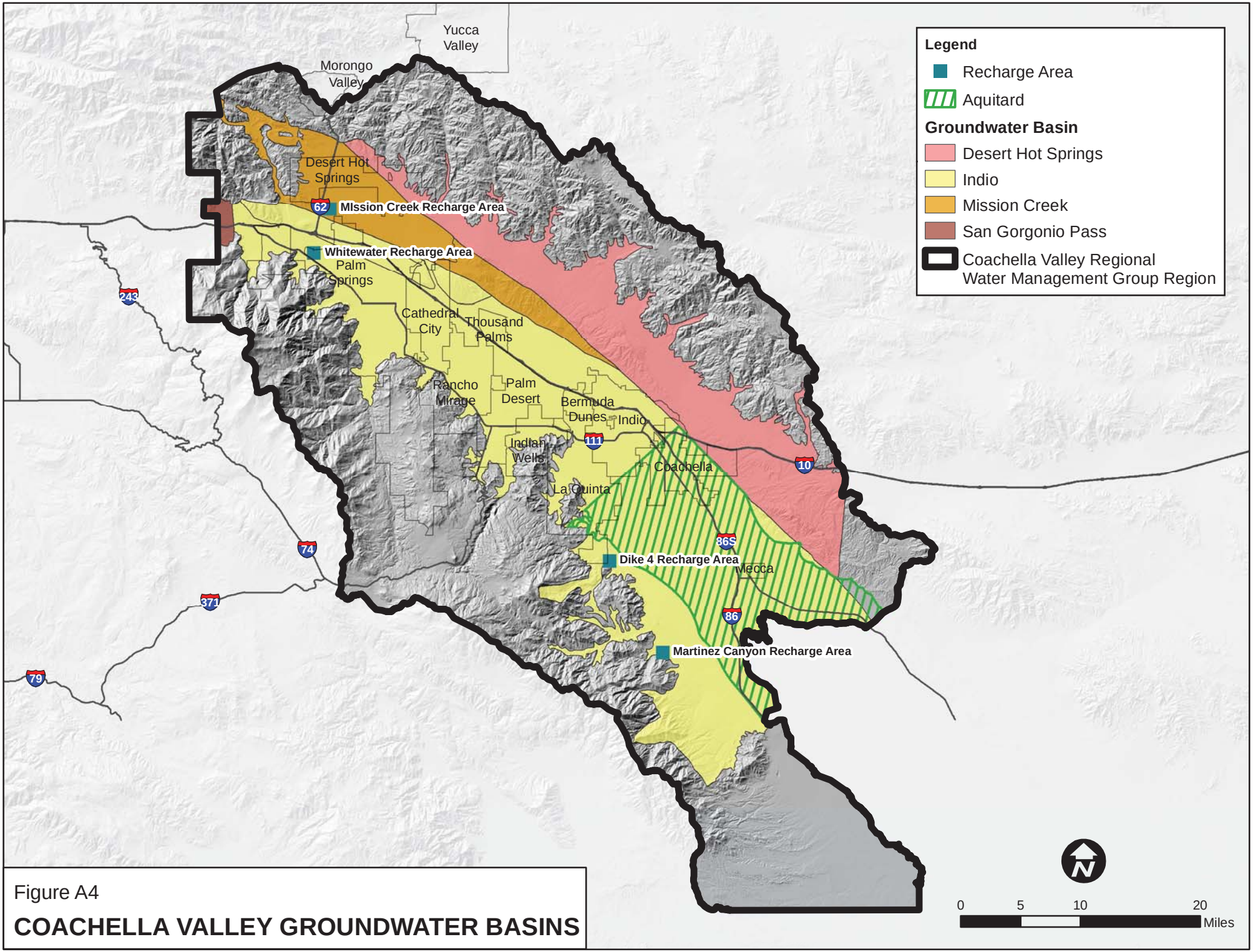


Figure A4

**COACHELLA VALLEY GROUNDWATER BASINS**

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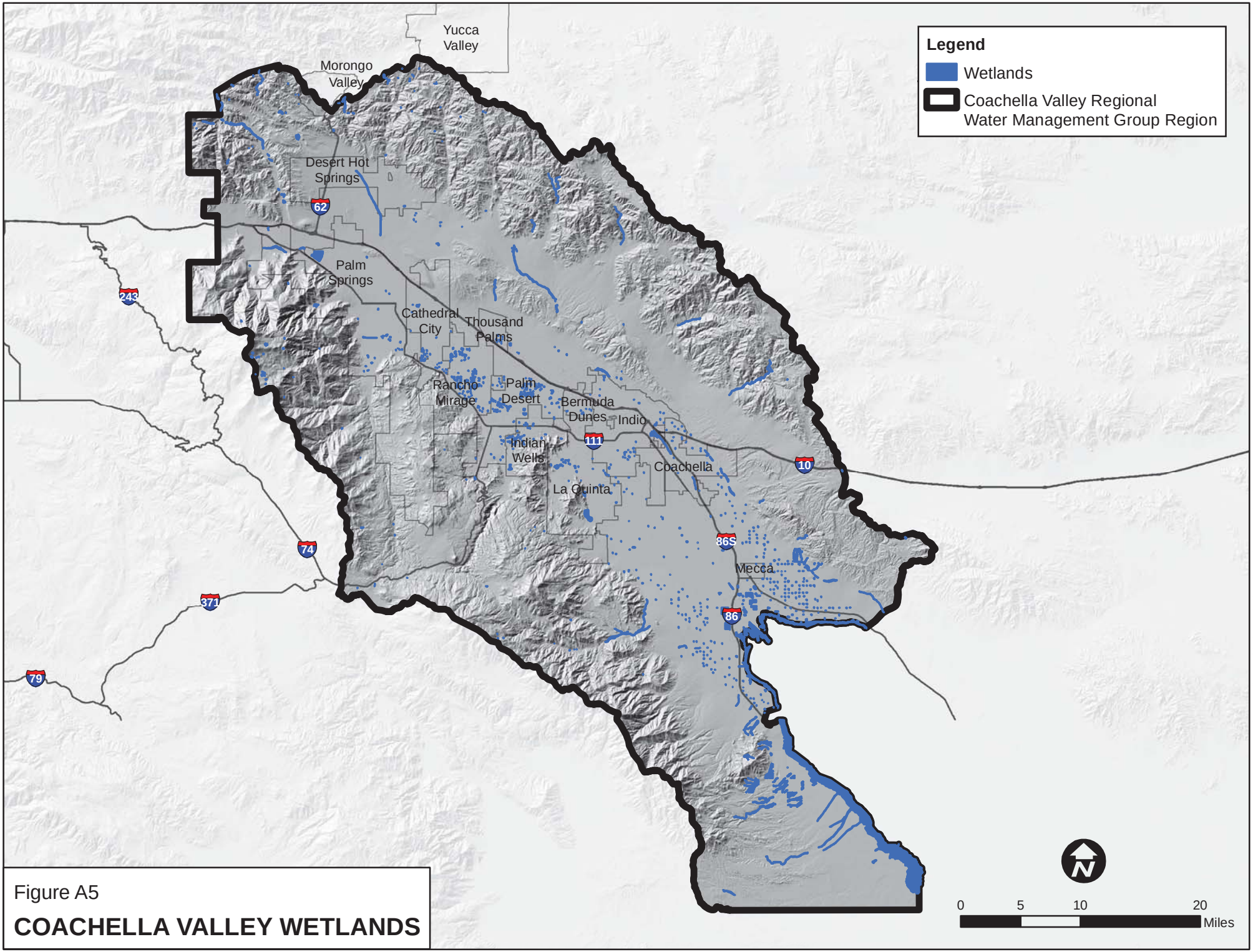


Figure A5

**COACHELLA VALLEY WETLANDS**

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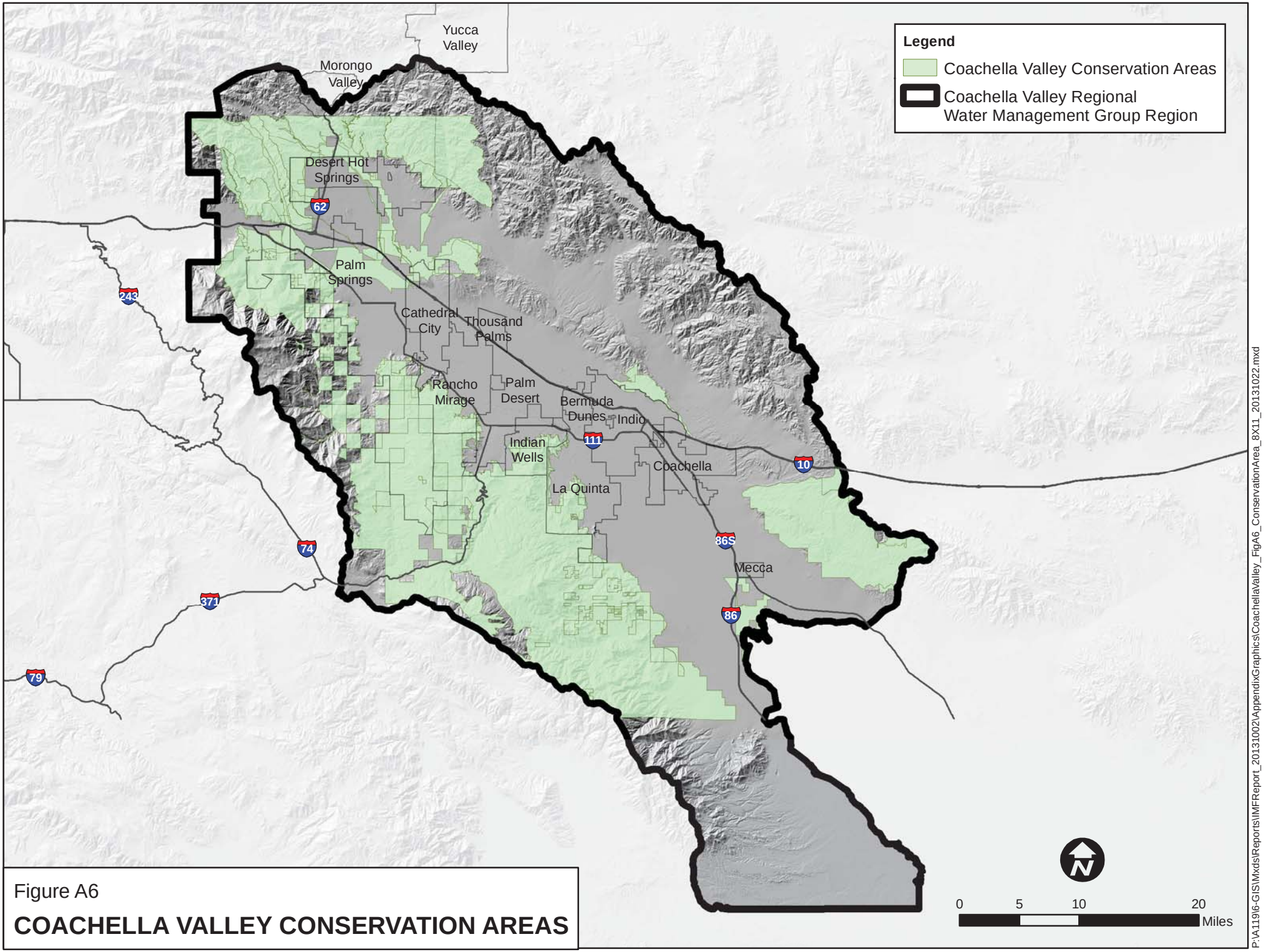


Figure A6

**COACHELLA VALLEY CONSERVATION AREAS**

# Appendix VI-J: Evaluation of Valley-Wide Groundwater Monitoring Programs

This appendix includes the *Evaluation of Valley-Wide Groundwater Monitoring Programs* produced as part of the 2014 IRWM Plan Update process.

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## Coachella Valley Integrated Regional Water Management Plan Update

# Evaluation of Valley-Wide Groundwater Monitoring Programs

# Final Report

**Prepared by:**

RMC Water and Environment

**January 28, 2013**

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# Introduction

The Coachella Valley Regional Water Management Group (CVRWMG) – comprised of Coachella Valley Water District (CVWD), Mission Springs Water District (MSWD), Desert Water Agency (DWA), Coachella Water Authority (CWA), and Indio Water Authority (IWA) – are preparing an update of the Coachella Valley Integrated Regional Water Management (IRWM) Plan. The purpose of the Coachella Valley IRWM Plan is to accurately characterize the existing water resources conditions, issues, and needs of the Valley, and then to establish a project selection process for funding water management projects that help to meet those needs. During the scoping process for the IRWM Plan update, stakeholders identified the need to better understand and document groundwater monitoring practices in order to confirm whether current monitoring is providing the necessary data to answer ongoing groundwater overdraft and quality concerns. Based on this assessment, the study shall identify recommended modifications/additions to current monitoring that address those data needs.

## 1.1 Project Purpose

This technical memorandum (TM) describes recommended modifications/additions to existing groundwater monitoring programs currently being implemented in the Coachella Valley Groundwater Basin (CVGB). This TM builds off recommended monitoring program modifications and additions included as part of the *Disadvantaged Community (DAC) Water Quality Evaluation* work products (which can be found in Appendix S of the public draft 2014 Coachella Valley IRWM Plan at www.cvrwmg.org). Documents used in developing this TM include the following:

- Coachella Valley Water District (CVWD) *Groundwater Elevation Monitoring Plan for California Statewide Groundwater Elevation Monitoring (CASGEM) Program* (2011)
- CVWD *Coachella Valley Water Management Plan* (2010)
- CVWD *Coachella Valley Water Management Plan, 2010 Update*, *Administrative Draft Subsequent Program Environmental Impact Report*, SCH No. 2007091099 (2011)
- CVWD, Desert Water Agency (DWA), and Mission Springs Water District (MSWD) *Mission Creek and Garnet Hill Sub-basins Water Management Plan, Final Report* (2013)
- United Sates Geological Survey (USGS) and California State Water Resources Control Board (SWRCB) *Ground-Water Quality Data in the Coachella Valley Study Unit, 2007: Results from the California GAMA Program*. Data Series 373. (Prepared by Dara A. Goldrath, Michael T. Wright, and Kenneth Belitz, 2009)
- USGS and SWRCB *Status of Groundwater Quality in the California Desert Region, 2006 – 2008: California GAMA Priority Basin Project*. Scientific Investigation Report 2012-5040 (2012)

The purpose of this TM is to describe existing groundwater monitoring efforts in the Coachella Valley and to present recommended modifications and/or additions to existing monitoring programs for the CVGB as it relates to water quality constituents identified as impacting the basin. Specifically, this TM includes identification of groundwater sampling locations, sampling frequency, and constituents to be monitored. The entities responsible for monitoring and reporting are also described.

# 2 Existing Groundwater Monitoring Programs

To date, groundwater monitoring in the CVGB has been conducted by local water agencies, State and Federal agencies and through special interest studies. Some of these programs entail regular, on-going monitoring programs, while others provide one-time snapshots of groundwater conditions. These programs have provided both groundwater elevation and water quality data in all sub-basins of the CVGB, although more data are available in areas with more regular groundwater use (i.e. pumping).

## 2.1 Constituents of Concerns for Groundwater Quality Monitoring

As noted above, two water management plans and several other special studies have been prepared for the Coachella Valley; these documents include information regarding overdraft conditions and water quality issues in the CVGB. Using the information presented in these studies, along with data available in publically-accessible databases, key constituents of concern (COCs) were identified for the groundwater basin. Specifically, these COCs represent parameters whose concentrations in groundwater exceed either primary or secondary drinking water standards, as set forth by federal and state governments.

Water quality constituents of principal concern in Coachella Valley, as identified in the Coachella Valley Water Management Plan (WMP) are salinity, nitrate, fluoride, arsenic and perchlorate (CVWD, 2011a). COCs identified in the Mission Creek and Garnet Hill Sub-basins WMP include total dissolved solids (TDS), nitrate and uranium (MWH, 2013). Finally, most recently, elevated concentrations of naturally occurring chromium in groundwater in the CVGB have been considered cause for concern due to the development of a drinking water standard for hexavalent chromium ($Cr^{+6}$). Constituents of concern addressed by the monitoring program analysis described herein (arsenic, nitrate, uranium, fluoride, perchlorate and hexavalent chromium) were initially identified in the DAC Water Quality Evaluation project, conducted as part of the Coachella Valley IRWM Plan Update. This water quality evaluation focused on DAC communities using groundwater as their primary drinking water source and documents those constituents known to exceed primary drinking water standards in groundwater in those DAC areas. This list of COCs was then updated based on constituents identified in the aforementioned studies.

In recent years, the USGS (in cooperation with SWRCB) has investigated the groundwater quality in CVGB as a part of the Priority Basin Project of the Groundwater Ambient Monitoring and Assessment (GAMA) Program. The GAMA Priority Basin project was developed in response to the Groundwater Quality Act of 2001. Most constituents in groundwater samples for these USGS studies were at concentrations below drinking water thresholds. However, major constituents detected at concentrations above either primary or secondary drinking water standards or advisory levels in the studies included perchlorate, arsenic, boron, molybdenum, strontium, nitrite plus nitrate (as nitrogen), radon-222, chloride, fluoride, sulfate, manganese, and TDS (USGS, 2009).

Based on an analysis of available groundwater quality data, arsenic, nitrate, uranium, fluoride, perchlorate, and hexavalent chromium are considered to be key COCs (RMC, 2013). These COCs were identified based on the Coachella Valley WMP, Mission Creek-Garnet Hill WMP, and the DAC Water Quality Evaluation. A discussion of these constituents, including their drinking water standards (or maximum contaminant levels, MCLs), and their concentrations within the valley, are provided below.

### 2.1.1 Arsenic

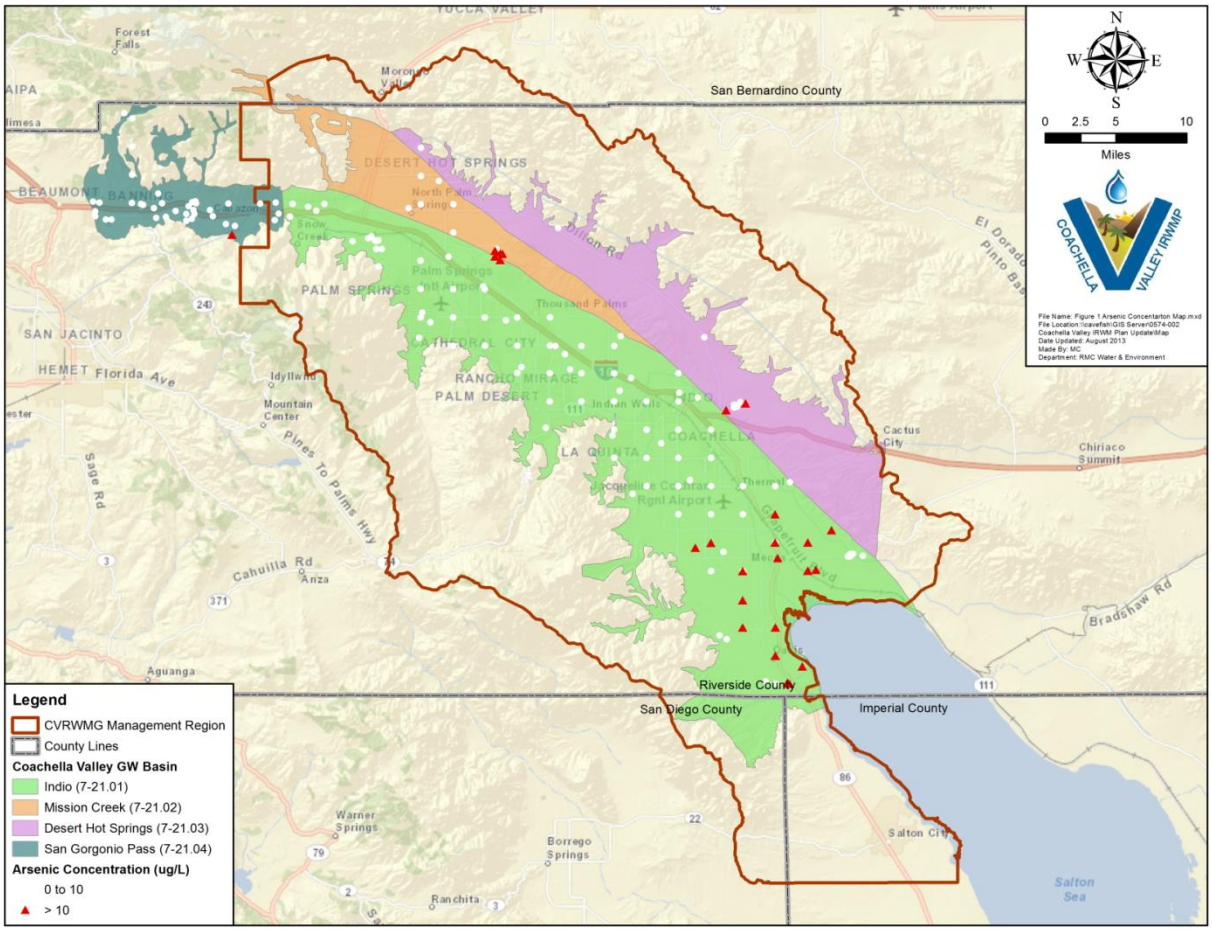
Arsenic occurs naturally in rock, soil and biota. California adopted the federal MCL for arsenic (10 µg/L) in 2006. In 2004, CVWD commenced studies to evaluate and design facilities to meet the new arsenic standard at several of its wells that exceeded the new requirements (CVWD, 2011a).

Figure 1 shows arsenic concentrations in Coachella Valley since 2000 as reported by GeoTracker-GAMA, a publically available database that includes data from public supply wells. Arsenic concentrations exceeding the primary MCL have been observed in some East Valley[1] municipal water supply wells; these wells have either been taken out of service or have been equipped with wellhead

[1]For purposes of the 2010 WMP Update, the Coachella Valley has been divided geographically into the West Valley and the East Valley. The West Valley, which includes the cities of Palm Springs, Cathedral City, Rancho Mirage, Indian Wells and Palm Desert, has a predominately resort/recreation-based economy that relies on groundwater as its principal water source. The East Valley, which includes the cities of Coachella, Indio and La Quinta and the communities of Mecca and Thermal, has an agricultural-based economy utilizing groundwater and Colorado River water imported via the Coachella Canal. The East Valley is southeast of a line extending from Washington Street and Point Happy northeast to the Indio Hills near Jefferson Street, and the West Valley is northwest of this line (CVWD, 2011a).

treatment systems. About 10 percent of wells with reported monitoring results exceeded the arsenic MCL, most of which are in the southern portion of the East Valley. Similar results were reported by the CVWD (2011a) and USGS (2007, 2009). Arsenic concentrations above the primary MCL were also detected east of Palm Springs around the border of Indio and Mission Creek Sub-basins. MWH (2013) reported that arsenic was detected in several groundwater wells in the Mission Creek Sub-basin. However, the measurements were below the primary MCL for arsenic in all cases except for one well for one measurement. There is limited information available on groundwater quality in the Garnet Hill Sub-basin. The available data are not sufficient to make any meaningful conclusions about temporal or spatial distribution of arsenic in this sub-basin.

**Figure 1: Arsenic Concentrations in Coachella Valley Groundwater Basin**




## 2.1.2 Nitrate

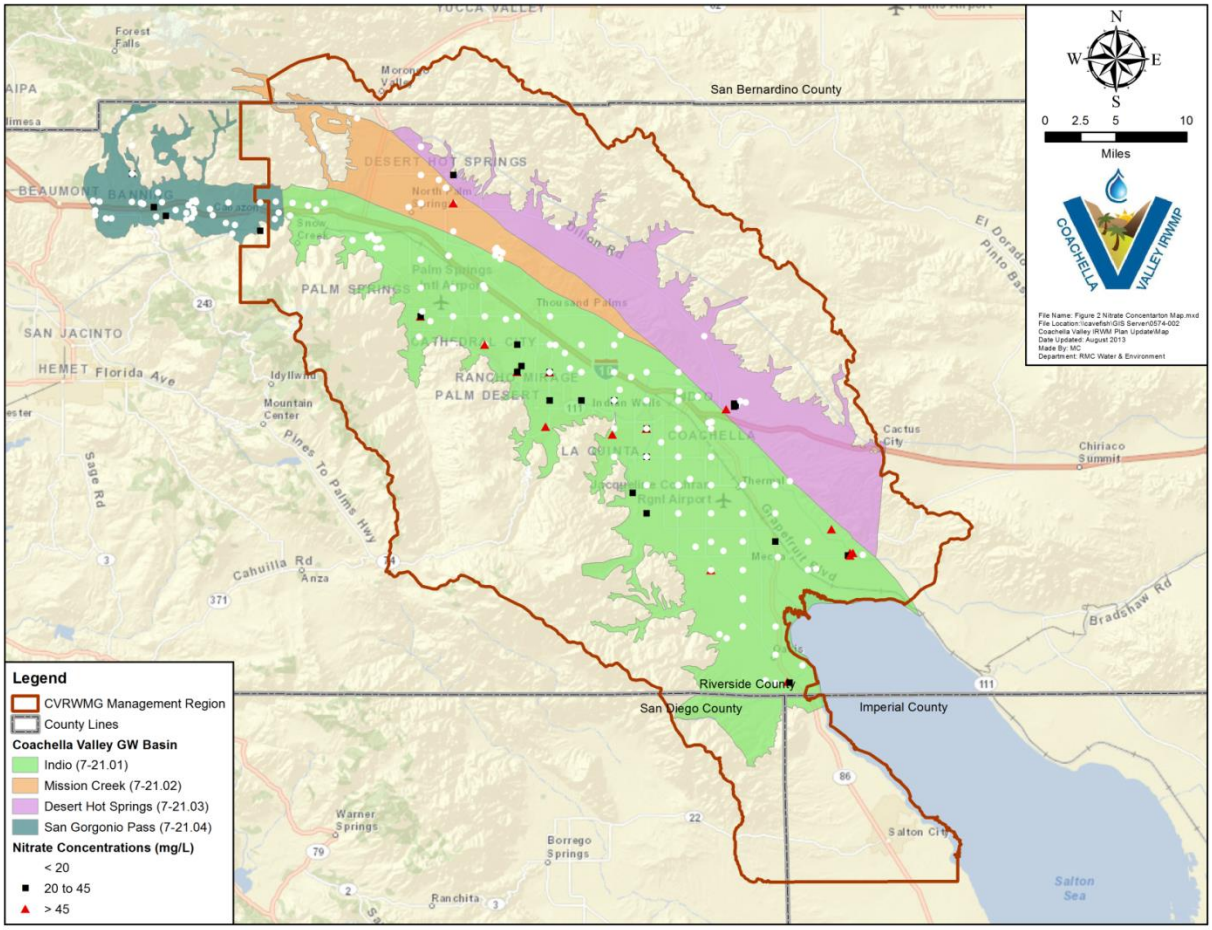
Potential sources of elevated nitrate in Coachella Valley groundwater include natural sedimentary deposits and leaching of decomposed plant materials high in nitrogen content (Huberty et al., 1948), fertilizers, and effluent from septic tanks. The state and federal primary MCL for nitrate is 45 mg/L as $NO_3$ (or 10 mg/L as N). Generally, nitrates exist in the unsaturated and shallow aquifer zones above 300 to 400 feet below the ground surface (bgs), and have not been observed in the deeper aquifer zones below depths of 500 feet (MWH, 2013; CVWD, 2010).

Figure 2 presents a map showing the distribution of nitrates for the period 2000 through 2012 using data from the GeoTracker-GAMA water quality database. Groundwater is currently sampled for nitrate annually following CDPH requirements. In areas with elevated nitrate concentrations, CDPH requires

more frequent monitoring – quarterly for sources with nitrate levels above 50% of the MCL and monthly for sources above 75% of the MCL. This is a satisfactory approach for nitrate monitoring in the basin.

Clusters of wells around the North Palm Springs, Indio and Coachella areas show nitrate concentrations as high as 90 mg/L. Nitrate concentrations above the primary MCL have also been detected in the southern portion of the East Valley and along the southwest border of the Indio Sub-basin. Nitrate concentrations are below the MCL for all recorded public water supply samples in the Mission Creek Sub-basin; however, several private wells have recorded nitrate concentrations exceeding the primary MCL (MWH, 2013). There is limited information available on groundwater quality in the Garnet Hill Sub-basin. Nitrate concentrations have varied between 1 mg/L and 7 mg/L in that sub-basin (MWH, 2013).

**Figure 2: Nitrate Concentrations in Coachella Valley Groundwater Basin**



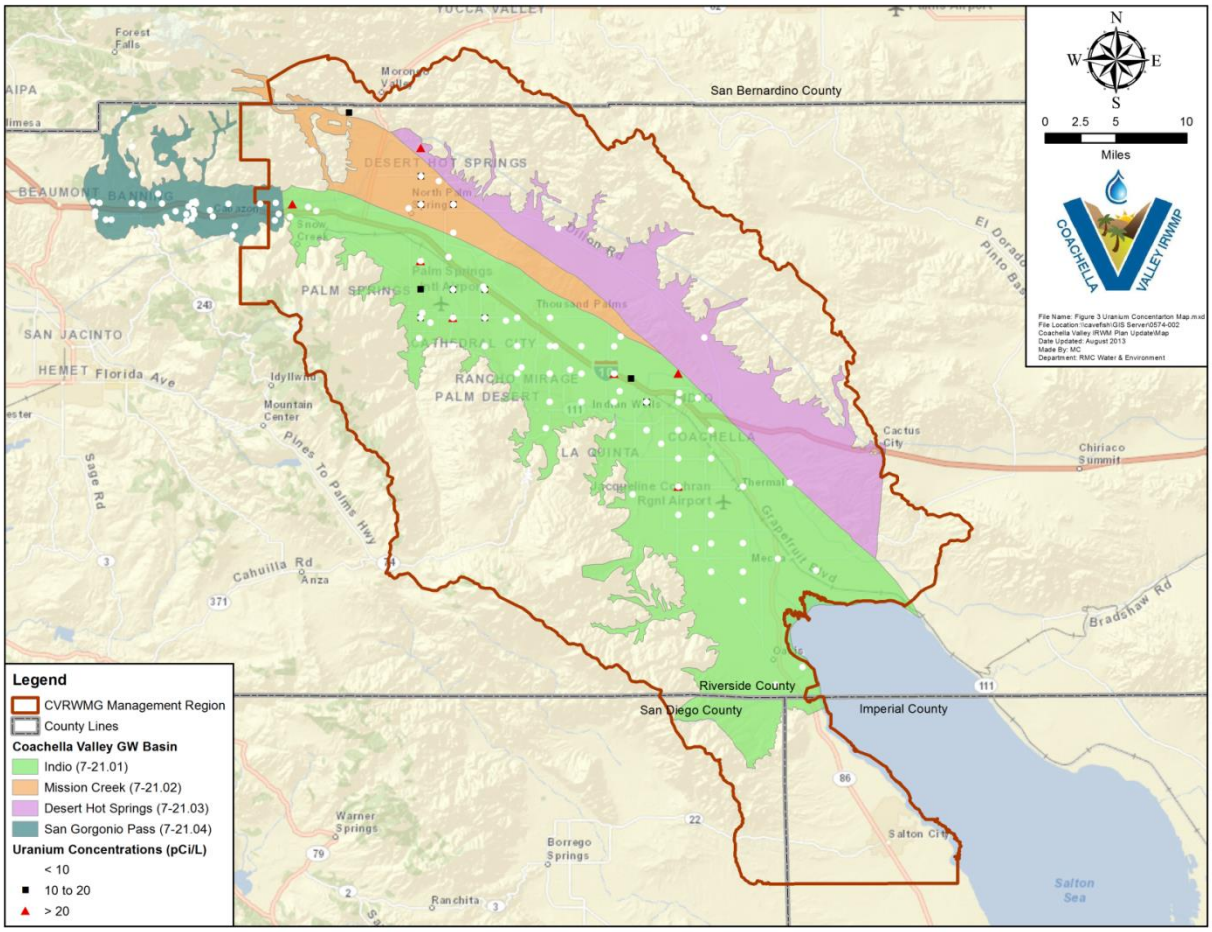

## 2.1.3 Uranium

The primary source of uranium in the Coachella Valley is naturally occurring uranium in the geologic formations of the basin. This uranium leaches into the groundwater basin under natural conditions. The primary MCL for uranium is 20 picocuries/liter (pCi/L) based on a four-quarter average.

Figure 3 shows uranium concentrations in the basin since 2000 as reported by GeoTracker-GAMA. Uranium has been detected above the MCL in several groundwater wells in the Indio Sub-basin based on data collected in 2012 and in one well in Desert Hot Springs based on samples collected in 2010. Samples collected in 2003 and 2004 show uranium concentrations above MCL north of Palm Springs, north of

Indian Wells, and east of Thermal. MWH (2013) reported that uranium was detected in several groundwater wells in the Mission Creek Sub-basin. Concentrations ranged from 4.4 pCi/L to 23 pCi/L, but none of the wells exceed the four-quarter average MCL of 20 pCi/L. There is limited information available on groundwater quality in the Garnet Hill Sub-basin.

**Figure 3: Uranium Concentrations in Coachella Valley Groundwater Basin**

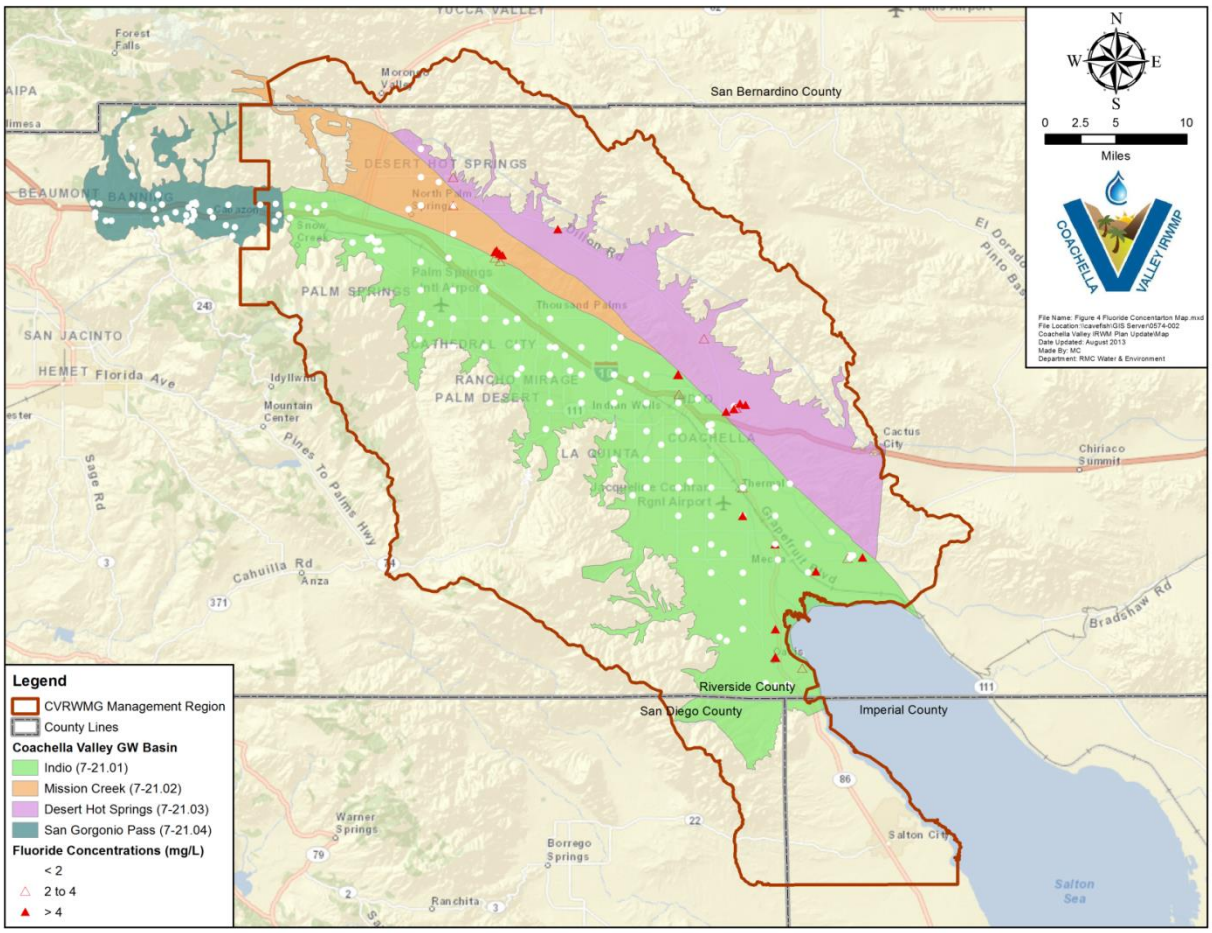



## 2.1.4 Fluoride

Low levels of fluoride naturally occur in most sources of drinking water, and are the result of leaching from rock formations. The state and federal primary MCLs for fluoride are 2 mg/L and 4 mg/L, respectively. State law requires water agencies to install fluoride treatment at water supply sources contingent upon the availability of funds. Currently, there is no fluoride treatment at drinking water wells in the Mission Creek or Garnet Hill Sub-basins (MWH, 2013).

Fluoride concentrations in Coachella Valley groundwater for the period from 2000 to 2012 based on data from the GeoTracker-GAMA water quality database are shown in Figure 4. High fluoride levels are found in the East Valley near the Salton Sea and near the San Andreas Fault. High levels of fluoride can also be found in several wells in Desert Hot Springs Sub-basin. There has been no apparent change in the distribution or concentration of fluoride in the past 10 years (CVWD 2011a).

**Figure 4: Fluoride Concentrations in Coachella Valley Groundwater Basin**



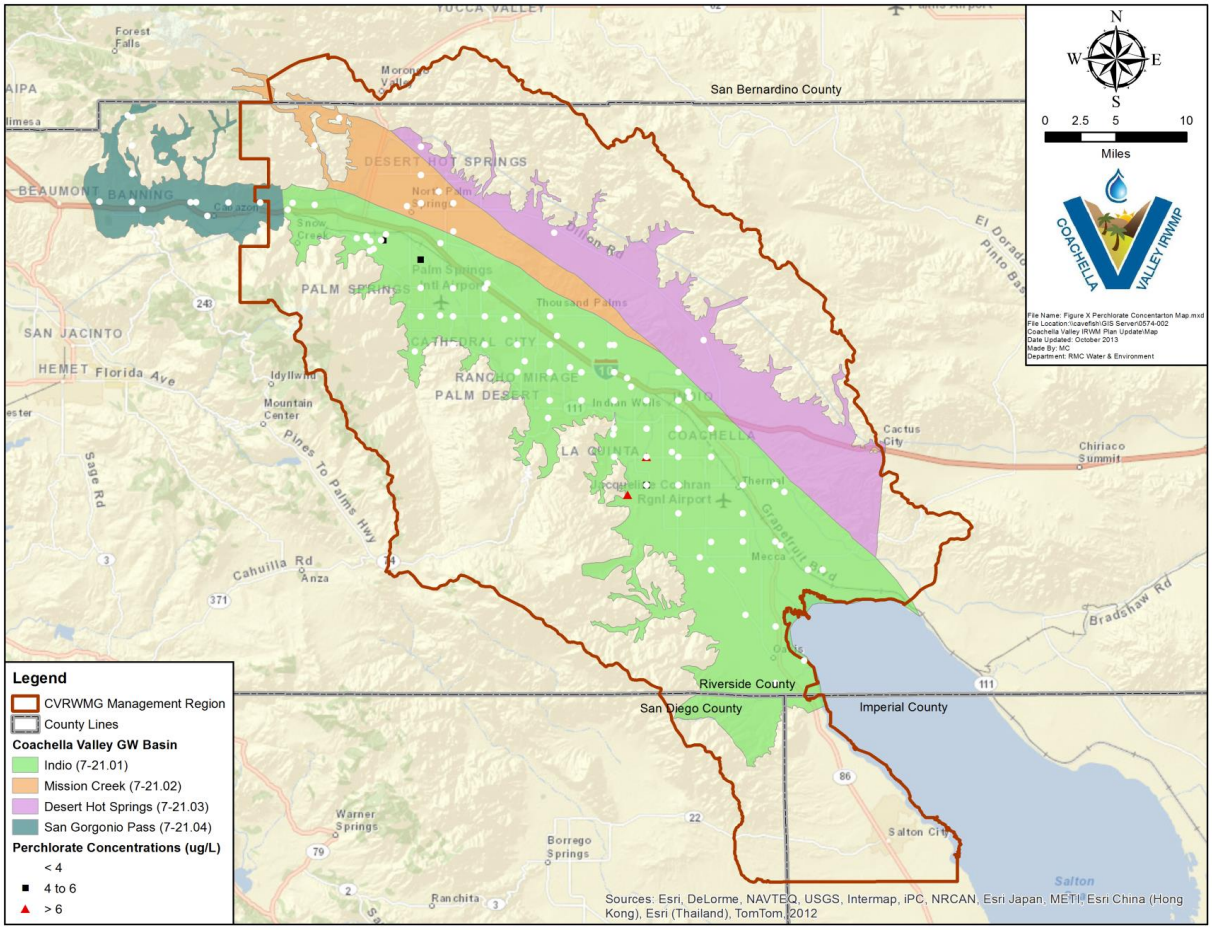

## 2.1.5 Perchlorate

Perchlorate is used for the ignition of solid rocket fuel and is a common solvent for dry-cleaning or other industrial operations. Perchlorate salts are also found in roadside flares, airbag inflators, and are used in the manufacturing of matches. Perchlorate has also been found in sodium nitrate fertilizers. Perchlorate is highly mobile in aqueous systems and can persist under typical groundwater and surface water conditions for decades. Perchlorate is highly soluble in water. The state primary MCL for perchlorate is 6 µg/L.

Perchlorate was detected in Colorado River water imported to the Coachella Valley at the Kerr-McGee plant in Nevada on Las Vegas Wash, upstream of Lake Mead, beginning in 1997. Since that time, extensive source control at Las Vegas Wash has reduced perchlorate concentrations in Colorado River water to less than the 4 µg/L reporting detection limit and the 6 µg/L California MCL (CVWD, 2010 and CVWD, 2011a).

Figure 5 shows perchlorate concentrations in Coachella Valley since 2000 as reported by GeoTracker-GAMA. Perchlorate levels in Coachella Valley groundwater since 2000 range from less than detectable to 12 µg/L, with 5 out of 257 wells having samples with concentrations above the 6 µg/L MCL. Most of the wells where perchlorate has been detected are shallow private wells in East Valley and northwest of Palm Springs. DWA has detected low levels of perchlorate (below the MCL) in some wells since 2001 (CVWD, 2011a). Perchlorate has not been detected in groundwater samples within the Mission Creek and Garnet Hill Sub-basins (MWH, 2013).

**Figure 5: Perchlorate Concentrations in Coachella Valley Groundwater Basin**



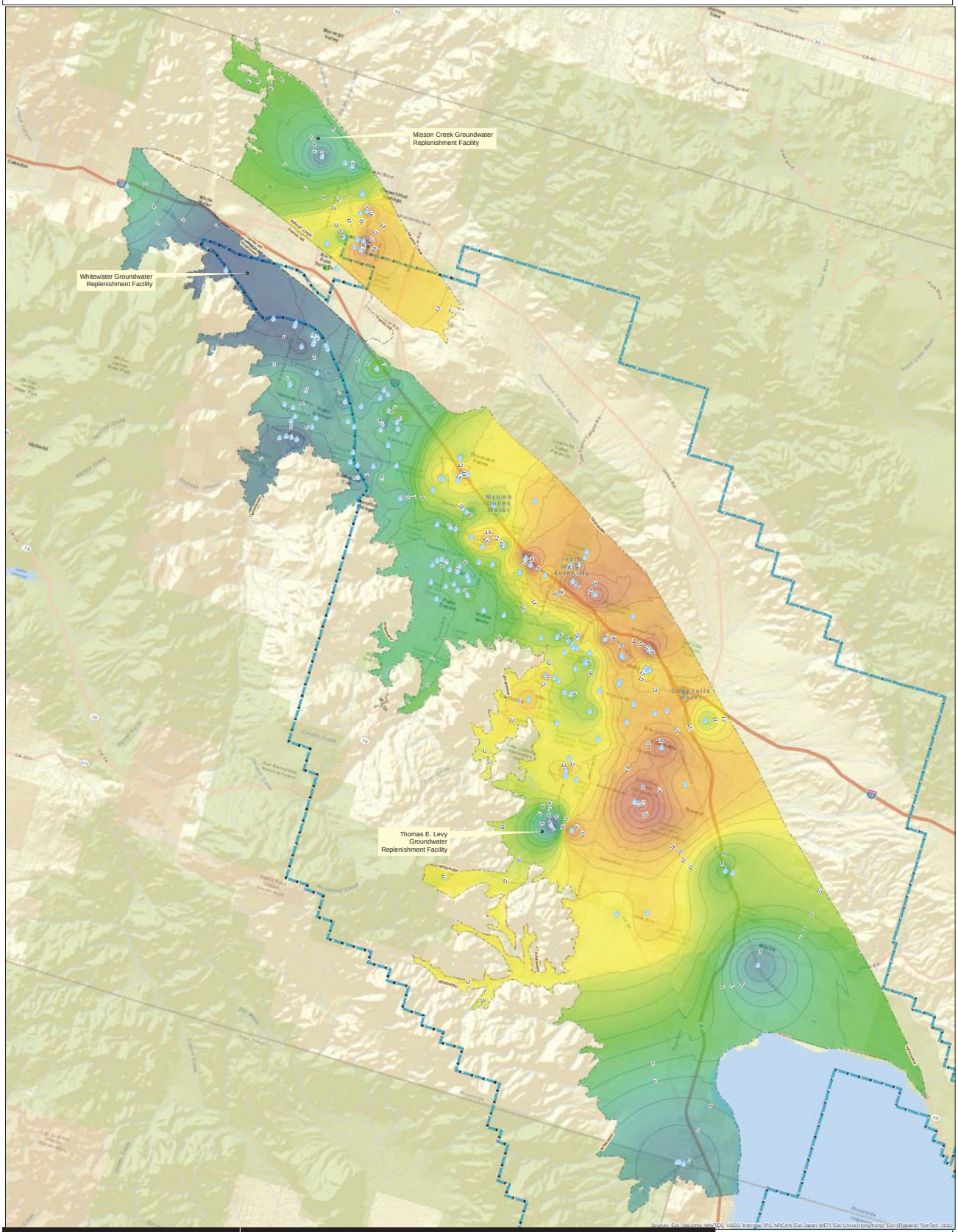

## 2.1.6 Hexavalent Chromium (Chromium 6)

Hexavalent chromium is a metallic chemical that can originate as a contaminant in the groundwater from the discharges of dye and paint pigments, wood preservatives, chrome-plating liquid wastes, and leaching from hazardous waste sites. Hexavalent chromium may also occur naturally in groundwater. Naturally occurring hexavalent chromium in groundwater is caused by the erosion of sediments containing elevated levels of chromium including serpentine-containing rocks commonly found near the margins of fault systems (CVWD 2013). Hexavalent chromium is currently regulated by the State as part of total chromium MCL of 50 µg/L; however, CDPH is currently proposing a primary MCL of 10 µg/L for hexavalent chromium which may be implemented in April 2014.

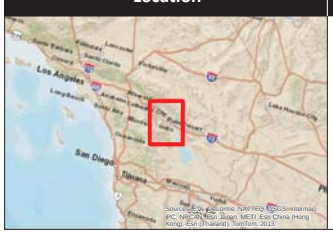
Currently, there are no wells in the Coachella Valley with hexavalent chromium groundwater concentrations that exceed the 50 µg/L. However, there are various wells in the Coachella Valley with concentrations that exceed the proposed primary MCL of 10 µg/L. For 39 unique well names within the available dataset, hexavalent chromium has been reported at concentrations higher than the proposed primary MCL.

Figure 6 shows CVWD-generated contours of chromium-6 levels within the Whitewater and Mission Creek groundwater basins. Contours that are represented in yellow, orange, or red show areas that are thought to exceed the proposed primary MCL of 10 µg/L (ppb).

# Figure 6: Coachella Valley Groundwater Chromium-6 Occurrence




**Location**



**Legend**

**Chromium-6 Levels**

High : 24 ppb

10 ppb

Low :0 ppb

CVWD Boundary

Subbasin Boundary

Domestic Water Well

Contours


**Coachella Valley Water District**

75515 Hovley Lane East
Palm Desert, CA 92211
www.cvwd.org
Ph. (760) 398-2661
Fx. (760) 568-1789


Miles

0 0.75 1.5 3 4.5 6 7.5

## 2.2 Existing Monitoring Programs

Groundwater levels and quality in the Coachella Valley have been monitored by various entities for many years. These include ongoing programs implemented or required by:

- California Department of Water Resources (DWR)
- CDPH
- CVWD
- MSWD
- Other Agencies (CWA, DWA, IWA)

Additionally, there is currently ongoing groundwater elevation monitoring occurring in the groundwater basin to meet the requirements of the California Statewide Groundwater Elevation Monitoring (CASGEM) Program; and monitoring of water supply wells on tribal lands completed by tribes and reported to the Environmental Protection Agency (EPA). Several programs are described in the following sections.

### 2.2.1 DWR-Related Monitoring

Groundwater elevations in the Indio Sub-basin (also called Whitewater River Sub-basin), Mission Creek Sub-basin, and Desert Hot Springs Sub-basin have been monitored since the late 1920's. A network of 45 wells has been selected to demonstrate long-term and seasonal trends in groundwater elevations in these three sub-basins as part of DWR's CASGEM program[2] (see Figure 7). The groundwater elevations in the San Gorgonio Pass Sub-basin are not included in the CASGEM monitoring program as it is located outside the CVWD jurisdictional area. Two monitoring wells are located in Mission Creek Sub-basin (28 sq. mi.), four are located in the Desert Hot Springs Sub-basin (129 sq. mi.), and 39 are in the Indio Sub-basin (360 sq. mi.), (CVWD, 2011b). CVWD and MSWD have been designated as monitoring entities for the CVWD portion of the Desert Hot Springs and Mission Creek Sub-basins; CVWD has been designated as the monitoring entity for the CVWD portion of the Indio Sub-basin, and Desert Water Agency (DWA) has been designated as the monitoring entity for the DWA portion of the Indio Sub-basin. A list of these wells is shown in Attachment A. As described in the CVWD CASGEM monitoring plan, data gaps in the well network include the southeastern portion of the Mission Creek Sub-basin and the southeastern portion of the Desert Hot Springs Sub-basin; these data gaps exist due to lack of groundwater use in these areas.

The primary purpose of the CASGEM program is to monitor groundwater elevations. No groundwater quality data are obtained during monitoring activities. CASGEM monitoring occurs three times per year, or once per trimester, at each network well. The trimesters are 1) January through April, 2) May through August, and 3) September through December. Specific procedures and methods have been developed for this monitoring program, including establishing static groundwater conditions if sampling occurs at a production well rather than a monitoring well, establishing methods for recording measurements, taking measurements, conducting calculations, conducting quality assurance/quality control, and validating data.

In addition to the required CASGEM monitoring, DWR collects groundwater samples on separate wells to be analyzed for mineral, nutrient, minor element characteristics and contamination, as well as for

[2]In response to legislation, DWR developed the CASGEM program to establish a permanent, locally-managed program of regular and systematic groundwater elevation monitoring in all of California's groundwater basins. The CASGEM program relies and builds on the many, established local long-term groundwater monitoring and management programs. DWR's role is to coordinate the CASGEM program, to work cooperatively with local entities, and to maintain the collected elevation data in a readily and widely available public database.

overall quality and usage, as part of its regular statewide water management responsibilities. Table 1 shows the suite of constituents monitored by DWR, including arsenic, nitrate and fluoride which are COCs identified in the *DAC Water Quality Evaluation*.

DWR has 11 wells in Coachella Valley, all of which are located in the Indio Sub-basin. Figure 8 shows the approximate location of DWR monitoring wells. Construction information, well depth and screened interval for these wells are not readily available. Based on publically-available data, water quality samples were collected only in 2004.

**Figure 7: CVWD CASGEM Well Network**

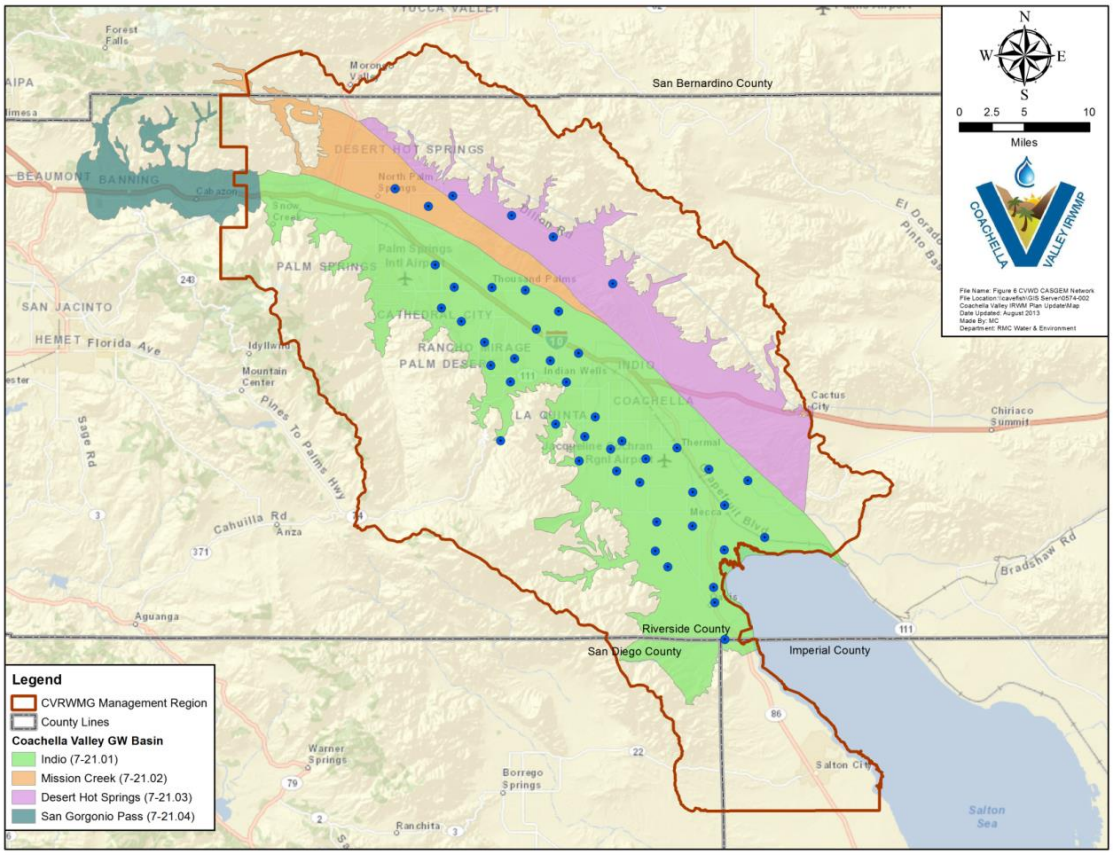
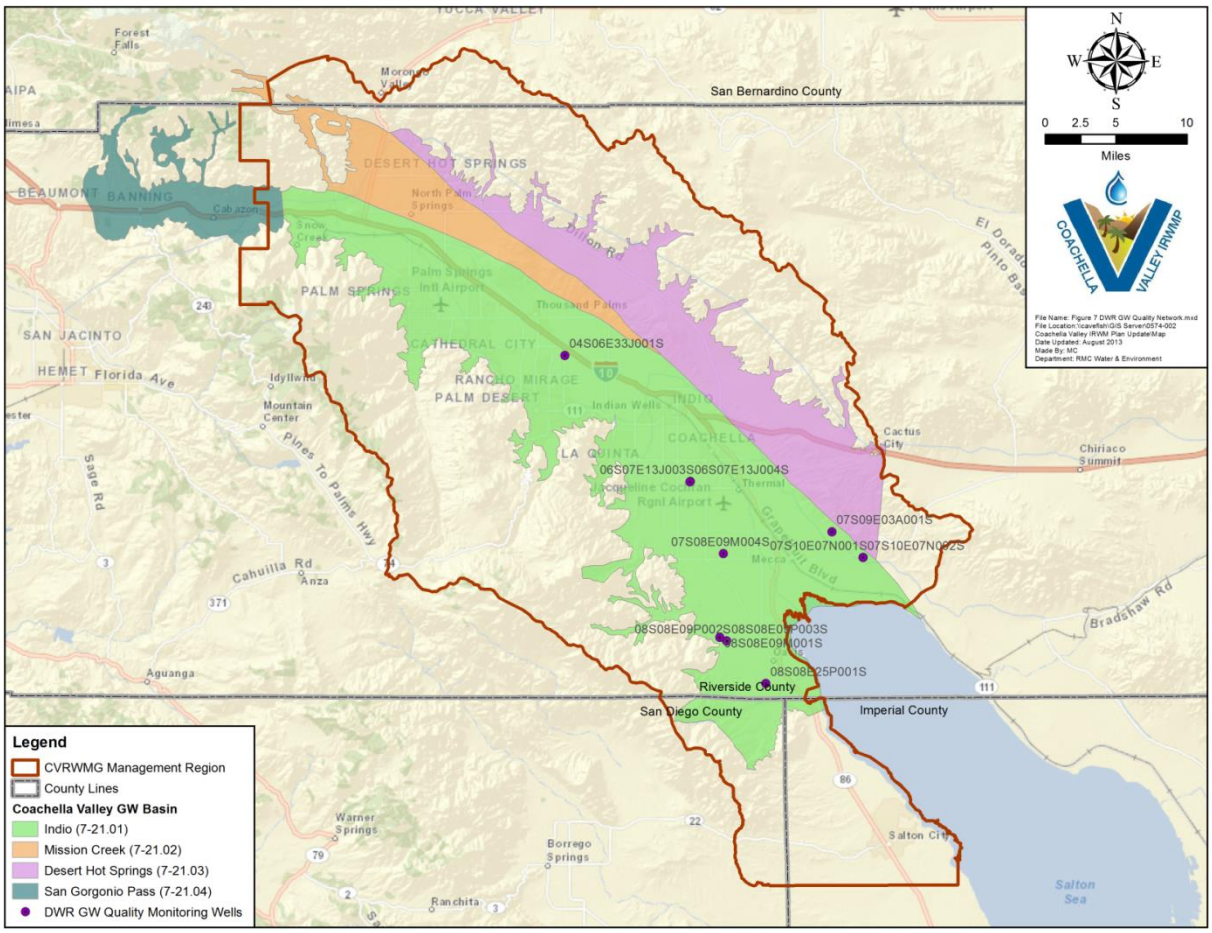



**Table 1: Constituents Monitored by DWR**

| List of Constituents Monitored by DWR | |
|---|---|
| pH | Fluoride[1] |
| Specific conductance or electrical conductivity (EC) (field & lab) | Total dissolved solids (TDS) |
| Temperature | Chloride |
| Hardness | Sulfate |
| Calcium | Boron |
| Magnesium | Bromide |
| Potassium | Barium |
| Sodium | Iron |
| Alkalinity | Manganese |
| Bicarbonate | Arsenic[1] |
| Nitrate[1] | Stable Isotopes of Oxygen and Hydrogen |

1 – Constituent of concern identified in the *DAC Water Quality Evaluation*

**Figure 8: DWR Groundwater Quality Monitoring Wells**




## 2.2.2 CDPH-Related Monitoring

The CDPH regulates public drinking water systems. A public drinking water system is defined as a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. Private domestic wells and irrigation wells are not regulated by the CDPH. The CDPH regulates all public water systems in the State to ensure the delivery of safe drinking water from these systems.

As part of their permit enforcement, CDPH establishes monitoring requirements for drinking water wells and all data collected must be reported to CDPH by the well owner. Production wells that supply drinking water are regulated under Title 22 of the California Code of Regulations (CCR). Title 22 also establishes the regulatory limits (i.e. MCLs) for volatile organic compounds, non-volatile synthetic organic compounds, inorganic chemicals, radionuclides, disinfection byproducts, and other general physical constituents in potable waters.

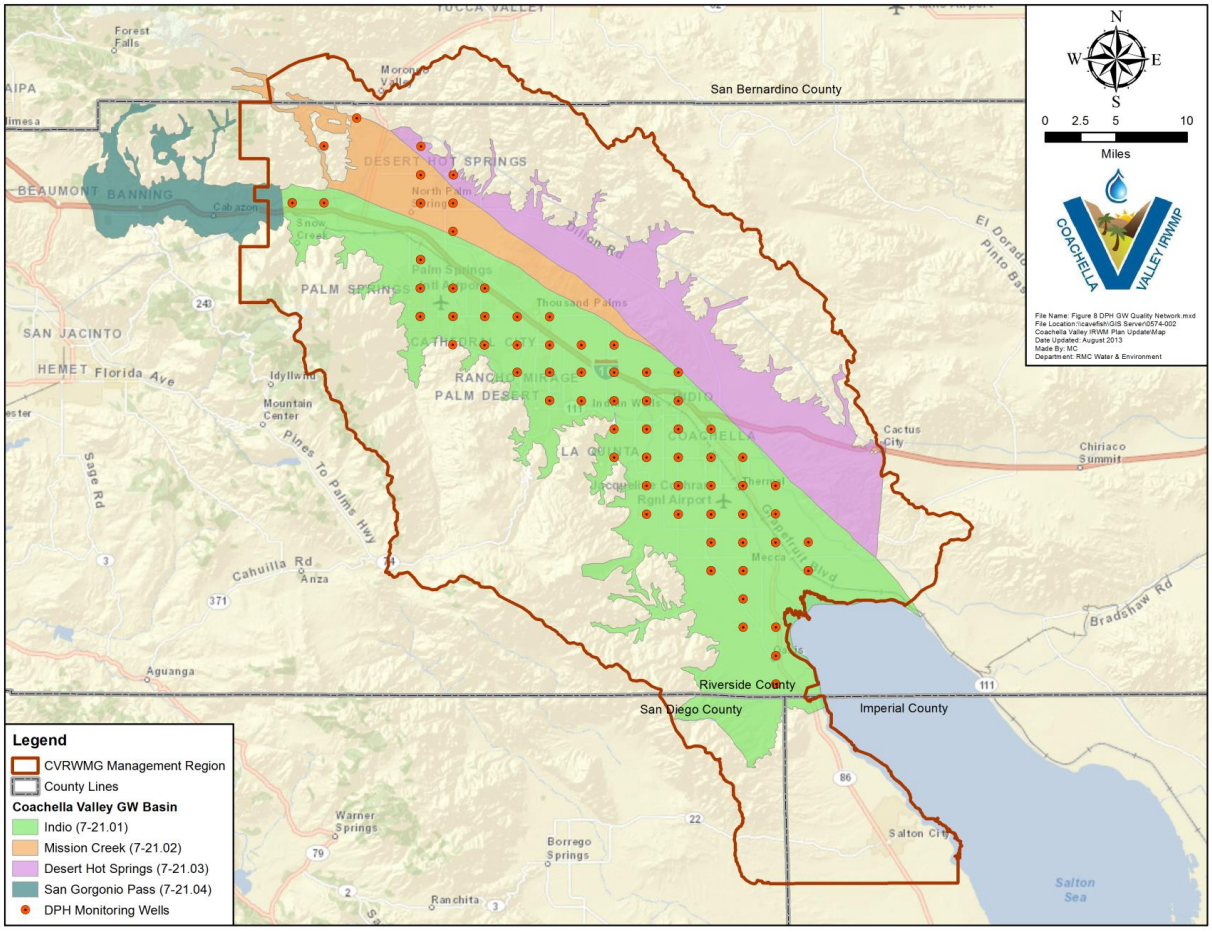
Public groundwater purveyors are obligated by their permits to collect groundwater samples to determine compliance with MCLs in accordance with monitoring schedules developed by CDPH, based on the size of the water system. Purveyors are required to submit data directly to CDPH via electronic transfer. The constituents monitored and the frequency of monitoring varies based on the well, size of the water system, and history of water quality monitoring results. CDPH provides water systems with monitoring plans to

identify required contaminant monitoring frequencies. These are updated periodically and vary for each water system.

There are currently 93 wells with recent data (2000 to 2012) for at least one of the COCs within Coachella Valley; these data were reported to CDPH and were, in turn, included in the Geotracker-GAMA online database. Well data reported to CDPH may change in the future as wells are put on standby or abandoned and as new wells are drilled and brought online. Accordingly, the CDPH data included in the analysis documented in this TM may change over time. However, the general geographic distribution and sampling frequency is not anticipated to vary significantly.

Figure 9 shows the approximate locations of wells in the CDPH monitoring network. Two of these wells are located in Desert Hot Springs Sub-basin, while six of them are located in the Mission Creek Sub-basin and the rest of the wells are located in Indio Sub-basin. Attachment B provides a 10-year period of record for each of the COCs (2003-2013). All production wells are monitored for Title 22 constituents with the exception of waived synthetic organic chemicals and gross beta particle activity. Construction information, well depth and screened interval for CDPH wells are not available.

**Figure 9: CDPH Groundwater Quality Monitoring Wells**




## 2.2.3 CVWD-Related Monitoring

CVWD monitors groundwater elevations and quality within the Coachella Valley within its jurisdictional boundaries as required by CDPH and as needed to manage the groundwater supplies to its water system. The approximate locations of CVWD's monitoring wells are shown in Figure 10. All of the CVWD

monitoring wells, except one in Mission Creek Sub-basin and one in Desert Hot Springs Basin, are located in Indio Sub-basin. Well depth and screened interval information is available for all the wells (see Attachment C**)**. Attachment C also provides the period of record for COCs. Table 2 shows the suite of constituents monitored, including the COCs.

**Figure 10: CVWD Groundwater Quality Monitoring Wells**

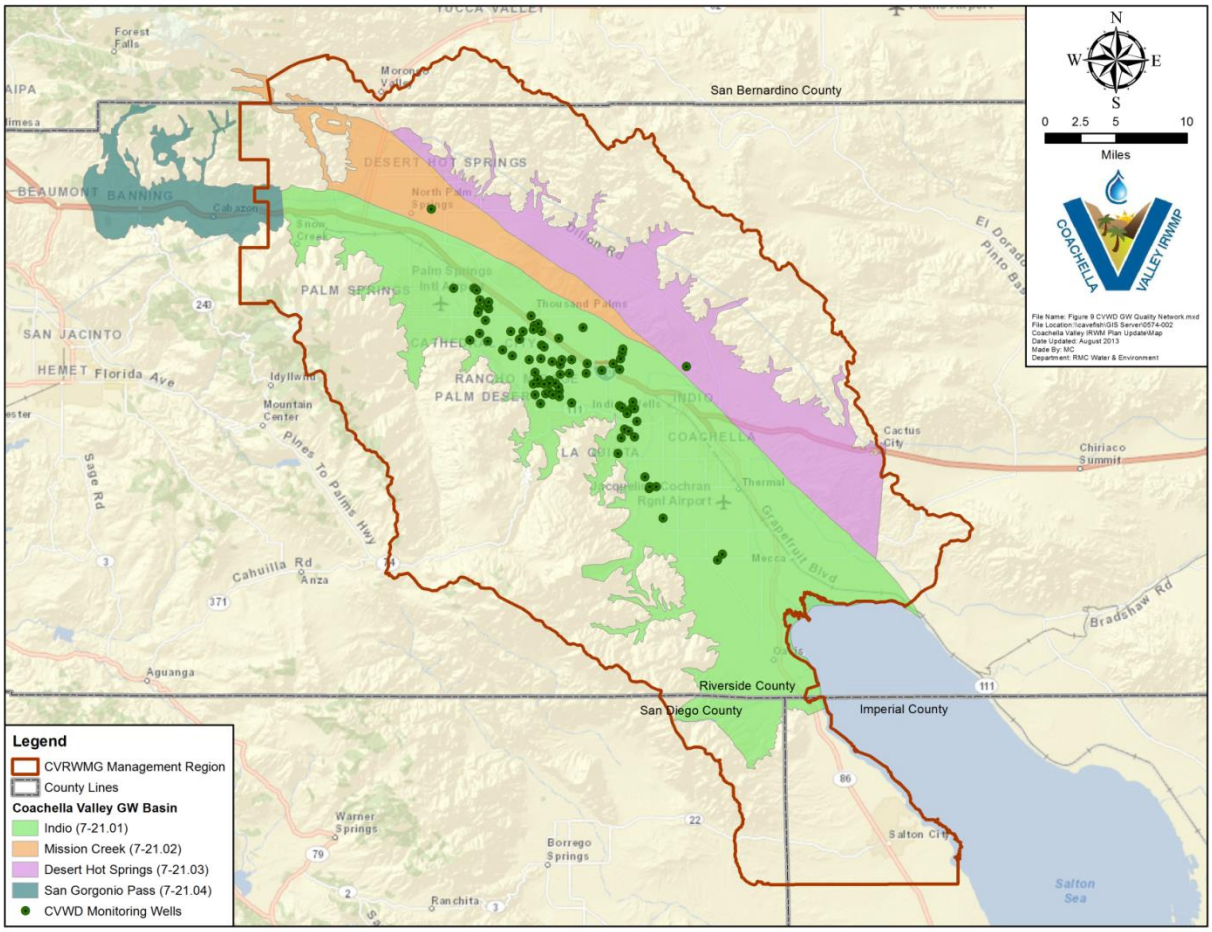


**Table 2: Constituents Analyzed by CVWD**

| Inorganic Chemicals | General Minerals | General Physical | Radiological | Bacteriological | VOCs | SOCs |
|---|---|---|---|---|---|---|
| Aluminum<br>Antimony<br>Arsenic[1]<br>Asbestos<br>Barium<br>Beryllium<br>Cadmium<br>Chromium (Total)[1]<br>Copper<br>Cyanide<br>Fluoride[1]<br>Iron<br>Manganese<br>Mercury<br>Nickel<br>Nitrate (as NO3)[1]<br>Nitrite (as N)<br>Perchlorate<br>Selenium<br>Silver<br>Thallium<br>Zinc | Total Hardness (as CaCO3)<br>Bicarbonate Alkalinity<br>Carbonate Alkalinity<br>Calcium<br>Magnesium<br>Sodium<br>Sulfate<br>Chloride | Specific Conductance<br>Turbidity<br>pH<br>Odor Threshold<br>Foaming Agents<br>Index | Gross Alpha<br>Gross Beta<br>Radium 226<br>Radium 228<br>Strontium-90<br>Tritium<br>Uranium[1] | Total Coliform<br>Fecal Coliform | Benzene<br>Carbon Tetrachloride<br>1,2-Dichlorobenzene<br>1,4-Dichlorobenzene<br>1,1-Dichloroethane<br>1,2-Dichloroethane<br>1,1-Dichloroethylene<br>CIS-1,2-Dichloroethylene<br>TRANS-1,2-Dichloroethylene<br>Dichloromethane<br>1,2-Dichloropropane<br>1,3-Dichloropropane (Total)<br>Ethylbenzene<br>Methyl-Tert-Butyl-Ether<br>Monochlorobenzene<br>Styrene<br>1,1,2,2,-Tetrachlororethane<br>Tetrachlororethylene<br>Toluene<br>1,2,4-Trichlorobenzene<br>1,1,1-Trichloroethane<br>1,1,2-Trichloroethane<br>Trichloroethylene<br>Trichlorofluoromethane<br>1,1,2-Trichloro-1,2,2-Trifluorethane<br>1,1,2-Trichloro-1,2,2-Trifluoroethane<br>Vinyl Chloride<br>Xylenes | Alachlor<br>Atrazine<br>Bentazon<br>Benzo(a)pyrene<br>Carbofuran<br>Chlordane<br>2,4-D<br>Dalapon<br>Dibromochloropropane (DBCP)<br>Di (2-Ethylhexyl) Adipate<br>Di (2-Ethylhexyl) Phthalate<br>Dinoseb<br>Diquat<br>Endothall<br>Endrin<br>Ethylene Dibromide (EDB)<br>Glyphosate<br>Heptachlor<br>Heptachlor Epoxide<br>Hexachlorobenzene<br>Hexzachlorocyclo-Pentadiene<br>Lindane<br>Methoxychlor<br>Molinate<br>Oxamyl<br>Pentachlorophenol<br>Picloram<br>Polychlorinated Biphenyls<br>Simazine<br>Toxaphene<br>2,3,7,8-TCDD (Dioxin)<br>2,4,5-TP (Silvex) |

Source: CVWD
1 – Constituent of concern identified in the DAC Water Quality Evaluation Project

Inorganic chemicals, general minerals, general physical parameters and volatile organic compounds are monitored for all the wells in the CVWD monitoring network every three years. However, radiologicals, bacteriologicals and synthetic organic compounds (SOCs) are not tested in all the wells and the frequency of monitoring varies based on the well and history of water quality monitoring results. Therefore, all COCs except uranium are monitored regularly (every three years) for all wells in the network. Uranium monitoring frequencies vary depending on the level of gross alpha particle activity found in each well.

### 2.2.4 Monitoring in Mission Creek and Garnet Hill Sub-basins

CVWD, DWA and MSWD currently collect production, water level and water quality data from production and monitoring wells to monitor groundwater conditions in the Mission Creek and Garnet Hill Sub-basins (MWH, 2013). CVWD, MSWD and DWA monitor groundwater levels in wells within the Mission Creek and Garnet Hill Sub-basins. Ten wells are monitored in Desert Hot Springs Sub-basin, 22 wells are monitored in the Mission Creek Sub-basin, and six wells are monitored in the Garnet Hill Sub-basin as shown in Attachment D. MSWD monitoring is limited to District wells with levels taken

monthly. CVWD monitors both its own wells and a number of private wells in these sub-basins with water levels taken three times per year (MWH, 2013).

CVWD and MSWD are monitoring the groundwater quality within the Mission Creek and Garnet Hill Sub-basins (at 21 wells) for physical constituents, general minerals, metals, radiological constituents and regulated organic compounds at least once every three years and annually for nitrate in accordance with current CDPH requirements. Attachment D provides the wells monitored for groundwater quality and the frequency of monitoring.

### 2.2.5 Other Agencies-Related Monitoring

IWA, CWA and DWA monitor the groundwater quality in their service areas in accordance with current CDPH requirements and schedules.

### 2.2.6 Special Studies

The USGS has also sampled and analyzed groundwater quality in CVGB as part of the GAMA Program (USGS, 2009). Groundwater quality in the approximately 820 square mile Coachella Valley Study Unit (COA) was sampled and analyzed in 2007 with the results compiled and analyzed in subsequent years. The COA for this study consisted of the San Gorgonio Pass Sub-basin, the Indio Sub-basin, the Mission Creek Sub-basin, and the Desert Hot Springs Sub-basin. The USGS well network consists of 31 wells in CVRWMG Management Region, including 17 "grid wells[3]" and 14 additional "understanding wells[4]".

The USGS well network is shown on Figure 11. Two of the USGS monitoring wells are located in Desert Hot Springs Sub-basin, while four are located in Mission Creek Sub-basin, and remainder are located in Indio Sub-basin. Samples were collected from these monitoring wells during February and March of 2007. Samples were collected in accordance with the protocols established by the USGS National Water Quality Assessment (NAWQA) program (Koterba and others, 1995) and the USGS National Field Manual (USGS, variously dated). Well depth and screened interval information is provided in Attachment E.

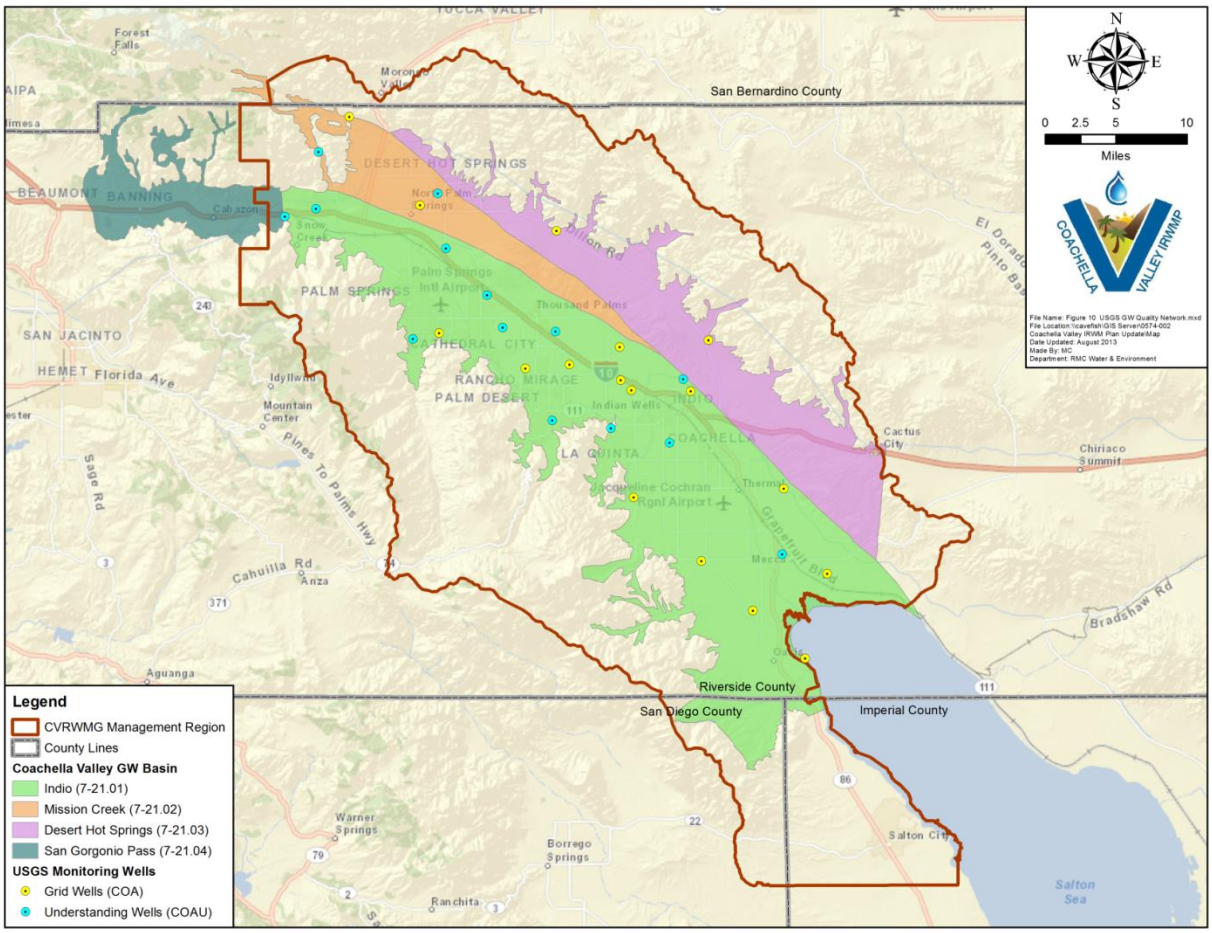
All wells sampled during the USGS study were analyzed for a standard set of constituents, including volatile organic compounds, pesticides and pesticide degradates, pharmaceutical compounds, perchlorate, and uranium, stable isotopes of hydrogen and oxygen of water, tritium, nutrients, hexavalent chromium, major ions, and trace elements. Groundwater samples were analyzed for up to 370 constituents, including the COCs.

The USGS, DWA, CVWD, and the Riverside County Flood Control and Water Conservation District also participate in basin monitoring through the Cooperative Water Resources Program. The Cooperative Water Resources Program includes stream monitoring (through stream gaging facilities), as well as a groundwater and surface water quality program.

[3] "Grid wells" were selected using a randomized grid-based method (Scott, 1990) - statistically unbiased, spatially-distributed assessment of the water quality. CDPH and USGS wells were plotted on a map; a grid of 20 equal-area cells were drawn on the unit, and wells were selected from at least one public-supply well per grid (wells in 18 of 20 cells were sampled).

[4] "Understanding wells" were selected to aid in the understanding of specific groundwater-quality issues in the COA Study Unit. These wells were not included in the statistical characterization of water quality

**Figure 11: USGS Groundwater Quality Monitoring Wells**




# 3 Identified Data Gaps

The Coachella Valley WMP identifies specific data gaps in basin groundwater monitoring, including the following:

- Lack of a centralized groundwater database that allows all water agencies to share data.
- Non-uniform water quality monitoring data for several COCs
- Existing groundwater models lack water quality predictive capabilities.

Similarly, the Mission Creek and Garnet Hill Sub-basins WMP identified the following data gaps in sub-basin data collection:

- Groundwater elevation canvass
- Private well canvass
- Groundwater quality (major ions)
- Garnet Hill Sub-basin monitoring well

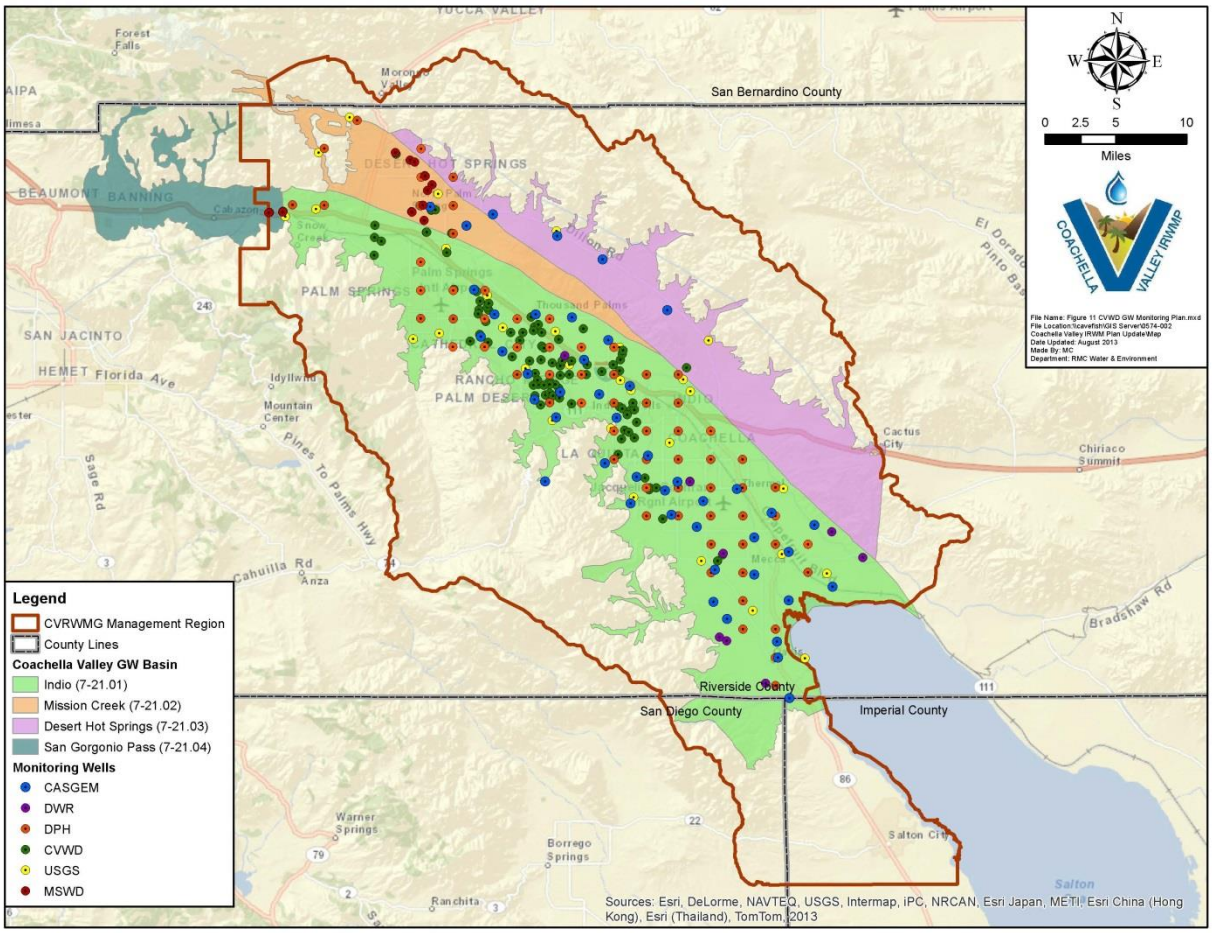
Finally, the *DAC Groundwater Quality Evaluation* identified several similar data gaps, grouping these data gaps into three categories:

- Category 1: Specific Well Locations in identified Areas of Concern - For this category, identified data gaps included identifying/confirming the well locations and owners/users, and confirming groundwater quality at those locations
- Category 2: Other Locations in identified Areas of Concern not yet Identified with Groundwater Concerns – For this category, identified data gaps included identifying existing wells in these areas, confirming well construction details, identifying possible locations for new monitoring wells, and confirming groundwater quality in these locations.
- Category 3: Basin-Wide Data Gaps – Data gaps identified for this category included confirming the construction details of existing wells, identifying where in the groundwater basin additional wells are recommended for spatial coverage, and developing a basin- sampling and analysis program to provide snapshot(s) of water quality conditions

Figure 12 shows all of the wells monitored within the CVGB. As shown on Figure 12, there are apparent spatial gaps that suggest monitoring is not taking place in certain places of the Coachella Valley. However, these apparent gaps generally occur in areas where monitoring is not necessary or appropriate such as the mountainous areas located at the edges of groundwater basins, areas that are prone to flooding, and areas where there is a lack of groundwater use. Spatial monitoring gaps are also discussed in the CVWD Groundwater Elevation Monitoring Plan for CASGEM which states that there are small data gaps in the southeastern portion of the Mission Creek Sub-basin and the southeastern portion of the Desert Hot Springs Sub-basin and that these data gaps exist due to lack of groundwater use in these areas.

However, the existing WMPs also discuss spatial monitoring data gaps and provide recommendations for modifications and additions to existing monitoring programs that could be made to improve knowledge of the region's groundwater basins. The WMPs specifically note that obtaining additional groundwater monitoring information in areas located at the edges of groundwater basins (generally along fault lines) could help with understanding groundwater basin recharge at the edges of the alluvial fans.

**Figure 12: Wells Monitored in the CVGB**




# 4 Recommended Modifications/Additions to Existing Monitoring Programs

The following sections comprise the recommended modifications and/or additions to existing groundwater monitoring programs presently being implemented in the CVGB. The suggested sampling locations, frequency of sampling, and monitoring parameters are described in Table 3.

The proposed monitoring program modifications and additions, described herein, acknowledge the recommendations and activities proposed by the Coachella Valley WMP and Mission Creek and Garnet Hill Sub-basins WMP.

**Table 3: Recommended Sampling Program**

| Monitoring Type | Program | Implementing Agency | Monitoring Frequency | Additional Monitoring Wells? | Estimated Sampling and Analysis Cost per Well |
|---|---|---|---|---|---|
| Groundwater Level | CASGEM | CVWD, MSWD, DWA | 3 times per year | No | $150[4] |
| | Agency Monitoring | CVWD, MSWD | | Yes[2] | |
| Groundwater Quality[1] | CDPH | CDPH | Variable[3] | No | $550[4] |
| | Agency Monitoring | CVWD, MSWD, DWA | Variable[3] | Yes[2] | |

1 – Monitoring should be done for all the constituents of concern (nitrate, arsenic, uranium, fluoride, perchlorate and hexavalent chromium)
2 – At proposed areas of concern
3 – Arsenic, perchlorate and fluoride should be sampled every three years. Wells should be sampled annually for arsenic if an increasing or decreasing trend is noted. Nitrate should be monitored consistent with CDPH recommendations and hexavalent chromium should be monitored consistent with forthcoming CDPH recommendations.
4 – Lab fees, per sample: metals (method 200.8) are $225, fluoride is $15, Chromium6 is $90, perchlorate is $70, and Nitrate is $15 for a total sample cost of $415. Assuming one labor hour for sampling per site at $125/hour for a total sampling and analysis cost of approximately $550/sample (round up to $550 to cover miscellaneous such as shipping, etc.). Assume water elevations collected at time of sampling.

## 4.1 Recommended Modifications to Existing Monitoring Programs per Mission Creek and Garnet Hill Sub-basins WMP

The Mission Creek and Garnet Hill Sub-basins WMP identifies the following recommended modifications to existing monitoring programs in the Mission Creek and Garnet Hill Sub-basins to address identified data gaps.

### Groundwater Levels

The Mission Creek and Garnet Hill Sub-basins WMP identified a list of prospective additional wells within Mission Creek and Garnet Hill Sub-basins that could be included in the groundwater level monitoring program; these wells are summarized in Attachment F. Most of the recommended wells are existing wells whose status and physical condition should be evaluated for suitability for inclusion in the monitoring programs.

In addition to the selection of existing wells included in the monitoring network for improved distribution of water level measurements, the WMP recommends that several new dedicated monitoring wells be constructed. Additional wells near the Mission Creek Spreading Basin would provide a better indication of the extent of mounding due to recharge operations and allow for tracking of water quality changes to document the movement of imported recharge water in the aquifer (MWH, 2013). Additional monitoring wells near the basin boundaries and in identified spatial voids in the existing monitoring network will provide better data to document natural inflow to and outflow from the basin, changes in groundwater elevations and quality near the recharge basin, and to understand overall basin water levels and quality.

The WMP also recommends installation of transducers and data loggers on selected monitoring wells to collect more accurate groundwater level data on a regular basis during both static and pumping conditions.

### Groundwater Quality

Since the current monitoring programs of MSWD and CVWD are sufficient for regulatory compliance, no major changes are recommended by the Mission Creek and Garnet Hill Sub-basins WMP. The WMP does have the following recommendations to improve groundwater quality monitoring in the Mission Creek and Garnett Hill Sub-basins:

- More frequent monitoring of private wells for temperature, TDS and general minerals to provide a better indication of water quality variations across the Mission Creek and Garnet Hill Sub-basins.
- Monthly analysis of the Mission Creek Monitoring Well and future monitoring wells near the recharge basins for TDS and possibly sulfate to track the movement of imported recharge water in the basin.
- Construction of nested monitoring wells to allow collection of water samples at varying depths. Nested wells may also provide information on uranium occurrence and movement with depth in the aquifer.
- Analysis of general minerals for the wells selected for monitoring of recharge water on annual basis.
- Analysis of radiological constituents for the wells previously identified with radiological constituents on an annual basis.
- Evaluations of water quality for general minerals for surface water sources, such as Mission Creek, at least on a triennial basis

### Groundwater Use

The Mission Creek and Garnet Hill Sub-basins WMP recommends the following additional measures be implemented to improve groundwater production and use monitoring:

- Update the existing well database to determine well location, operational status, and metering status.
- Make arrangements for installation of production meters with routine production reporting on wells not currently metered.
- Evaluate unused wells for use as potential monitoring wells.
- For inactive wells whose physical condition prevents their use for monitoring, develop a program to cap or destroy the wells to prevent water quality degradation and/or safety hazards.

## 4.2 Recommended Modifications to Existing Monitoring Programs per Coachella Valley WMP

The Coachella Valley WMP identifies the following recommended modifications to existing monitoring programs to address identified data gaps in the CVWD and DWA service areas.

### Groundwater Levels

In terms of monitoring groundwater elevations in the groundwater basin, the following five monitoring modifications/projects were recommended in the Coachella Valley WMP:

CVWD monitors water levels in 307 public and private wells in its service area three times per year on a rotating basis. These data are stored in a database and plotted as hydrographs. In accordance with SBx7-6, which created the CASGEM program, the CVRWMG agencies are currently working to meet the public reporting requirements of the CASGEM program. However, CVWD and DWA will need to compare data collected during CASGEM-related monitoring with modeled groundwater levels to ensure that the numerical model is accurately simulating basin conditions. To this end, it is recommended that an annual assessment of data be conducted, comparing measured water levels with modeled levels to document progress towards meeting the WMP and CASGEM objectives. And, as needed, the model should be updated and recalibrated to accurately reflect the new information collected.

Secondly, it is proposed that additional groundwater level hydrographs for wells in each sub-basin should be prepared to better indicate the changes in groundwater levels, and an annual accounting of the amount of water stored in the basin should be prepared. CVWD has already been creating such hydrographs, which are available in annual *Engineer's Reports* produced by the district.

Thirdly, areas in the Valley with identified spatial data gaps for existing wells should be surveyed to identify existing wells that could potentially be added to the existing monitoring network. For each identified well that may fill a monitoring void, the well location and operational status (active, inactive, abandoned, destroyed) should be determined, along with whether a meter is installed, whether production is being reported, and if any water level and/or groundwater quality data exist for that well.

Fourth, it is recommended that data loggers be installed on selected, dedicated monitoring wells in the groundwater basin to provide more continuous water level data. This will allow for real-time evaluation of groundwater elevation data, allowing for timely decision-making.

Finally, a lack of a centralized groundwater database presently inhibits the sharing of water elevation and quality data between agencies. To this end, it was recommended that a water resource database be developed for the Valley which will be used as a mechanism for data sharing among the participating water agencies and Tribes. At a minimum, this database should be capable of storing well ownership data, well logs, groundwater production, water level and water quality data. The database should be capable of interfacing with other outside databases, as needed, for reporting and utilizing common data.

### Groundwater Quality

While surface and groundwater quality monitoring is performed by a number of agencies in the Coachella Valley and these data are reported to customers through annual consumer confidence reports, these activities need to be maintained and new requirements brought into the annual monitoring programs as required. The Coachella Valley WMP recommends assessment of groundwater quality due to lack of a comprehensive water quality monitoring program and database for the Valley. It is also recommended that water quality data be incorporated into the centralized groundwater database mentioned above.

The WMP also recommends CVWD work jointly with the water agencies and Tribes in the Valley to investigate if perchlorate exists in water supply wells due to a lack of data for private and Tribal wells.

Finally, the WMP recommends development and calibration of a water quality model capable of simulating the changes in salinity and possibly other conservative water quality parameters in conjunction with the salt/nutrient management plan.

### Groundwater Use

As documented in the Coachella Valley WMP, a reporting threshold of 25 AFY is required for pumpers within the CVWD areas of benefit, while the same threshold in the DWA service area is 10 AFY. With the exception of wells in the Garnet Hill Sub-basin, all producers whose combined groundwater production is greater than 25 AFY are required to have a measuring device capable of measuring and registering the amount of water produced. However, not all wells in the Valley are metered. To address this deficiency, the following recommendations are made:

- Maintain up-to-date groundwater production records for the Coachella Valley groundwater basin to properly manage the basin and fairly allocated basin management costs. This includes conducting an updated survey of production wells, using power records and pump tests to develop more accurate estimates of pumping by unmetered wells, and requiring the installation of meters on wells where necessary to obtain accurate production information.
- Compile and document the amount of in-lieu recharge that takes place through delivery of recycled or imported water to reduce groundwater production on an annual basis.

## 4.3 Additional Recommendations for Data and Monitoring Program Modifications

The following are several additional recommendations for activities or projects beyond those recommended in the WMPs to address data gaps in the existing monitoring programs.

### Spatial Monitoring Well Distribution

In general, the existing monitoring programs described above are adequate for monitoring the spatial variability in groundwater levels and quality in the CVGB, except in areas where there are existing spatial gaps in monitoring. As described in Section 3, it is recognized that installation of additional monitoring wells in these areas which are mountainous, prone to flooding, or where groundwater is not used is not necessary, and therefore not recommended. However, consistent with the Region's existing WMPs, obtaining additional groundwater monitoring information in areas located at the edges of groundwater basins (generally along fault lines) could provide additional insight on groundwater conditions at the margins of the groundwater sub-basins.

### Vertical Monitoring Well Distribution

Well completion information for some wells is not available. Well completion information allows better characterization of the vertical distribution of groundwater levels and COCs in the Coachella Valley. To address the data deficiency in regards to the vertical distribution of monitoring wells, the following is recommended for wells without well completion information:

- Contact DWR, CDPH and well owners to ask for available well completion information.
- Review available DWR well logs for completion information on wells in the monitoring network.
- Analyze all wells in the monitoring networks to identify any data gaps in terms of the vertical distribution of data collected.

As needed, based on the results of this analysis, additional existing wells or new monitoring wells can be added to the monitoring networks to ensure that there is a vertical distribution in data collected. It should be noted, however, that well completion information is not necessarily public information and may not be obtained by the CVRWMG agencies in some cases.

### Monitoring Program Documentation and Update

Formal documentation of on-going monitoring activities in the CVGB will ensure consistency in monitoring implementation and data analysis and reporting. It is therefore recommended that formalized monitoring program documentation be prepared, similar to that prepared for the CASGEM water level monitoring program, for each ongoing monitoring program in the groundwater basin. As part of this documentation preparation, opportunities for program integration and streamlining should be considered and discussed with the monitoring entities.

The afore-described monitoring program modifications/additions are based on publically available data existing at the time this document was prepared and at the time the region's existing WMPs were previously prepared. As such, it is recognized that, as additional data becomes available and is synthesized with existing databases, data gaps will be addressed and changes to the CVGB monitoring programs will be required. Therefore, it is recommended that all basin-wide monitoring programs be revisited in five years, and updated as appropriate given the information learned and programs implemented in the Coachella Valley.

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## Attachment A: CVWD Network Wells for CASGEM

| State Well No. | Sub-basin | Confined or Unconfined Aquifer | GSE (ft) | RPE (ft) | Well Use | Well Status | Total Well Depth (ft) |
|---|---|---|---|---|---|---|---|
| 03S05E10R01S | Dst Hot Sprg | Unconfined | 925.4 | 967.4 | Monitoring Well | Inactive | 210 |
| 03S06E21F02S | Dst Hot Sprg | Unconfined | 1,026.2 | 1,069.2 | Monitoring Well | Inactive | N/A |
| 03S06E25Q01S | Dst Hot Sprg | Unconfined | 898.8 | 942.8 | Monitoring Well | Inactive | N/A |
| 04S07E14E01S | Dst Hot Sprg | Unconfined | 1,032.0 | 1,077.0 | Irrigation | Inactive | N/A |
| 04S05E09B01S | Indio | Unconfined | 397.5 | 400.5 | Monitoring Well | Inactive | 806 |
| 04S05E15R02S | Indio | Unconfined | 313.3 | 349.3 | Irrigation | Active | N/A |
| 04S05E27E01S | Indio | Unconfined | 313.4 | 317.4 | Monitoring Well | Inactive | 400 |
| 04S05E35G03S | Indio | Unconfined | 269.7 | 274.7 | Monitoring Well | Inactive | N/A |
| 04S06E18R01S | Indio | Unconfined | 239.0 | 245.0 | Monitoring Well | Inactive | 518 |
| 04S06E22C01S | Indio | Unconfined | 216.0 | 223.0 | Monitoring Well | Inactive | 328 |
| 04S06E25J02S | Indio | Unconfined | 136.6 | 160.6 | Irrigation | Inactive | 350 |
| 04S06E35P01S | Indio | Unconfined | 128.9 | 153.9 | Irrigation | Inactive | 600 |
| 05S06E06Q01S | Indio | Unconfined | 214.6 | 222.6 | Monitoring Well | Inactive | 1,202 |
| 05S06E13G02S | Indio | Unconfined | 151.1 | 160.1 | Monitoring Well | Inactive | N/A |
| 05S06E16A03S | Indio | Unconfined | 140.8 | 181.8 | Monitoring Well | Inactive | 275 |
| 05S06E18R01S | Indio | Unconfined | 185.1 | 195.1 | Monitoring Well | Inactive | 458 |
| 05S06E28C02S | Indio | Unconfined | 246.9 | 257.9 | Monitoring Well | Inactive | 680 |
| 05S07E08Q01S | Indio | Unconfined | 21.2 | 58.2 | Irrigation | Active | N/A |
| 05S07E30A01S | Indio | Unconfined | 66.5 | 78.5 | Monitoring Well | Inactive | 1,000 |
| 06S06E12G01S | Indio | Unconfined | 80.5 | 93.5 | Monitoring Well | Inactive | 377 |
| 06S06E17K01S | Indio | Unconfined | 927.3 | 961.3 | Irrigation | Active | N/A |
| 06S07E04H01S | Indio | Confined | 5.8 | 24.8 | Monitoring Well | Inactive | 740 |
| 06S07E13M02S | Indio | Confined | -75.3 | -55.3 | Monitoring Well | Inactive | 387 |
| 06S07E16D02S | Indio | Confined | -9.6 | 4.4 | Monitoring Well | Inactive | 1,170 |
| 06S07E23F01S | Indio | Confined | -90.8 | -52.8 | Irrigation | Active | N/A |
| 06S07E26Q01S | Indio | Confined | -106.8 | -80.8 | Irrigation | Inactive | N/A |
| 06S07E29B01S | Indio | Unconfined | -0.6 | 26.4 | Irrigation | Active | 750 |
| 06S08E19R01S | Indio | Confined | -142.5 | -103.5 | Irrigation | Active | N/A |
| 06S08E22D02S | Indio | Confined | -131.9 | -116.9 | Monitoring Well | Inactive | 1,100 |
| 06S08E25Q01S | Indio | Confined | -150.9 | -122.9 | Irrigation | Active | 648 |
| 06S08E31P01S | Indio | Confined | -150.3 | -115.3 | Irrigation | Active | 575 |
| 06S09E33K01S | Indio | Unconfined | 3.0 | 32.0 | Irrigation | Active | 430 |
| 07S08E02L03S | Indio | Confined | -191.4 | -161.4 | Irrigation | Active | N/A |
| 07S08E14N01S | Indio | Confined | -203.1 | -172.1 | Irrigation | Active | N/A |
| 07S08E17G01S | Indio | Confined | -94.3 | -78.3 | Monitoring Well | Inactive | 750 |
| 07S08E29G01S | Indio | Confined | 50.9 | 82.9 | Irrigation | Active | N/A |
| 07S08E31R01S | Indio | Confined | 206.5 | 239.5 | Monitoring Well | Inactive | 800 |
| 07S09E07J01S | Indio | Confined | -203.2 | -181.2 | Monitoring Well | Inactive | 880 |
| 07S09E23N01S | Indio | Confined | -199.6 | -182.6 | Monitoring Well | Inactive | 865 |

| State Well No. | Sub-basin | Confined or Unconfined Aquifer | GSE (ft) | RPE (ft) | Well Use | Well Status | Total Well Depth (ft) |
|---|---|---|---|---|---|---|---|
| 07S09E30R04S | Indio | Confined | -221.8 | -200.8 | Monitoring Well | Inactive | 395 |
| 08S08E24A01S | Indio | Confined | -191.0 | -151.0 | Irrigation | Active | N/A |
| 08S09E07N04S | Indio | Confined | -225.7 | -202.7 | Monitoring Well | Inactive | 1,380 |
| 08S09E31R01S | Indio | Confined | -33.6 | -15.6 | Monitoring Well | Inactive | 442 |
| 03S04E12B02S | Mission Creek | Unconfined | 884.6 | 885.6 | Monitoring Well | Inactive | 503 |
| 03S05E17J01S | Mission Creek | Unconfined | 788.6 | 790.6 | Monitoring Well | Inactive | N/A |

Source: CVWD, 2011b

Notes: NA = Not Available; all elevations are relative to mean sea level

## Attachment B: Wells Monitored for CDPH

| CDPH Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| 1310011 | | | | | | 1987-2005 | 1987-2007 | 1998-2006 | 1987-2005 | 2000-2004 | 2000-2001 |
| 3301027 | | | | | | 2012 | 2006-2012 | | 2012 | 2012-2012 | |
| 3301031 | | | | | | | | | | 2001-2010 | |
| 3301040 | | | | | | 1999-2009 | 1999-2012 | 2005-2009 | 1999-2009 | 2008-2009 | |
| 3301046 | | | | | | 2008 | 2002-2012 | 2002-2007 | 2008 | 2005-2012 | 2005 |
| 3301082 | | | | | | 1993-2008 | 1993-2008 | | 1993-2008 | | |
| 3301103 | | | | | | | | | | 2001-2001 | 2001 |
| 3301107 | | | | | | 2001-2011 | 2001-2011 | 2008-2011 | 2001-2011 | 2008-2011 | |
| 3301147 | | | | | | 2004-2009 | 2004-2012 | | 2004 | 2008-2008 | |
| 3301148 | | | | | | | 2007-2012 | | 2011 | | |
| 3301149 | | | | | | 2005-2011 | 2005-2012 | 2010 | 2005-2011 | 2005-2011 | 2005 |
| 3301152 | | | | | | 2005-2009 | 2005-2008 | | 2005-2009 | 2008-2008 | |
| 3301153 | | | | | | 2005 | 2004-2012 | | 2005 | 2004-2008 | |
| 3301155 | | | | | | 2004-2008 | 2002-2012 | 2008-2009 | 2004-2008 | 2003-2008 | 2004-2005 |
| 3301170 | | | | | | 1993-1998 | 1993-2000 | 1999 | 1993-1999 | | |
| 3301206 | | | | | | | 2008-2012 | | 2011-2012 | | |
| 3301209 | | | | | | 2009-2011 | 2009-2012 | 2010-2012 | 2009-2011 | 2009-2009 | |
| 3301220 | | | | | | 1997-2006 | 1997-2007 | 1997-2006 | 1997-2006 | | |
| 3301238 | | | | | | 1987-2011 | 1987-2012 | 2005-2012 | 1987-2011 | 2000-2012 | 2000 |
| 3301241 | | | | | | | 2008-2011 | | 2009 | 2008-2008 | |
| 3301247 | | | | | | 2003 | 2003-2011 | 2001-2012 | 2003 | 2008-2009 | |
| 3301276 | | | | | | 2004-2010 | 2004-2012 | 2010 | 2004-2010 | 2008-2011 | |
| 3301297 | | | | | | | 2006-2007 | | | | |
| 3301305 | | | | | | 2005 | 2005-2009 | 2009 | 2005 | 2008-2008 | |
| 3301372 | | | | | | 2003-2007 | 2001-2007 | | 2003-2007 | 2001-2008 | 2008 |

| CDPH Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| 3301373 | | | | | | 2010 | 2004-2011 | | 2008-2010 | 2010-2010 | |
| 3301380 | | | | | | 2006-2012 | 2006-2011 | | 2006-2010 | 2008-2009 | |
| 3301388 | | | | | | 2006-2009 | 2005-2012 | 2010 | 2006 | 2008-2008 | |
| 3301445 | | | | | | 1993-2009 | 1993-2004 | | 1993-2009 | | |
| 3301471 | | | | | | 2008 | 2008 | 2008 | 2008 | | |
| 3301476 | | | | | | 2006-2009 | 2006-2010 | | 2006-2009 | 2008-2009 | |
| 3301489 | | | | | | 2002 | 2001-2004 | 2001 | 2002 | | |
| 3301493 | | | | | | | 2001 | | | | |
| 3301557 | | | | | | | 2006 | | | | |
| 3301566 | | | | | | | 2002-2006 | | | | |
| 3301618 | | | | | | | 2001-2003 | | | | |
| 3301683 | | | | | | | 2006-2008 | | | | |
| 3301717 | | | | | | 1996-2010 | 1996-2012 | 2012 | 1996-2010 | 2004-2010 | 2004 |
| 3301734 | | | | | | 2001 | 2001 | 2002 | 2001 | | |
| 3301735 | | | | | | 2003-2010 | 2003-2010 | | 2003-2010 | 2004-2010 | 2004 |
| 3301746 | | | | | | 2002-2005 | 2000-2008 | 2006 | 2002-2005 | 2008-2008 | |
| 3301750 | | | | | | | 2001-2012 | | | | |
| 3301755 | | | | | | 2007-2012 | 2002-2011 | 2006 | 2009 | 2008-2009 | |
| 3301758 | | | | | | | | | | 2009-2010 | |
| 3301803 | | | | | | 2010 | 2009-2012 | 2001-2010 | 2010 | 2008-2010 | 2009 |
| 3301834 | | | | | | | 2006-2012 | | | | |
| 3301850 | | | | | | 2001 | 2001 | | 2001 | | |
| 3301875 | | | | | | 2003 | 2003 | 2003 | 2003 | | |
| 3301888 | | | | | | 2007-2010 | 2007 | | 2007-2010 | | |
| 3301933 | | | | | | 1995-2001 | 1995-2002 | | 1995-2001 | 2000-2001 | 2000-2001 |
| 3301935 | | | | | | 2004-2012 | 2004-2012 | 2010 | 2004-2012 | 2012-2012 | |
| 3301937 | | | | | | 2001-2009 | 2001-2011 | 2001-2011 | 2001-2009 | 2006-2009 | 2006 |

| CDPH Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| 3301939 | | | | | | 2007-2010 | 2004-2010 | 2011 | 2007-2010 | 2008-2010 | |
| 3301965 | | | | | | | 2001 | | | | |
| 3301980 | | | | | | | | | | 2006-2009 | |
| 3301981 | | | | | | | 2003-2010 | | | | |
| 3301989 | | | | | | | 2000 | | | | |
| 3301990 | | | | | | 2004 | 2004-2012 | | 2004 | | |
| 3301991 | | | | | | | 2001 | | | | |
| 3302008 | | | | | | 2001-2008 | 2001-2008 | 2002-2003 | 2001-2008 | 2008-2008 | |
| 3302009 | | | | | | 2008 | 2008 | | 2008 | 2008-2008 | |
| 3302027 | | | | | | | 2000-2012 | | 2000 | | |
| 3302034 | | | | | | | 2001 | | | | |
| 3302069 | | | | | | 2005-2009 | 2005-2009 | | 2005-2009 | 2009-2009 | |
| 3302079 | | | | | | 2007 | 2007 | | 2007 | | |
| 3302081 | | | | | | 2001 | 2001 | | 2001 | | |
| 3302088 | | | | | | | | | 2010-2012 | | |
| 3303002 | | | | | | 2003-2009 | 2001-2012 | | 2003-2009 | | |
| 3303003 | | | | | | 2002-2010 | 2002-2012 | 2009 | 2002-2010 | 2010-2010 | |
| 3303007 | | | | | | 2007 | 2007 | | 2007 | | |
| 3303012 | | | | | | | 2003-2010 | | | | |
| 3303025 | | | | | | 2010 | | | 2008-2012 | | |
| 3303026 | | | | | | | 2008 | 2008-2012 | 2011-2012 | | |
| 3303028 | | | | | | 2004 | 2002-2004 | | 2004 | 2004-2004 | 2004 |
| 3303035 | | | | | | | 2010 | 2011 | | 2009-2010 | |
| 3303041 | | | | | | 2009-2012 | | | | | |
| 3303048 | | | | | | 2009 | | | | | |
| 3303085 | | | | | | | 2003 | | | | |
| 3303090 | | | | | | | 2004-2011 | | | | |

| CDPH Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| 3303092 | | | | | | 2009-2012 | 2012 | | | 2009-2009 | |
| 3303100 | | | | | | 2004-2012 | 2004-2012 | 2011-2012 | 2004-2012 | 2008-2012 | |
| 3310001 | | | | | | 1987-2012 | 1987-2012 | 1990-2012 | 1987-2012 | 2000-2012 | 2000-2011 |
| 3310006 | | | | | | | | | | 2003-2012 | |
| 3310005 | | | | | | 1986-2010 | 1985-2012 | 1989-2012 | 1985-2010 | 2001-2010 | 2001 |
| 3310007 | | | | | | 1986-2010 | 1985-2012 | 1989-2012 | 1986-2010 | 2001-2012 | 2000-2012 |
| 3310008 | | | | | | 1993-2011 | 1993-2012 | 1994-2012 | 1993-2011 | 2002-2011 | 2001-2005 |
| 3310020 | | | | | | 1987-2011 | 1986-2012 | 1992-2012 | 1987-2011 | 2004-2011 | 2000-2011 |
| 3310047 | | | | | | | | | | 2002-2012 | |
| 3310048 | | | | | | 1987-2011 | 1987-2012 | 1992-2012 | 1987-2011 | 2000-2011 | 2000-2001 |
| 3310051 | | | | | | 1987-2011 | 1987-2011 | 1998-2011 | 1987-2011 | 2002-2011 | 2000-2004 |
| 3310063 | | | | | | 1987-2012 | 1987-2012 | | 1987-2011 | 2000-2011 | 2000-2001 |
| 3310078 | | | | | | 1993-2011 | 1993-2012 | 1999-2012 | 1993-2011 | 2002-2011 | 2000-2005 |
| 3310081 | | | | | | | | | | 2002-2011 | |

Source: http://geotracker.waterboards.ca.gov/gama/

## Attachment C: Wells Monitored by CVWD

| CVWD Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| 4502-1 | | | 315 | 627 | 251 | 1963-2011 | 1963-2011 | 2004 | 1963-2011 | 1963-2011 | 1963-2011 |
| 4504-1 | | | 600 | 1000 | 273 | 1971-2011 | 1971-2011 | | 1971-2011 | 1971-2011 | 1971-2011 |
| 4507-2 | | | 540 | 850 | 325 | 2008-2011 | 2008-2011 | | 2008-2011 | 2008-2011 | 2008-2011 |
| 4509-1 | | | 1030 | 1310 | 0 | 2003-2009 | 2003-2009 | 2006 | 2003-2009 | 2003-2009 | 2003-2009 |
| 4510-1 | | | 940 | 1300 | 350 | 2003-2011 | 2003-2011 | 2011 | 2003-2011 | 2003-2011 | 2003-2011 |
| 4519-1 | | | 500 | 925 | 318 | 1974-2011 | 1974-2011 | | 1974-2011 | 1974-2011 | 1974-2011 |
| 4520-1 | | | 456 | 835 | 314 | 2008-2011 | 2008-2011 | | 2008-2011 | 2008-2011 | 2008-2011 |
| 4521-1 | | | 500 | 800 | 357 | 2009-2011 | 2009-2011 | | 2009-2011 | 2009-2011 | 2009-2011 |
| 4522-1 | | | 450 | 840 | 397 | 2009-2010 | 2009-2010 | 2009-2010 | 2009-2010 | 2009-2010 | 2009-2010 |
| 4523-1 | | | 430 | 660 | 372 | 2009-2010 | 2009-2010 | | 2009-2010 | 2009-2010 | 2009-2010 |
| 4524-1 | | | 470 | 820 | 354 | 1991-2010 | 1991-2013 | | 1991-2012 | 1991-2010 | 1991-2011 |
| 4525-1 | | | 650 | 1000 | 368 | 1993-2010 | 1991-2010 | | 1991-2010 | 1991-2010 | 1991-2010 |
| 4526-1 | | | 950 | 1200 | 356 | 1999-2010 | 1999-2010 | | 1999-2010 | 1999-2010 | 1999-2010 |
| 4527-1 | | | 850 | 1155 | 297 | 2002-2011 | 2002-2011 | | 2002-2011 | 2002-2011 | 2002-2011 |
| 4562-2 | | | 500 | 900 | 396 | 1962-2010 | 1962-2010 | | 1962-2010 | 1962-2010 | 1962-2010 |
| 4563-1 | | | 520 | 890 | 428 | 1982-2010 | 1982-2010 | | 1982-2010 | 1982-2010 | 1982-2010 |
| 4564-1 | | | 410 | 670 | 397 | 1987-2010 | 1987-2010 | | 1987-2010 | 1987-2010 | 1987-2010 |
| 4565-1 | | | 500 | 900 | 444 | 1987-2010 | 1987-2010 | | 1987-2010 | 1987-2010 | 1987-2010 |
| 4566-1 | | | 500 | 990 | 350 | 2009-2010 | 2009-2010 | | 2009-2010 | 2009-2010 | 2009-2010 |
| 4567-1 | | | 855 | 1150 | 375 | 2002-2011 | 2002-2011 | | 2002-2011 | 2002-2011 | 2002-2011 |
| 4610-1 | | | 1000 | 1300 | 219 | 1999-2011 | 1999-2011 | | 1999-2011 | 1999-2011 | 1999-2011 |
| 4611-1 | | | 840 | 1300 | 186 | 2000-2009 | 2000-2009 | | 2000-2009 | 2000-2009 | 2000-2009 |
| 4613-1 | | | 780 | 1300 | 312 | 2004-2010 | 2004-2010 | | 2004-2010 | 2003-2009 | 2004-2010 |
| 4614-2 | | | 780 | 1300 | 306 | 2004-2010 | 2004-2010 | | 2004-2010 | 2004-2010 | 2004-2010 |
| 4628-2 | | | 755 | 1290 | 207 | 2003-2009 | 2003-2009 | | 2003-2009 | 2003-2009 | 2003-2009 |
| 4629-1 | | | 496 | 796 | 173 | 1979-2010 | 1979-2010 | | 1979-2010 | 1979-2010 | 1979-2010 |

| CVWD Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| 4630-1 | | | 480 | 990 | 243 | 1984-2010 | 1984-2010 | | 1984-2010 | 1984-2010 | 1984-2010 |
| 4631-2 | | | 540 | 940 | 229 | 2000-2011 | 2000-2011 | | 2000-2011 | 2000-2011 | 2000-2011 |
| 4720-1 | | | 500 | 840 | 86 | 1993-2010 | 1993-2010 | | 1993-2010 | 1993-2010 | 1993-2010 |
| 4721-1 | | | 550 | 950 | 90 | 1993-2010 | 1993-2010 | | 1993-2010 | 1993-2010 | 1993-2010 |
| 4722-1 | | | 570 | 1160 | 97 | 2002-2011 | 2002-2011 | | 2002-2011 | 2002-2011 | 2002-2011 |
| 5620-1 | | | 445 | 965 | 180 | 1975-2009 | 1975-2009 | | 1975-2009 | 1975-2009 | 1975-2009 |
| 5623-1 | | | 450 | 780 | 192 | 1979-2009 | 1979-2009 | | 1979-2009 | 1979-2009 | 1979-2009 |
| 5624-1 | | | 650 | 920 | 203 | 2008-2009 | 2008-2009 | | 2008-2009 | 2008-2009 | 2008-2009 |
| 5625-2 | | | 550 | 890 | 184 | 2007-2010 | 2007-2010 | | 2007-2010 | 2007-2010 | 2007-2010 |
| 5629-1 | | | 570 | 970 | 246 | 1987-2010 | 1987-2010 | | 1987-2010 | 1987-2010 | 1987-2010 |
| 5630-1 | | | 455 | 890 | 283 | 1985-2009 | 1985-2009 | | 1985-2009 | 1985-2009 | 1985-2009 |
| 5631-1 | | | 740 | 1010 | 192 | 1985-2010 | 1985-2010 | | 1985-2010 | 1985-2010 | 1985-2010 |
| 5632-2 | | | 820 | 1300 | 145 | 2002-2011 | 2002-2011 | | 2002-2011 | 2002-2011 | 2002-2011 |
| 5639-1 | | | 548 | 872 | 151 | 2008-2011 | 2008-2011 | | 2008-2011 | 2008-2011 | 2008-2011 |
| 5656-1 | | | 450 | 930 | 197 | 1987-2010 | 1987-2010 | | 1987-2010 | 1987-2010 | 1987-2010 |
| 5657-1 | | | 420 | 720 | 118 | 1988-2009 | 1988-2009 | | 1988-2009 | 1988-2009 | 1988-2009 |
| 5658-1 | | | 480 | 850 | 183 | 2009-2009 | 2009-2009 | | 2009-2009 | 2009-2009 | 2009-2009 |
| 5659-1 | | | 550 | 890 | 180 | 1989-2009 | 1989-2009 | | 1989-2009 | 1989-2009 | 1989-2009 |
| 5662-1 | | | 625 | 925 | 200 | 1996-2011 | 1996-2011 | | 1996-2011 | 1996-2011 | 1996-2011 |
| 5664-1 | | | 500 | 930 | 151 | 2009-2009 | 2009-2009 | | 2009-2009 | 2009-2009 | 2009-2009 |
| 5667-1 | | | 470 | 800 | 188 | 1993-2010 | 1993-2010 | | 1993-2010 | 1993-2010 | 1993-2010 |
| 5668-1 | | | 520 | 900 | 173 | 1994-2009 | 1994-2009 | | 1994-2009 | 1994-2009 | 1994-2009 |
| 5669-1 | | | 500 | 980 | 170 | 1993-2009 | 1993-2009 | | 1993-2009 | 1993-2009 | 1993-2009 |
| 5670-1 | | | 570 | 930 | 195 | 1995-2010 | 1995-2010 | | 1995-2010 | 1995-2010 | 1995-2010 |
| 5671-2 | | | 550 | 990 | 200 | 1994-2009 | 1994-2009 | | 1994-2009 | 1994-2009 | 1994-2009 |
| 5672-1 | | | 680 | 1010 | 211 | 1997-2009 | 1997-2009 | | 1997-2009 | 1997-2009 | 1997-2009 |
| 5673-1 | | | 740 | 1000 | 203 | 1997-2009 | 1997-2009 | | 1997-2009 | 1997-2009 | 1997-2009 |

| CVWD Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| 5675-1 | | | 670 | 790 | 201 | 1999-2011 | 1999-2011 | | 1999-2011 | 1999-2011 | 1999-2011 |
| 5676-1 | | | 1000 | 1300 | 0 | 2003-2009 | 2003-2009 | | 2003-2009 | 2003-2009 | 2003-2009 |
| 5677-1 | | | 900 | 1260 | 267 | 1999-2011 | 1999-2011 | | 1999-2011 | 1999-2011 | 1999-2011 |
| 5678-1 | | | 1000 | 1300 | 261 | 1999-2011 | 1999-2011 | | 1999-2011 | 1999-2011 | 1999-2011 |
| 5679-1 | | | 900 | 1305 | 135 | 2000-2009 | 2000-2009 | | 2000-2009 | 2000-2009 | 2000-2009 |
| 5680-1 | | | 1000 | 1300 | 215 | 2000-2009 | 2000-2009 | | 2000-2009 | 2000-2009 | 2000-2009 |
| 5681-1 | | | 900 | 1200 | 164 | 2000-2009 | 2000-2009 | | 2000-2009 | 2000-2009 | 2000-2009 |
| 5682-1 | | | 850 | 1300 | 242 | 2000-2003 | 2000-2003 | | 2000-2003 | 2000-2003 | 2000-2003 |
| 5701-1 | | | 900 | 1270 | 46 | 1999-2011 | 1999-2011 | | 1999-2011 | 1999-2011 | 1999-2011 |
| 5708-1 | | | 450 | 970 | 90 | 1989-2011 | 1989-2011 | | 1989-2011 | 1989-2011 | 1989-2011 |
| 5709-1 | | | 480 | 840 | 77 | 1990-2011 | 1990-2011 | | 1990-2011 | 1990-2011 | 1990-2011 |
| 5711-1 | | | 450 | 850 | 58 | 2002-2011 | 2002-2011 | | 2002-2011 | 2002-2011 | 2002-2011 |
| 5714-1 | | | 900 | 1270 | 81 | 1999-2011 | 1999-2011 | | 1999-2011 | 1999-2011 | 1999-2011 |
| 5715-1 | | | 840 | 1380 | 56 | 2000-2009 | 2000-2009 | | 2000-2009 | 2000-2009 | 2000-2009 |
| 5716-1 | | | 900 | 1200 | 61 | 2003-2009 | 2003-2012 | | 2003-2011 | 2000-2009 | 2003-2010 |
| 5717-1 | | | 915 | 1123 | 0 | 2003-2009 | 2003-2009 | | 2003-2009 | 2003-2009 | 2003-2009 |
| 5718-1 | | | 940 | 1480 | 0 | 2003-2009 | 2003-2009 | | 2003-2009 | 2003-2009 | 2003-2009 |
| 5720-1 | | | 540 | 860 | 111 | 1993-2010 | 1993-2010 | | 1993-2010 | 1993-2010 | 1993-2010 |
| 5721-1 | | | 1010 | 1210 | 0 | 1999-2011 | 1999-2014 | | 1999-2013 | 1999-2011 | 1999-2012 |
| 5725-1 | | | 1130 | 1430 | 0 | 2004-2010 | 2004-2010 | | 2004-2010 | 2004-2010 | 2004-2010 |
| 5727-1 | | | 930 | 1440 | 0 | 2004-2010 | 2004-2010 | | 2004-2010 | 2004-2010 | 2004-2010 |
| 6701-1 | | | 580 | 800 | 40 | 1982-2010 | 1982-2010 | | 1982-2010 | 1982-2010 | 1982-2010 |
| 6723-1 | | | 350 | 800 | -6 | 1989-2009 | 1989-2009 | | 1989-2009 | 1989-2009 | 1989-2009 |
| 6724-1 | | | 350 | 740 | -18 | 1991-2009 | 1991-2009 | | 1991-2009 | 1991-2009 | 1991-2009 |
| 6725-1 | | | 360 | 840 | 0 | 2001-2010 | 2001-2010 | | 2001-2010 | 2001-2010 | 2001-2010 |
| 6726-1 | | | 640 | 1160 | -64 | 2003-2009 | 2003-2009 | | 2003-2009 | 2003-2009 | 2003-2009 |
| 6728-1 | | | 500 | 750 | -78 | 2003-2009 | 2003-2009 | | 2003-2009 | 2003-2009 | 2003-2009 |

| CVWD Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| 6805-1 | | | 490 | 950 | -95 | 1996-2011 | 1996-2014 | | 1996-2013 | 1996-2011 | 1996-2012 |
| 7802-1 | | | 245 | 990 | 0 | 2002-2011 | 2002-2011 | | 2002-2011 | 2002-2011 | 2002-2011 |
| 7803 | | | 250 | 710 | 119 | 2003-2009 | 2003-2009 | | 2003-2009 | 2003-2009 | 2003-2009 |

Source: CVWD

**Attachment D: Existing Wells Monitored within Mission Creek and Garnet Hill Subbasins**

| Sub-basin | Owner | Owner's Well Number | Monitored for Levels | Frequency | Monitored for Quality | Frequency |
|---|---|---|---|---|---|---|
| DHS | MSWD | 8 | Yes[1] | 2 per year | ? | -- |
| DHS | MSWD | 5 | Yes[1] | 2 per year | ? | |
| DHS | Howard | | Yes | 3 per year | No | -- |
| DHS | Dorothy & Orville Smith | | Yes | 3 per year | No | -- |
| DHS | Erwin And Assoc. | | Yes | 3 per year | No | -- |
| DHS | Johnson | | Yes | 3 per year | No | -- |
| DHS | Tru Wall Const. | | Yes | 3 per year | No | -- |
| DHS | Knudsen | | Yes[1] | 3 per year | No | -- |
| DHS | William W. Tarbutton | | Yes | 3 per year | No | -- |
| DHS | Manthei Bros. | | Yes[1] | 3 per year | No | -- |
| DHS | Honig | | Yes[1] | 3 per year | No | -- |
| DHS | M. J. Grieshaber | | Yes | 3 per year | No | -- |
| MC | DWA | Mission Creek Monitoring Well | Yes | Monthly | No | -- |
| MC | MSWD | 23 | Yes[1] | Monthly | Yes | Triennially[2] |
| MC | MSWD | 30 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 28 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 34 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 35 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 22 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 24 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 29 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 37 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 32 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 27 | Yes | Monthly | Yes | Triennially[2] |
| MC | MSWD | 31 | Yes | Monthly | Yes | Triennially[2] |
| MC | CVWD | 3406 | No | -- | No | -- |

| Sub-basin | Owner | Owner's Well Number | Monitored for Levels | Frequency | Monitored for Quality | Frequency |
|---|---|---|---|---|---|---|
| MC | CVWD | 3408 | Yes[1] | 3 per year | Yes | Triennially[2] |
| MC | CVWD | 3405 | Yes | 3 per year | Yes | Triennially[2] |
| MC | CVWD | 3410 | Yes | 3 per year | Yes | Triennially[2] |
| MC | CVWD | 3409 | Yes | 3 per year | Yes | Triennially[2] |
| MC | KLATT | | Yes | 3 per year | No | -- |
| MC | CVWD (?) | 3518 | Yes1 | 3 per year | No | -- |
| MC | Desert Dunes Golf Course | 1 | Yes | 3 per year | Yes | Every six years |
| MC | Cronholm | | Yes | 3 per year | No | -- |
| GH | Duryea | | Yes | 3 per year | No | -- |
| GH | Unknown | | Yes | 3 per year | No | -- |
| GH | MSWD | 33 | Yes | Monthly | Yes | Triennially[2] |
| GH | Valley View MWC | | Yes | 3 per year | No | -- |
| GH | Margolias | | Yes | 3 per year | Yes | Periodically |
| GH | Frank Mack | | Yes | 3 per year | Yes | Periodically |
| GH | Jack in the Box | | No | -- | Yes | Periodically |

Source: MWH, 2013

DHS: Desert Hot Springs Sub-basin
MC: Mission Creek Sub-basin
GH: Garnet Hill Subbbasin

CVWD – Coachella Valley Water District
MSWD – Mission Springs Water District
DWA – Desert Water Agency

1 – CASGEM Well
2 – CDPH requires triennial monitoring for general minerals, metals, radiological and regulated organics (VOCs and SOCs) and annual monitoring of nitrate

## Attachment E: Wells Monitored by USGS

| USGS Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| COA-01 | | | | | | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-02 | | | 230 | 480 | -221 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-03 | 1070 | | | | 147 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-04 | 1090 | | 500 | 1060 | 79 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-05 | 654 | | 710 | 1090 | 237.23 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-06 | 240 | | 203 | 654 | 52.2 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-07 | 342 | | | | 2 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-08 | | | 258 | 342 | -16 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-09 | | | | | 392 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-10 | | | | | 106 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-11 | | | | | -110 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-12 | 525 | | 445 | 525 | -173 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-13 | | | | | | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-14 | 820 | | 420 | 820 | 232 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-15 | 400 | | 180 | 380 | 872 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-16 | 650 | | 300 | 650 | 477 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-17 | | | | | 2475 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-18 | 790 | | 280 | 790 | 43 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COA-19 | | | | | 1063 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-01 | 96 | | 12 | 43 | 2218 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-02 | 600 | | 288 | 600 | 382 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-03 | | | | | 332 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-04 | 400 | | 280 | 400 | 2 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-05 | 909 | | 306 | 906 | 1175 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-06 | | | | | | 2007 | 2007 | 2007 | 2007 | 2007 | |

| USGS Well No. | Depth Drilled (feet) | Depth Cased (feet) | Depth of Top Perf. (feet) | Depth of Bottom Perf. (feet) | Land Surface Elevation | Period of Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Arsenic | Nitrate | Uranium | Fluoride | Perchlorate | Hexavalent Chromium |
| COAU-07 | 553 | | 225 | 553 | 1353 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-08 | 730 | | 476 | 726 | 499.42 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-09 | | | | | 183 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-10 | 1070 | | 410 | 1050 | 1016 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-11 | 400 | | 220 | 400 | 589 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-12 | | | | | | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-13 | | | | | 171 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-14 | 550 | | 330 | 530 | 62 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-15 | 700 | | 400 | 700 | 344 | 2007 | 2007 | 2007 | 2007 | 2007 | |
| COAU-16 | | | | | -3 | 2007 | 2007 | 2007 | 2007 | 2007 | |

Source: USGS, 2009

**Attachment F: Proposed Wells for Monitoring by Mission Creek and Garnet Hill Subbasins WMP**

| Sub-basin | Owner[1] | Status | Purpose | Comment |
|---|---|---|---|---|
| MC | Will Claiborne | 926 ft deep, drilled 1989 | Subsurface inflow upstream of recharge basin | Mission Creek West of SR 62 and Indian |
| MC | TW Burnham | Unknown | Subsurface inflow from Mission Creek | Mission Creek 2 mi NW of SR 62 |
| MC | Mrs A K Walters | Drilled 1965 | Subsurface inflow from Mission Creek | Mission Creek 2 mi NW of SR 62 |
| MC | TW Burnham | Unknown | Subsurface inflow from Mission Creek | Mission Creek 1 mi NW of SR 62 |
| MC | Norman Lamaroux | Unknown | Improved water level contours between MSWD's Wells 35 and 24 | Select one of these wells |
| MC | Edwards | Unknown, drilled 1966 | | |
| MC | Snellenberger (?) | Unknown; Not in CVWD records | Subsurface inflow and water level west of SR 62 | West of SR 62 near Pierson |
| MC | Park West Mobil Park | Well deepened to 495 ft | Improved water level contours west of MSWD's Well 37 | Select one of these wells |
| MC | MSWD – Well 13 | May be dry – capped per CVWD records | | |
| MC | MSWD Airport | ? | CASGEM Well – improved water level contours | Recent MSWD acquisition, only levels are monitored monthly |
| MC | CPV Sentinel | New well; not in CVWD records | Improved water level contours west of Indian Ave. | Recently constructed; SWN unknown |
| MC | Dr Aiken/USGS[2] | Unknown | Improved water level contours near Mission Creek fault | May be monitored by USGS |
| MC | Klatt | Unknown | Improved water level contours near Mission Creek fault | Near Mission Creek fault |
| MC | Mr O Scarcelli | Unknown, drilled 1978 | Improved water level contours near Banning fault | Select one of these wells |
| MC | Durst | Unknown, drilled 1978 | | |
| MC | Jay Schultz | Unknown, drilled 2003 | Improved water level contours near Mission Creek fault in Willow Hole area | Select one well from this group |
| MC | Mary Herzog | Unknown, drilled 1970 | | |
| MC | Ron Studebacker | Unknown, drilled 1978 | | |
| MC | Charles Ross | Unknown, drilled 1978 | | |
| MC | James Stanley | Unknown | | |
| MC | Blanche Kelly | Unknown, drilled 1991 | | |
| MC | Peterson | Unknown, old log | | |

| Sub-basin | Owner[1] | Status | Purpose | Comment |
|---|---|---|---|---|
| MC | Leon Mason | Inactive per CVWD records | Improved water level contours in Willow Hole area | Select one well from this group |
| MC | Tom Svenneby | Unknown, drilled 1981 | | |
| MC | John Guldseth | Unknown, drilled 1983 | | |
| MC | William Stapely | Unknown, no log | | |
| MC | William Stapely | Unknown | | |
| MC | Keith McGraw | Unknown, drilled 2000 | | |
| MC | John Barker | Unknown, drilled 1981 | | |
| MC | M G Astleford | Unknown, drilled 1981 | | |
| GH | Bill Adams | Unknown, drilled 1997 | Improved water level contours near Banning fault south of Devers Hills | |
| GH | Indigo Power Plant | Location uncertain, no log in CVWD records | Improved water level contours west of Indian Ave. | SWN unknown |

Source: MWH, 2013

DHS: Desert Hot Springs Sub-basin
MC: Mission Creek Sub-basin
GH: Garnet Hill Subbbasin

CVWD – Coachella Valley Water District
MSWD – Mission Springs Water District

1 – Name of the well owner based on CVWD master well records for the Coachella Valley.
2 – Well shown in CASGEM database as monitored by USGS. No data available.

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