

# INTEGRATED REGIONAL WATER MANAGEMENT

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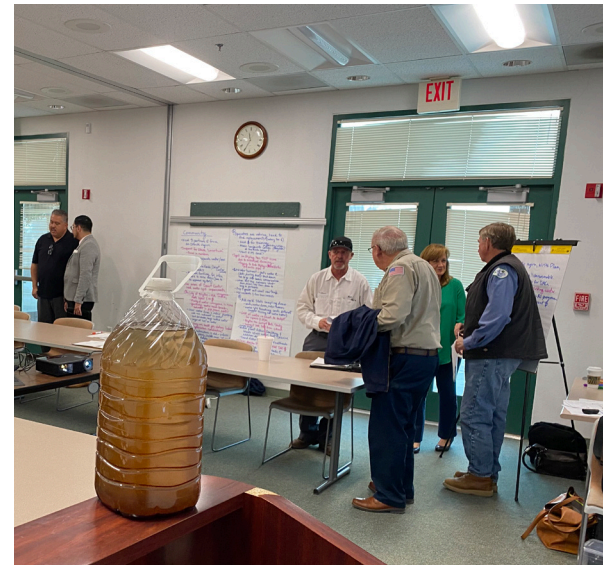
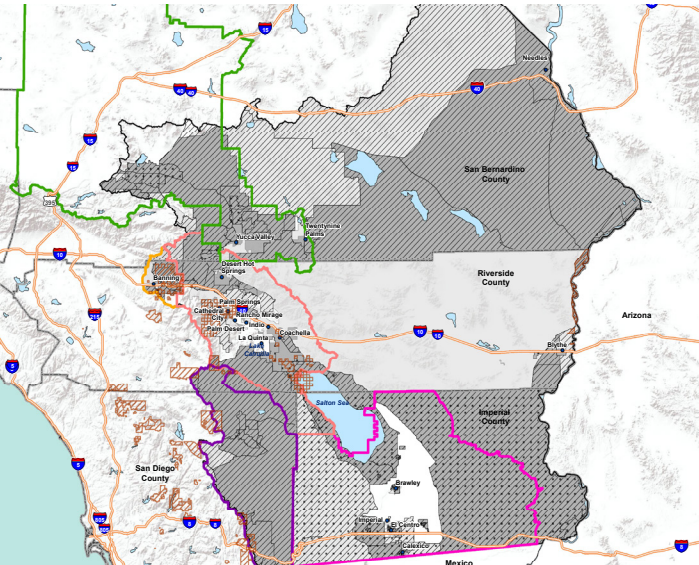
# COLORADO RIVER FUNDING AREA

# WATER NEEDS ASSESSMENT

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FINAL

JULY 2020



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Prepared by the Colorado River Funding Area Partners



**Mojave IRWM Plan**  
Integrated Regional Water Management Plan

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# Colorado River Funding Area Water Needs Assessment

July 27, 2020

*FINAL*

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Prepared by Woodard & Curran for the Colorado River Funding Area Partners



## Table of Contents

<b>ACRONYMS AND ABBREVIATIONS .....</b>	<b>5</b>
<b>1 INTRODUCTION.....</b>	<b>7</b>
1.1 INTEGRATED REGIONAL WATER MANAGEMENT PROGRAM .....	7
1.2 DISADVANTAGED COMMUNITY INVOLVEMENT PROGRAM .....	10
1.3 WATER NEEDS ASSESSMENT.....	11
1.4 DEFINITIONS.....	11
<b>2 METHODS.....</b>	<b>12</b>
2.1 DAC MAPPING IN THE CRFA.....	12
2.2 COMMUNITY OUTREACH AND ENGAGEMENT.....	14
2.3 SUCCESS OF METHODS.....	18
<b>3 CRFA DAC NEEDS.....</b>	<b>19</b>
3.1 FUNDING AREA CHARACTERISTICS.....	19
3.2 WATER NEEDS BY REGION .....	27
<b>4 FINDINGS .....</b>	<b>59</b>
4.1 SUMMARY OF CRFA DAC NEEDS .....	59
4.2 SUMMARY OF IRWM BARRIERS AND OPPORTUNITIES .....	62
4.3 OPPORTUNITIES TO ADDRESS BARRIERS TO PARTICIPATION AND DAC NEEDS.....	63
<b>5 CONCLUSION .....</b>	<b>64</b>



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## Acronyms and Abbreviations

1,2,3 -TCP	1-2-3 Trichloropropane
ACS	American Community Survey
BWD	Borrego Water District
CRA	Colorado River Aqueduct
CRFA	Colorado River Funding Area
CSA	County Service Area
CV	Coachella Valley
CVRWVG	Coachella Valley Regional Water Management Group
CVWD	Coachella Valley Water District
DAC	Disadvantaged Community
DACI	Disadvantaged Community Involvement
DWR	Department of Water Resources
EDD	Employment Development Department
EDA	Economically Distressed Area
GAMA	Groundwater Ambient Monitoring and Assessment Program
IID	Imperial Irrigation District
IRWM	Integrated Regional Water Management
IRWMP	Integrated Regional Water Management Plan
MCL	Maximum Contaminant Level
MHI	Median Household Income
MWA	Mojave Water Agency
MWD	Metropolitan Water District of Southern California
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
OEHHA	Office of Environmental Health Hazard Assessment
O&M	Operation and Maintenance
Prop	Proposition
RWVG	Regional Water Management Group
SCAG	Southern California Association of Governments
SDAC	Severely Disadvantaged Community
SWP	State Water Project

SWRCB	State Water Resources Control Board
SWRP	Storm Water Resources Plan
TDS	Total Dissolved Solids
TMF	Technical, Managerial, Financial
TT	Treatment Technique
U.S. EPA	United States Environmental Protection Agency
URC	Underrepresented Community
UWMP	Urban Water Management Plan

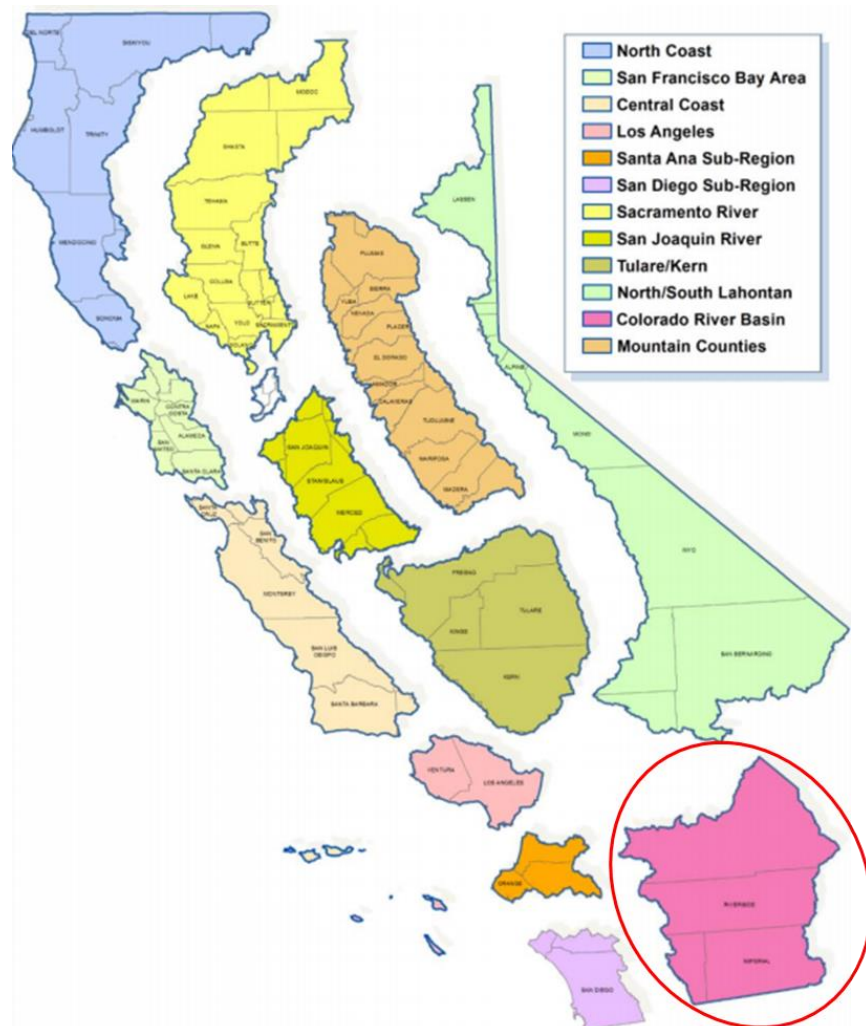
# 1 Introduction

## 1.1 Integrated Regional Water Management Program

Integrated Regional Water Management (IRWM) is a statewide initiative to encourage water management using a collaborative approach to identify and implement water management solutions on a regional scale. IRWM aims to develop long-term water supply reliability, improve water quality, protect natural resources, and enhance resiliency to climate change for local water resources. Since the beginning of statewide IRWM efforts, funding has been made available by the California Department of Water Resources (DWR) for IRWM planning and projects through three voter-approved

water bonds: Proposition 50, Proposition 84, and Proposition 1. Bond language in Propositions 84 and 1 divided the state into 12 Funding Areas, each of which may contain multiple IRWM Planning Regions that compete for grant funds.

Through Proposition 1, the Colorado River Funding Area (CRFA) was allocated \$22.5 million dollars to fund projects and programs that support integrated water management. The location of the Funding Area can be seen on the right. Through the Proposition 1 Grant Program, the IRWM Program aims to assist water infrastructure systems adapt to climate



The Colorado River Funding Area is in the Southeastern corner of California.  
Source: DWR Proposition 1 Fact Sheet<sup>1</sup>

<sup>1</sup> DWR Proposition 1 Fact Sheet:  
[https://water.ca.gov/LegacyFiles/irwm/grants/docs/P1Index/IRWM\\_FundingAreaFactSheet121714.pdf](https://water.ca.gov/LegacyFiles/irwm/grants/docs/P1Index/IRWM_FundingAreaFactSheet121714.pdf)

change, provide incentives for water agency collaboration, and improve regional water self-reliance.

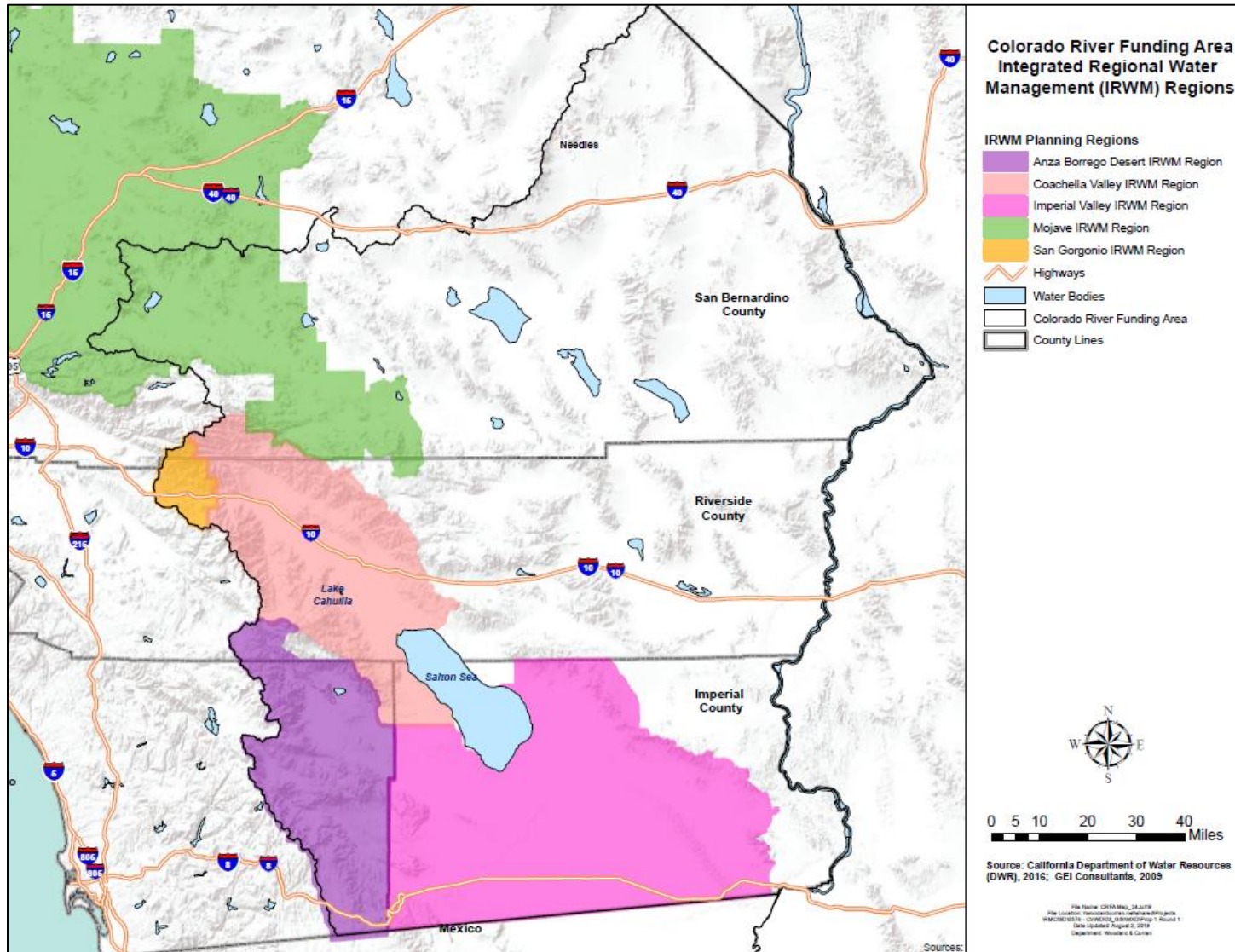
The Colorado River Funding Area (CRFA) covers portions of San Bernardino, Riverside, San Diego, and Imperial counties. The CRFA includes five IRWM Regions – Anza Borrego Desert, Coachella Valley, Imperial, Mojave, and San Gorgonio pictured in Figure 1 – each of which is managed by its respective Regional Water Management Group (RWMG).

- **Anza Borrego Desert IRWM** is led by a RWMG comprising Borrego Water District, Resource Conservation District of Greater San Diego County, and the County of San Diego. The Anza Borrego Desert IRWM Plan was completed in 2009 (<http://www.bvgsp.org/historical-reports.html>).
  - This IRWM Region does not have an updated IRWM Plan and is no longer considered active.
- **Coachella Valley IRWM** is led by a RWMG comprising Coachella Water Authority, Coachella Valley Water District, Desert Water Agency, Indio Water Authority, Mission Springs Water District, and Valley Sanitary District. The Coachella Valley IRWM Plan was updated in 2018 (<http://www.cvrwmg.org/>).
- **Imperial IRWM** is led by a RWMG comprising Imperial Irrigation District, Imperial County, and Imperial Region cities, which include Brawley, El Centro, Imperial, Westmorland, Calipatria, Niland, Seeley, Heber, Calexico, Naval Air Facility El Centro, and Holtville. The Imperial IRWM Plan was completed in 2012 (<https://imperialirwmp.org/>).
  - This IRWM Region does not have an updated IRWM Plan and is no longer considered active.
- **Mojave IRWM** is led by a RWMG comprising Mojave Water Agency, Victor Valley Wastewater Reclamation Authority, Technical Advisory Committee to the Mojave Water Agency, Mojave Desert Resource Conservation District, and Morongo Basin Pipeline Commission. The Mojave IRWM Plan was updated in 2018 (<https://www.mywaterplan.com/>).
- **San Gorgonio IRWM** is led by a RWMG comprising the City of Banning, Banning Heights Mutual Water Company, Cabazon Water District, High Valleys Water District, Riverside County Flood Control and Water Conservation District, and San Gorgonio Pass Water Agency. The San Gorgonio IRWM Plan was first completed in 2018 (<https://www.sgirwm.org/>).

The CRFA also includes a large area, spanning the eastern portions of San Bernardino, Riverside, and Imperial counties, that is unaffiliated with any existing IRWM region. This area is referred to as the Eastern Counties region in this report.

For the Disadvantaged Community Involvement (DACI) round of the Proposition 1 Grant Program, the CRFA RWMGs collaborated on a joint grant application and award. Members of each RWMG (CRFA Partners) worked together on grant execution and completion of this CRFA Water Needs Assessment.

Figure 1: CRFA IRWM Regions



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## 1.2 Disadvantaged Community Involvement Program

The Water Quality, Supply, and Infrastructure Improvement Act of 2014, known as Proposition 1 and administered by DWR, provides funding for projects that will improve water supply reliability and create a more sustainable water system. DWR established the Disadvantaged Community Involvement Program (DACI Program) to support disadvantaged communities (DACs), communities in economically distressed areas (EDAs), or underrepresented communities (URCs).<sup>2</sup> This document refers to these communities jointly as DACs, unless otherwise specified.

The primary objectives of the DACI Program are to:

- Determine DAC water management needs across the CRFA;
- Engage and involve DACs in defining their water management needs and determine how to support ongoing DAC involvement in IRWM programs over the long term; and,
- Clarify key priorities that are necessary to address deficiencies in DAC water, wastewater, stormwater, and flood control systems.

Approximately \$2.6 million was awarded to the CRFA for identifying DACs and their needs, increasing DAC involvement in the five IRWM Regions and unaffiliated Eastern Counties region, and supporting DACs in completing planning for future capital projects. IRWM Regions in the CRFA together issued a Call for Projects for DAC planning projects in 2016.<sup>3</sup> Through this Call for Projects, ten DACI Program projects were identified, submitted to DWR, and funded in the CRFA. Projects currently funded through the DACI grant are diverse and may include multiple smaller projects under one larger project. Funded projects include but are not limited to:

- Water pipeline replacement and booster stations (4 projects/sub-tasks)
- Sewer connections/extensions (3 projects/sub-tasks)
- Water quality (uranium, salt and nutrients, chromium) (3 projects/sub-tasks)
- Master plan, engineering report, environmental compliance (3 projects/sub-tasks)

Additionally, a Call for Projects for additional projects in the San Gorgonio IRWM Region and non-IRWM areas was issued in March 2020. Project needs identified during the Call for Projects are included in Appendix E.

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<sup>2</sup> DACs and EDAs are considered DAC if they meet MHI and economic criteria described in *Section 1.5 Definitions* and are eligible for cost-share waivers in IRWM grant funding

<sup>3</sup> Under Proposition 1, Round 1, a DAC project is a regular project that serves at least 75% of a DAC, EDA, or tribal community. These projects have the same requirements as other IRWM projects but may have accommodations for support.



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## 1.3 Water Needs Assessment

In addition to funding at least ten DAC projects in the CRFA, this round of funding included the development of this joint Water Needs Assessment. The goals of the Water Needs Assessment are two-fold:

- 1) Identify DAC communities throughout the CRFA; and
- 2) Identify and characterize water-related issues and needs of identified communities.

The purpose of the Water Needs Assessment is to better understand CRFA DACs, especially in the non-IRWM Eastern Counties areas. This Water Needs Assessment builds on existing information on DAC Needs found in each regions' IRWM Plan and relies on outreach to understand the needs of DACs in non-IRWM areas. This Water Needs Assessment distills the water management needs of DACs in each IRWM Region to provide a better understanding of the needs of the communities and to develop funding priorities, which may help direct resources and funding where specifically needed.

The Water Needs Assessment seeks to characterize the needs of DACs in non-IRWM areas, specifically, the Eastern Counties area that has not been involved in the IRWM Program but is 95% DAC by population. To achieve this goal, the Water Needs Assessment collected information through a short questionnaire and community meetings. Outreach methods are described further in *Section 2.2: Community Outreach and Engagement*.

Overall, 48% of organizations contacted through this effort chose to participate through the questionnaire or community meetings. The outcomes of this Water Needs Assessment reflect the responses of participants, and while considered representative of some needs faced by DACs, it is not considered to be an exhaustive characterization of all DAC needs in the CRFA. The scope of the Water Needs Assessment did not include a process to verify the identified needs, recognizing that communities themselves have direct knowledge and experience that enables them to identify their needs best. As a result, water needs summarized from community outreach reflect the perceptions and biases of its participants.

## 1.4 Definitions

DWR defines DACs and EDAs in the Water Code and Proposition 1 bond language. According to the Proposition 1 bond language in Section 79742(d), at least 10% of IRWM Grant Program funding shall be allocated to projects that directly benefit DACs through a set-aside. The following definitions were used in the CRFA:

**Disadvantaged Communities (DACs):** DACs are defined by DWR in Section 79505.5 of the Water Code as census geographies with an annual Median Household Income (MHI) of less than 80% of the statewide MHI (DWR and State Board, 2016). Severely Disadvantaged Communities (SDAC) are defined as census geographies having less than 60% of the statewide annual MHI. For the purpose of this Water Needs Assessment, the statewide MHI of \$63,783 from the 2012-2016 American Community Survey (ACS) was used. Therefore, communities with an MHI below \$51,026

were considered DAC (80% of statewide MHI), and an MHI below \$38,270 were considered SDAC (60% of statewide MHI).

**Economically Distressed Area (EDA):** Also defined by DWR in Section 79702(k) of the Prop 1 bond language, an EDA is a municipality with a population of 20,000 people or less, a rural county, or a reasonably isolated and divisible segment of a larger municipality with a population of 20,000 people or less, with a MHI that is less than 85% of the statewide MHI, and with one or more of the following conditions:

- 1) **Financial hardship:** Less than 85% of the *local* MHI.
- 2) **Unemployment rate at least 2% higher than statewide average:** A statewide average unemployment rate from April 2018 (4.2%) was used in this analysis.
- 3) **Low population density:** Less than 100 people per square mile, consistent with DWR's EDA mapping tool's methodology.

**Underrepresented Communities (URCs):** DWR does not define URCs, but they are considered to have little or no representation in water policy decision-making and/or water resource management projects. All Native American Tribes are considered underrepresented under the state's IRWM Program, regardless of their economic status.

This Water Needs Assessment focuses only on DACs (including SDACs), EDAs, and Tribes as these communities can be easily mapped.

## 2 Methods

The Water Needs Assessment first determined the location of DACs in the CRFA. Mapping DACs in the CRFA helped focus outreach and engagement efforts. This Water Needs Assessment focused outreach on the Eastern Counties region as it was previously uncharacterized by IRWM efforts. Outreach was conducted through email, phone, questionnaires, and in-person community meetings. Methods for both mapping and outreach are described in more detail below.

### 2.1 DAC Mapping in the CRFA

The first task of the Water Needs Assessment was mapping and analyzing where DACs, EDAs, and URCs are located throughout the CRFA. To identify DACs, the consultant team mapped DACs and EDAs using available U.S. Census data.

Demographic data from the U.S. Census Bureau 2016 American Community Survey 5-Year Estimates (ACS; 2012-2016) and the California Employment Development Department (EDD) were used to identify DAC, SDAC, and EDA areas within the CRFA. MHI and population data were collected through ACS estimates, and unemployment rate data was collected through EDD.

Three census geography types were used to evaluate DAC status: census tracts, block groups, and census-designated places. Areas were classified as disadvantaged if any one of the three geography types qualified under their given definitions. U.S. Census Bureau TIGER (Topologically

Integrated Geographic Encoding and Referencing)/Line) Shapefiles were used to extract geographic boundaries of the three geography types and allowed for the results of the DAC needs assessment to be mapped spatially in GIS (Geographic Information System). Table 1 summarizes core project data, data sources, and available geographies.

**Table 1: DAC Map Data Sources**

Variable	Source	Census Geographies
MHI	Income data were collected through the American Community Survey 5-Year Estimates dataset (2012-2016), table B19013, "Median Household Income in the Past 12 Months (in 2016 Inflation-Adjusted Dollars)" (U.S. Census Bureau)	Census tracts Block groups Census-designated places
Total Population	Population data were collected through the American Community Survey 5-Year Estimates dataset (2012-2016), table B01003, "Total Population" (U.S. Census Bureau)	Census tracts Block groups Census-designated places
Unemployment Rate	Unemployment rate data were collected through the California Employment Development Department Monthly Labor Force for Cities and Census Designated Places Data Report (April 2018)	Census-designated places <sup>1</sup>
Census Geography Spatial Extent	TIGER/Line Shapefiles were used to map spatial extent of 2016 census tracts, block groups, and census-designated places (U.S. Census Bureau)	Census tracts Block groups Census-designated places

<sup>1</sup> Census tracts and block groups not available

2016 Census data were utilized in this Water Needs Assessment, consistent with the DAC Mapping Tool developed by DWR (<https://gis.water.ca.gov/app/dacs/>) for use in the IRWM program. The Proposition 1 2016 IRWM Program Guidelines recommend the use of this tool and request users check the tool prior to submitting applications to verify that current information is being used. The tool is updated as newer ACS data sets become available and currently utilizes 2016 ACS data.

TIGER/Line Shapefiles were also used to identify EDAs qualifying under Criteria #3 ("Low Population Density") by providing parcel area (in square miles), which allowed for the calculation of persons per square mile, one of the defining criteria of the EDA.

URC communities were not added to the map as they are communities that have little or no representation in water policy and/or water resource management projects and cannot be mapped using MHI or economic data. However, Tribes are considered URCs by DWR, therefore tribal lands were included on the map.

## 2.2 Community Outreach and Engagement

The second task of the Water Needs Assessment consisted of gathering information on how the five IRWM Regions have identified DAC needs and engaged DACs both within their IRWM Regions and in non-IRWM areas (Eastern Counties). The CRFA Partners contributed to compiling a contact list of organizations and contacts in non-IRWM areas for outreach as part of this Water Needs Assessment. A total of 58 organizations were contacted with multiple points of contact at each organization.

Two separate presentations were held, and participants were encouraged to participate in the Water Needs Assessment via email and phone. A complete breakdown of outreach activities is seen to the right. A total of 65 individuals representing 28 organizations, in addition to community members, engaged with this Water Needs Assessment in some form. This includes members of current IRWM regions.

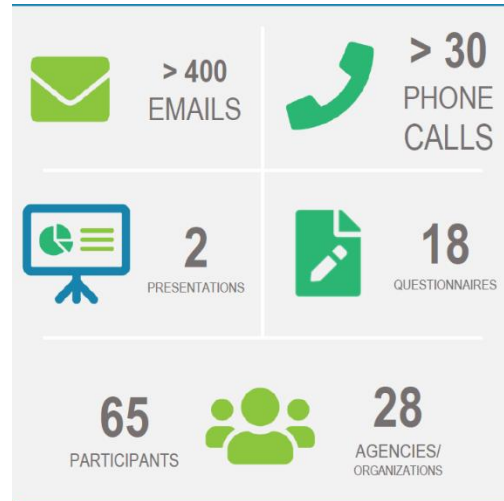


Table 2 below illustrates the composition of respondents who were engaged in a qualitative way throughout the process, either through a community meeting or via the questionnaire. Some organizations participated in both a community workshop and questionnaire, resulting in the repetition of four individuals in the table below. The total of 65 individuals that participated in the Water Needs Assessment was adjusted accordingly. Community meetings represented the greatest number of stakeholders.

**Table 2: Composition of Individuals Engaged by the Water Needs Assessment Process**

Respondent	Community Workshop	Questionnaire
Water district, system, utility, or company	16	3
City or County	12	5
College	1	2
Community-based organization	4	3
Community member	6	3
Tribal community representative	1	2
State agency	4	-
Federal government	5	-
<b>Total Individuals (65)</b>	<b>51</b>	<b>18</b>

The following sections describe the utilized methods of engagement and the locations of participating individuals. These locations are summarized to keep the exact identity of participants anonymous. Engagement opportunities are described in more detail below.

## 2.2.1 Water Needs Questionnaire

The outreach strategy included distributing an online Water Needs Questionnaire to the Eastern Counties region to collect data requested by DWR as part of the Water Needs Assessment. Hard copies of the questionnaire were also made available to stakeholders at community meetings.

Questionnaire responses have been summarized for the purpose of anonymity and can be found in Appendix B. This table is provided in DWR's Proposition 1 IRWM DAC Involvement Proposal Solicitation Package. A copy of the distributed questionnaire can be found in Appendix C.

The image shows a screenshot of a questionnaire titled "Water Needs Assessment Questionnaire 2019" from the Colorado River Funding Area. The form includes a thank-you message, instructions on how to provide feedback (online or via email), and several questions. One question asks for the name of the community or organization. Another asks for the region, with a list of options: Eastern San Bernardino County, Eastern Riverside County, Eastern Imperial County, Mojave IRWM Region, San Gorgonio IRWM Region, Coachella Valley IRWM Region, Anza Borrego Desert IRWM Region, and Imperial Valley IRWM Region. A third question asks if the respondent has ever been engaged in an IRWM program or public project, with "Yes" and "No" options. The final question asks for defining characteristics of the community to be shared.

The Water Needs Questionnaire included 3 pages of questions related to general water, drinking water, wastewater, stormwater and financing needs.

In total, 18 questionnaires and written feedback were completed and submitted. Questionnaires were received from stakeholders in both active IRWM Regions and in the Eastern Counties:

- 11 respondents from Eastern Counties (San Bernardino, Riverside, and Imperial Counties including Tribes)
- 7 respondents from current IRWM Regions (Coachella Valley and San Gorgonio IRWM Regions)

Participants in the CRFA Water Needs Assessment were asked the following questions about water needs in their community:

1. Currently and historically, what are this community's most significant water challenges?
2. What do you see as the most pressing water challenge this community will face in the next 5 years? 10 years?
3. Do you consider climate change to be a threat to your community's water supply?
4. Is drinking water accessible for the community?
5. Is drinking water considered affordable for the community?
6. What conditions (i.e., drought, flooding) have impacted drinking water quality and supply reliability? Are certain conditions of concern in the future?

7. What conditions (i.e., drought, flooding, infrastructure failure) have impacted wastewater system operations or reliability? Are certain conditions of concern in the future?
8. Identify any stormwater/ urban water runoff / flood management issues.
9. What challenge or concern mentioned in this questionnaire do you feel is most in need of funding?
10. Describe system financing needs (i.e. operation and maintenance costs)
11. Are you aware of any compliance or regulatory issues regarding drinking water, stormwater, or wastewater in your community?

A general “additional needs and challenges” question was also included for further responses. In addition to feedback received on the questionnaire, community members also submitted “memos” and emails describing DAC needs in their areas.

### 2.2.2 Community Meetings

The CRFA Partners further engaged community members from the IRWM Regions and Eastern Counties through two in-person community meetings. One meeting was held at the Coachella Valley Water District for existing IRWM Regions, and one meeting was held in Eastern Riverside County (Blythe, CA) for the Eastern Counties region. At each of the meetings, an IRWM Program representative provided an overview of the State’s IRWM Grant Program, the CRFA and its IRWM Regions, and the purpose of the Water Needs Assessment. Several handouts were distributed to support and supplement the information provided at the community meetings, including the DAC definitions, CRFA DAC Map, and a copy of the questionnaire. A copy of distributed handouts may be found in Appendix D.

Conversations regarding the participants’ specific water needs and issues were encouraged, followed by time allotted to answer the questionnaire and ask questions. The discussion section provided a platform for participants to voice their opinions, questions, and concerns to an IRWM Program representative and engage in discussion with other DAC communities. The meetings engaged a total of 47 unique participants representing 21 organizations involved with DAC communities.

#### **Meeting #1: IRWM Region Community Meeting - October 15, 2019 – Coachella, CA**

The first community meeting was held at the Coachella Valley Water District (CVWD) offices in the Coachella Valley IRWM Region. This meeting was held immediately prior to CVWD’s Disadvantaged Community Infrastructure Task Force meeting to garner more participants including State agencies, non-profit organizations, universities, and Riverside County representatives.

Prior to the meeting, the consultant team conducted a literature review to characterize needs within existing IRWM Regions. Each IRWM Plan (see *Section 1.1 Integrated Regional Water Management Program* above) has included outreach to DACs and Tribes. The purpose of the meeting was to review the compiled water and wastewater management needs and update as needed.



The meeting gave an overview of each IRWM Region and paused for discussion to determine information gaps. Then an overview of Tribal water needs and Eastern Counties needs were presented with the aim to supplement this information through community outreach. A copy of the presentation may be found in Appendix D.

The conversation at the meeting focused on the need for consolidation for water and sewer. The need for these projects are immediate, typically due to degraded drinking water quality at existing systems, but no funding is available. Connection fees disproportionately impact DAC/SDCA households. Some areas are not able to connect to a sewer main, even if one is nearby, due to prohibitive costs. In addition to consolidation issues, issues surrounding tribal "Allottee" land were discussed. These are discussed in more detail in *Section 6*.

### **Meeting #2: Eastern Counties Community Meeting – January 25, 2020 – Blythe, CA**

A second workshop took place at Blythe City Hall for the Eastern Counties. A total of 27 participants attended, including community members. An open discussion on the community's water management needs was held. Notes were taken on a flip chart to facilitate the discussion when appropriate. The following questions prompted discussion:

1. What are some strengths of your community?
2. What are some challenges or needs in your community?
3. With regard to water, what are some strengths in your community?
4. With regard to water, what are some challenges or needs in your community?
5. Are there any additional needs or challenges within your community that have not been discussed?
6. Are there any more contacts that we should reach out to?



The meeting in Blythe brought together a diverse group of representatives including community members, water districts, city, county, and state agencies.

*Photo credit: Rosalyn Prickett, Woodard & Curran*



Tap water following a water main break brought by a resident.  
*Photo credit: Nicole Poletto, Woodard & Curran*

The day before the meeting, a water main broke in Blythe, sending brown water through resident's taps. Participants stated that conveyance infrastructure is over 100 years old and subject to breaking. Aging cast iron pipes flush iron and manganese through the pipes, causing a brown color when mixed with the chlorine that is used for disinfection.

Residents are deeply concerned about the water quality and cost of water, questioning if it receives treatment and demonstrating concern for the potential health impacts from utilizing water in daily routines. Many families resort to purchasing bottled water, an additional weekly expense on tight budgets.

Community members were very interested in becoming an IRWM Region and had attempted to become a region in the past but were not able to find a third agency willing to form an RWMG.

## 2.3 Success of Methods

DAC mapping completed through this Water Needs Assessment is consistent with the IRWM Program mapping tool. However, this data does not account for current land uses or development, therefore exact locations of DACs may not be accurately represented, and DAC community boundary data should be used for information purposes only. It is not definitive and does not establish legal rights or define legal boundaries.

The Water Needs Assessment utilized successful outreach strategies such as email, phone calls, questionnaires, and in-person meetings. Despite numerous attempts through emails and phone calls, some participants simply did not respond to our outreach. Some organizations responded to our outreach by asking for more information, but did not participate in a community meeting or complete a questionnaire. These respondents were not included in the number of organizations engaged in this assessment.

The Water Needs Assessment consisted of a strategic effort aimed at identifying and reaching out to DACs that have not been engaged with IRWM in the past. The Eastern Counties region is located within the CRFA, but is not part of an approved IRWM Region. Building relationships and creating connections can be time consuming and require continued follow-up and communication. For example, the Water Needs Assessment did not follow its proposed grant timeline due to the extended period of outreach in the Eastern Counties region to determine a workshop location, choose a date, and invite attendees. While time consuming, these efforts are critical to building engagement and trust in an area.

The contact list in the Eastern Counties area was built using connections from CRFA Partners, internet research, and word of mouth. However, the team acknowledges that the contact list is not inclusive of all existing organizations in the Eastern Counties area. Establishing relationships in a community takes time and trust. Once relationships are built, follow up is needed to continue collaboration efforts with newly identified stakeholders.

Community meetings were effective in soliciting strong qualitative feedback from specific individuals, as discussions tended towards specific topics of interest to the participants. Many factors such as capacity and drive time were likely barriers to attendance, making community workshops more valuable for focusing on a specific community's water needs. Due to the scope of the project, only two in-person community meetings were held.

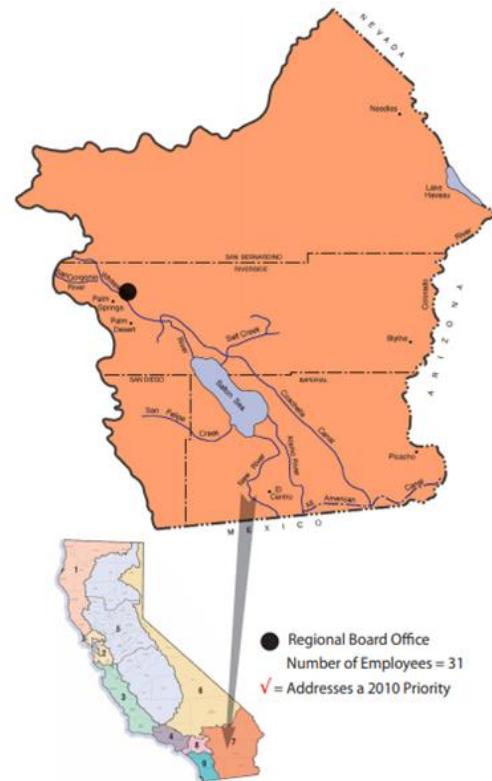
## 3 CRFA DAC Needs

The Water Needs Assessment utilized both outreach and literature review to characterize the water and wastewater needs within the CRFA. The literature review supports the context of knowledge provided by existing plans and previous outreach. Water needs identified through stakeholder outreach is dependent on the response of participants, recognizing the community is the expert on where they live. Mapping results are paired with findings from literature review and stakeholder outreach to characterize the needs of DACs within each region and non-IRWM areas. The CRFA is described in more detail below.

### 3.1 Funding Area Characteristics

The CRFA follows the same boundaries as the California State Water Resources Control Board Region 7, the Colorado River Basin. The Colorado River Basin/CRFA covers approximately 20,000 square miles of California's most arid area and contains desert, high desert, mountain, and rural communities. The CRFA is bounded on the east by the Colorado River; to the south by the Republic of Mexico; the west by the Laguna, San Jacinto, and San Bernardino Mountains; and to the north by the New York, Providence, Granite, Old Dad, Bristol, Rodman, and Ord Mountain Ranges.

The CRFA contains two water bodies of State and national significance: the Colorado River and the Salton Sea. Primary sources of water include imported water from the Colorado River and State Water Project, in addition to groundwater. The Colorado River follows the border of Arizona and provides both drinking water to southern California and irrigation to more than 700,000 acres of



The Colorado River Basin is arid with two significant water bodies.  
Source: SWRCB Region 7 Fact Sheet<sup>4</sup>

<sup>4</sup> State Water Resources Control Board (SWRCB) Colorado River Basin Regional Water Board Region 7 Fact Sheet, June 2012: [https://www.waterboards.ca.gov/publications\\_forms/publications/factsheets/docs/r7\\_factsheet.pdf](https://www.waterboards.ca.gov/publications_forms/publications/factsheets/docs/r7_factsheet.pdf)

productive farmland in the Imperial, Coachella, Bard, and Palo Verde Valleys (SWRCB, 2012). There are a number of groundwater basins that in many cases are the sole water source for local areas. Other surface water in the CRFA is mostly used for groundwater recharge.

DWR identified multiple critical vulnerabilities related to climate resiliency in the CRFA Fact Sheet:

1. Water demand for crops in addition to crop demand may increase.
2. Imported water reliability from the State Water Project could be reduced by 25% due to sea level rise.
3. Changes in runoff patterns may impact the Region's ability to access and store water in local groundwater basins.
4. The Region relies on water diverted from the Delta or imported from other climate sensitive systems outside the area which may be impacted from climate change.
5. Desert storm events go from an extremely hot, dry climate to torrential wet weather events, causing normally dry washes to gush with flood flows and damage developed areas.

According to the CRFA Water Needs Questionnaire, over 50% of respondents consider climate change a threat to the community's water supply. Approximately 7% believe it is not a threat, while the remainder of respondents replied "maybe." The top identified climate change concern from respondents (majority Eastern Counties) was the reliance of the CRFA on water from the Colorado River. Shifts in weather, rainfall, and snowfall may impact the amount of water available in the Colorado River and questionnaire respondents noted that impacts of a drought will be first felt by DACs.

### 3.1.1 CRFA DAC Communities

The Water Needs Assessment encompasses DACs, SDACs, EDAs, and tribal subsets of URCs, which are collectively referred to as DACs in this Water Needs Assessment unless otherwise specified. There are approximately 780,000 people living in the CRFA, 92% of which reside in DACs and 44% of which reside in EDAs. The results of the analysis are found in Table 3 below.

**Table 3: DACs and EDAs in the CRFA**

IRWM Region	Population (number of people) <sup>1</sup>			% Population		Land Area (square miles)			% Area	
	Total	DAC	EDA	DAC	EDA	Total	DAC	EDA	DAC	EDA
Anza Borrego Desert	6,271	6,269	6,269	100%	100%	1,283	1,282	1,282	100%	100%
Coachella Valley	444,758	352,290	34,986	79%	8%	1,647	1,375	850	83%	52%
Imperial	169,415	136,843	119,949	81%	71%	3,108	2,594	2,586	83%	83%
Mojave	64,556	62,395	22,323	97%	35%	1,478	1,230	1,156	83%	78%
San Gorgonio	33,656	33,338	5,303	99%	16%	152	137	110	90%	72%
Eastern Counties	80,804	77,040	30,099	95%	37%	11,840	11,796	8,291	100%	70%
<b>Total/ Average</b>	799,460	668,176	218,661	92%	44%	19,508	18,414	14,275	90%	76%

<sup>1</sup> Population is based on 2016 US Census Data, in alignment with the DWR DAC Mapping tool.

Mapping results are presented below, demonstrating that approximately 83% of the population within the Funding Area is considered a DAC. DAC mapping completed through this Water Needs Assessment is consistent with the IRWM Program mapping tool. However, this data does not account for current land uses or development, therefore exact locations of DACs may not be accurately represented. The DAC percentages above, specifically in Coachella Valley, may be inflated by seasonal vacancies in more populated areas. Given the concentration of DACs, coupled with an arid climate, this Funding Area has a high need for funding through the IRWM Grant Program. A map of DACs in the Funding Area can be seen in Figure 2.

In addition to the IRWM Plans, individual agencies and municipalities include some DAC information in a variety of planning documents, such as General Plans, Urban Water Management Plans (UWMPs), and community plans, among others. Needs will be discussed in more detail by region in *Section 3.2 Water Needs by Region*. A detailed summary of the literature review and characterization of DAC needs is provided in Appendix A.

Multiple tools were used to analyze the status of disadvantaged community water systems including the Human Right to Water Data Tool<sup>5</sup> and Groundwater Ambient Monitoring and Assessment Program (GAMA) Groundwater Information System<sup>6</sup> well data.

The Human Right to Water Data Tool was developed by the Office of Environmental Health Hazard Assessment (OEHHA) in the California Environmental Protection Agency, to help adopt the Human Right to Water Resolution as defined in Assembly Bill 685. The tool shows information on water quality, water accessibility, and water affordability for various types of water systems in California where data is available. The water quality category focuses on scoring how free of harmful bacteria or other pathogen, and chemical contaminant levels is the water supplied to the system's

<sup>5</sup> Human Right to Water Data Tool:

<https://oehha.maps.arcgis.com/apps/MapSeries/index.html?appid=a09e31351744457d9b13072af8b68fa5>

<sup>6</sup> GAMA Groundwater Data: (<https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/>)















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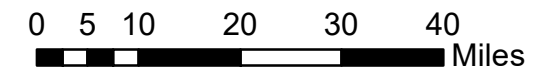
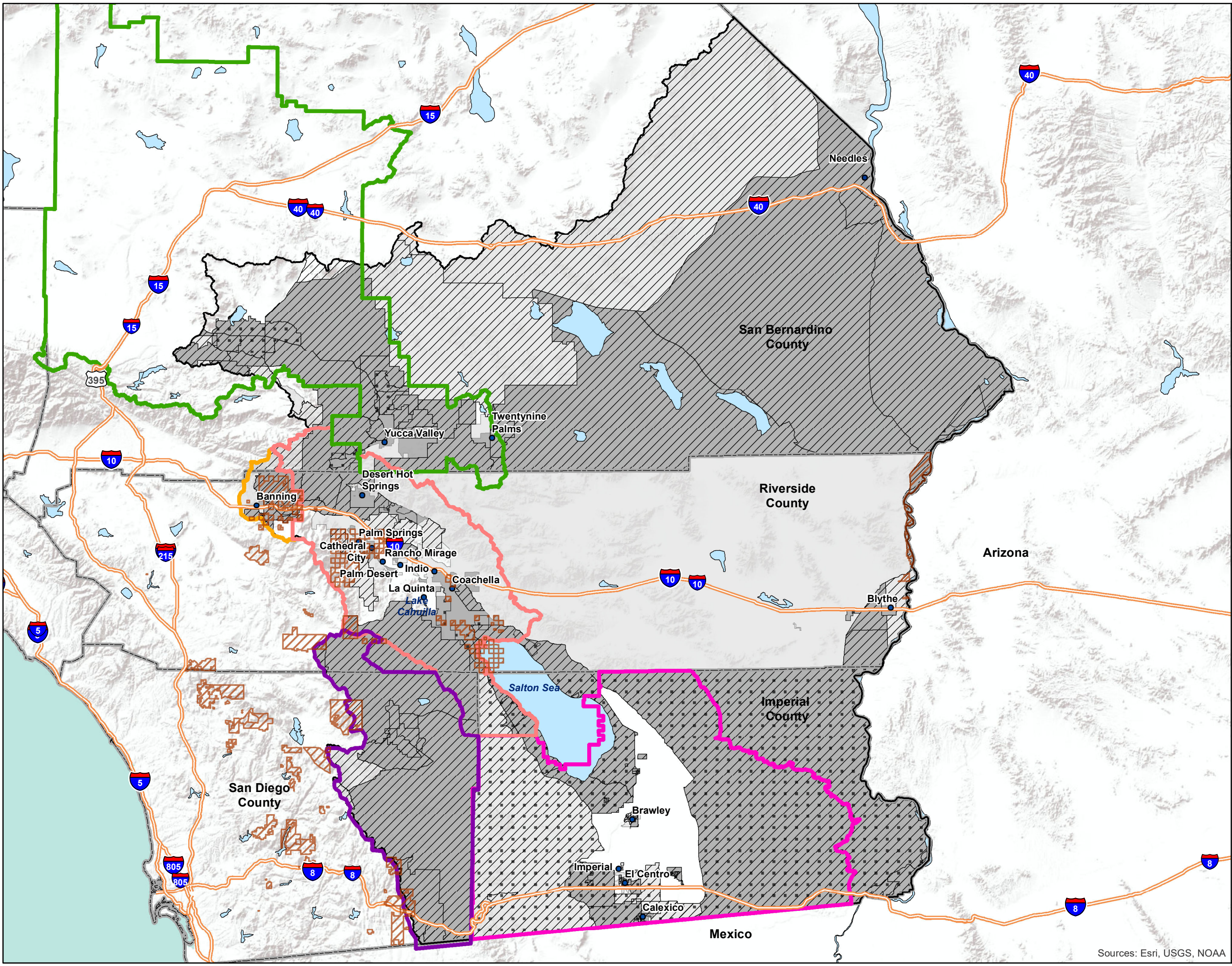
residents. Contaminant levels should not pose significant public health risks. Water accessibility focuses on ensuring there is sufficient and continuous amounts of water delivered to meet everyday household needs. Water affordability scores are based on comparing average household living expenses and household incomes in comparison to the direct and indirect costs of obtaining access to water. More information on each Region on water quality, accessibility, and affordability, is provided in the sections below.

The Human Right to Water Portal includes a map that shows public water systems currently out of compliance with one or more federal/state primary drinking water standard(s) and an enforcement action has been taken. The drinking water standards may include Maximum Contaminant Level (MCL) or Treatment Technique (TT) requirements. Systems currently out of compliance and systems that have returned to compliance in the CRFA are depicted in Figure 3. The eight water systems in the CRFA that are out of compliance are listed in Table 4.



**Figure 2: DACs, SDACs, and EDAs within the Colorado River Funding Area**

- IRWM Planning Regions**
-  Anza Borrego Desert IRWM Region
  -  Coachella Valley IRWM Region
  -  Imperial Valley IRWM Region
  -  Mojave IRWM Region
  -  San Geronio IRWM Region
- Other Legend Items:**
-  < 80% CA. MHI (DAC)
  -  < 60% CA. MHI (SDAC)
  -  < 85% CA. MHI, Pop <= 20K with UnEmp 2% > CA Avg. (EDA)
  -  < 85% CA. MHI, Pop <= 20K with Local Financial Hardship (EDA)
  -  Highways
  -  Water Bodies
  -  Colorado River Funding Area
  -  County Lines
  -  Major Cities



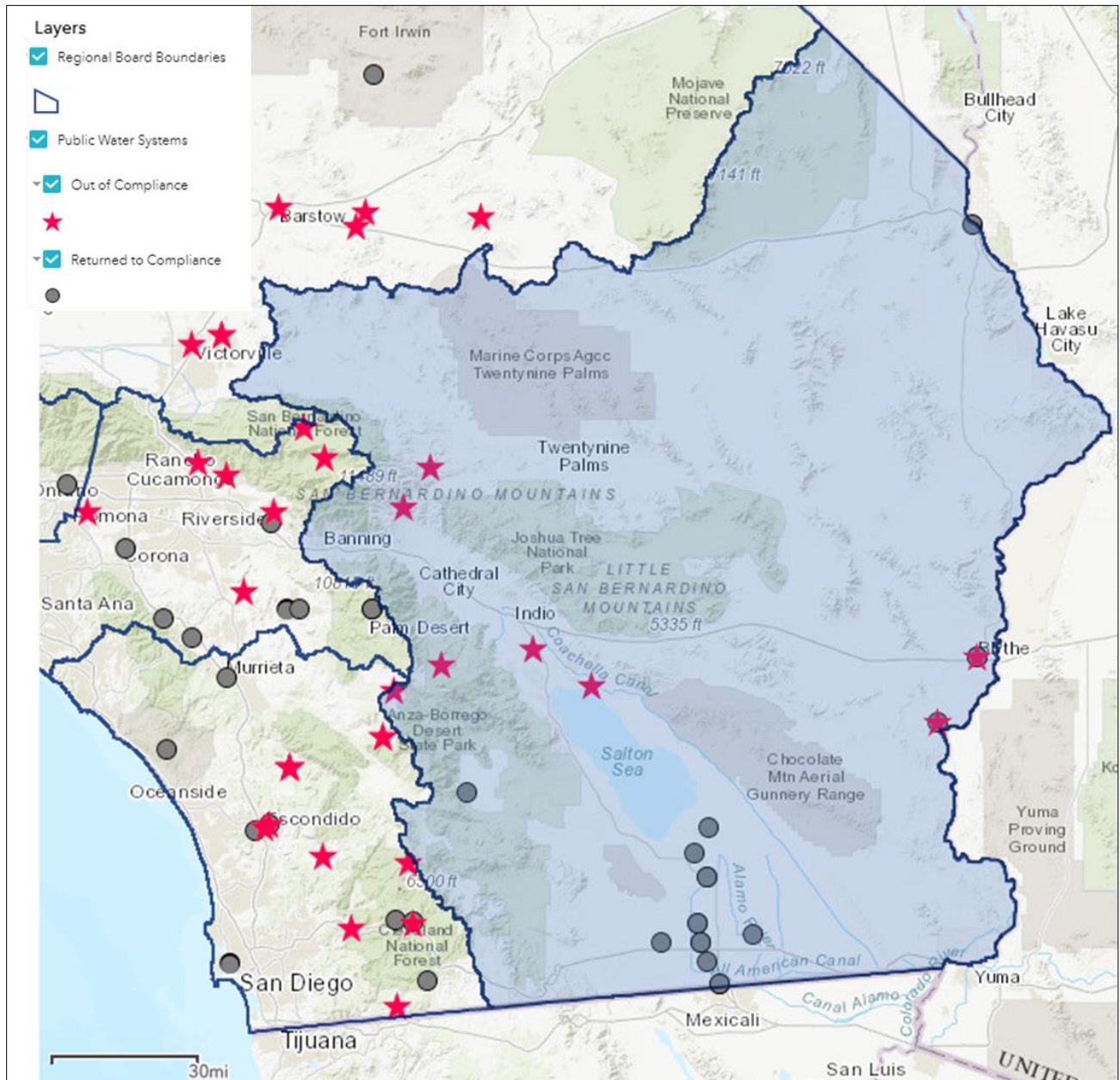
Source: California Department of Water Resources (DWR), 2016; GEI Consultants, 2009

File Name: CRFA Map\_24.Jul19  
 File Location: \\woodardcurran.net\shared\Projects\VRMC\SD\0574 - CVWD\03\_GIS\MXD\Prop 1 Round 1  
 Date Updated: August 2, 2019  
 Department: Woodard & Curran

Sources: Esri, USGS, NOAA



Figure 3: Compliance Status of Public Water Systems



Source: SWRCB Human Right to Water Portal<sup>7</sup>

<sup>7</sup> State Water Resources Control Board (SWRCB): Exceedance/Compliance Status of Public Water Systems  
[https://www.waterboards.ca.gov/water\\_issues/programs/hr2w/](https://www.waterboards.ca.gov/water_issues/programs/hr2w/)

**Table 4: Out of Compliance Public Drinking Water Systems in CRFA**

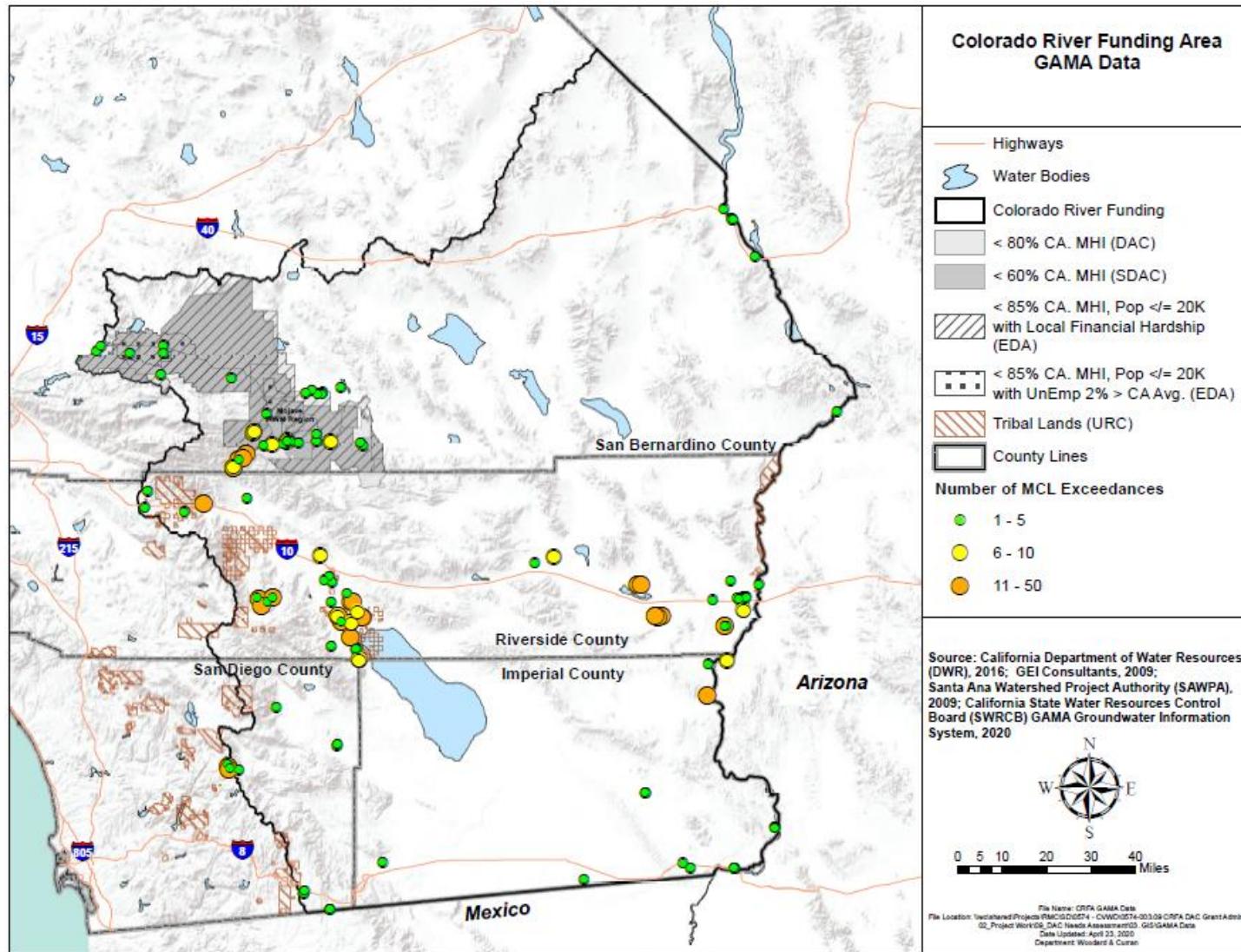
System	City	Region	Constituent(s) above MCL
CSA 62	Ripley	Eastern Counties	1,2,3 TCP
Palo Verde County Water District	Palo Verde	Eastern Counties	Arsenic
CSA 70-F Morongo	Morongo Valley	Eastern Counties	Combined Uranium
Saint Anthony Mobile Home Park	Mecca	Coachella Valley	Arsenic
Oasis Gardens River Co.	Thermal	Coachella Valley	Arsenic
Alpine Village	Pinyon Pines	Coachella Valley	Uranium
Ramona Water Co	Anza	Anza Borrego Desert	Nitrate
CSA 70 W-4 Pioneertown	Pioneertown	Mojave	Arsenic, Fluoride, Combined Uranium

*Source: SWRCB Human Right to Water Portal*

Additional data on MCLs were analyzed using the State Water Resources Control Board (SWRCB) GAMA Groundwater Information System data for the following constituents: Arsenic, 1-2-3 Trichloropropane (1-2-3 -TCP), Iron, Manganese, Chromium-6, and Uranium. These constituents were identified through stakeholder feedback and literature review. In Figure 4, sample results above the MCLs since 2016 were transposed onto the CRFA’s DAC map to demonstrate hot spots of results above the MCL. However, it is important to note that GAMA wells are not necessarily drinking water wells and may not be representative of small water system drinking water wells. Some points on the figure below overlap due to the overlap of well location and scale of the figure. For a more detailed view of MCL exceedances for each constituent in a specific community, please visit the GAMA website.

More detailed information on the water challenges of each DAC community identified through literature review can be found in Appendix A.

**Figure 4: Wells Above Comparison Concentration in Past Three Years**



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## 3.2 Water Needs by Region

The water and wastewater needs of IRWM Regions, the Eastern Counties, and Tribes are characterized through literature review and outreach below. Needs identified in the regions' IRWM Plans are presented separately from needs presented in water and wastewater master plans, groundwater management plans, and general plans. Each Region developed goals in their respective IRWM plans to address water management challenges. These regional issues encompass both DAC and non-DAC needs and issues.

Needs identified through outreach are also included below. DAC stakeholders in the CRFA are encouraged to identify additional needs and issues as appropriate during planning activities and grant cycles.

### 3.2.1 Anza Borrego Desert IRWM Region

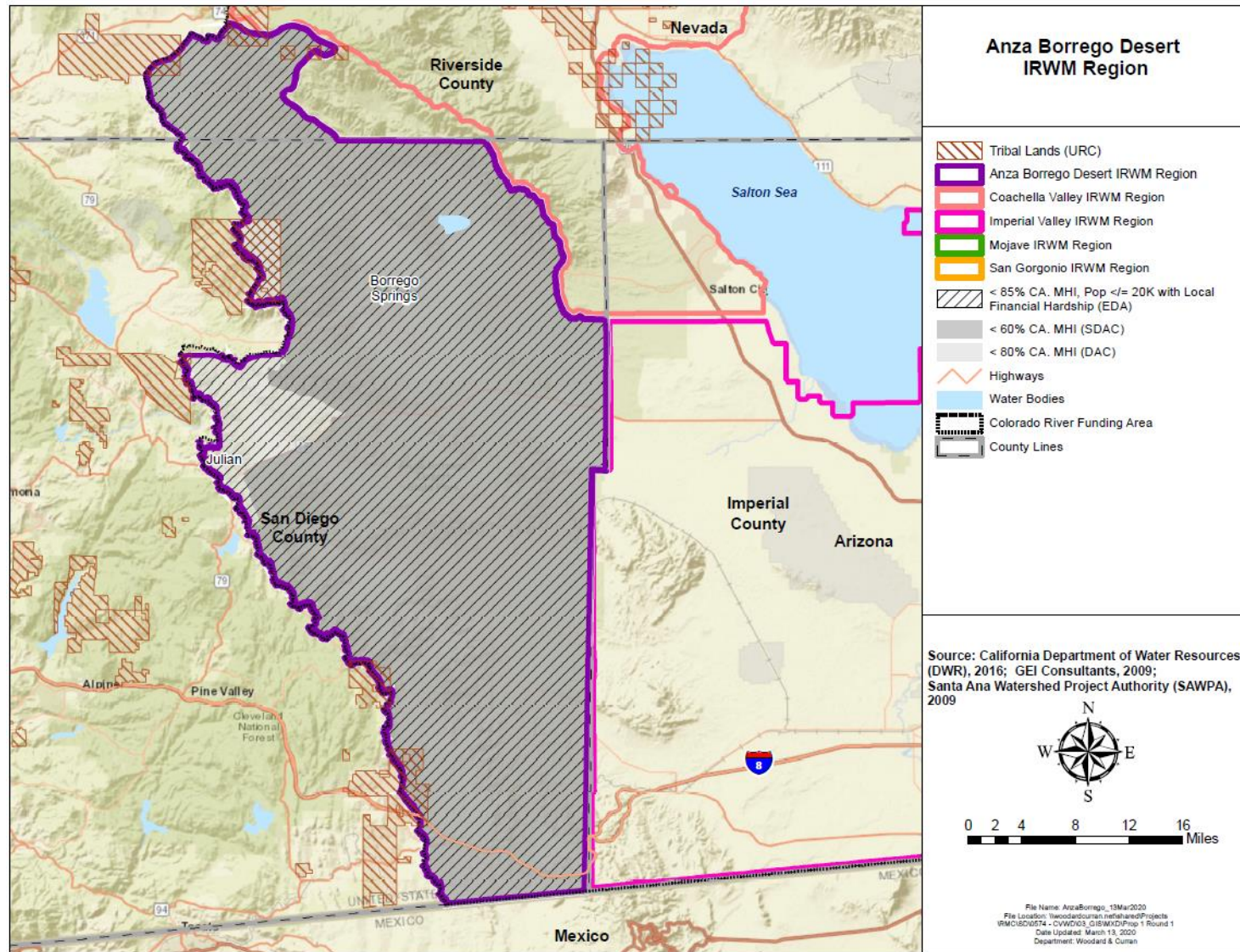
The Anza Borrego Desert IRWM Region is approximately 1,300 square miles and is considered 100% DAC and EDA, mainly SDAC. The IRWM Region is dominated by the Anza-Borrego Desert State Park, with the small community of Borrego Springs located at the center. The Borrego Water District serves this community, with an estimated population of 3,000. Population is distributed over a large area and is seasonal with large summer vacancies. Therefore, outreach within this IRWM Region is difficult. A map of the IRWM Region is provided below.

The following cities and communities include DACs within the Anza Borrego Desert IRWM Region:

- Borrego Springs (surrounded by Anza-Borrego Desert State Park)
- Borrego Valley Area



Figure 5: Anza Borrego Desert IRWM Region DACs





### **3.2.1.1 Needs Identified in the IRWM Plan**

The *Anza Borrego Desert IRWM Plan* was written in 2009. Because the IRWM Plan was not updated in accordance with DWR's 2016 Guidelines, this Region is not currently considered an active IRWM Region.

According to the IRWM Plan, the Borrego Valley region is isolated and relies solely on the Borrego Valley Groundwater Basin (Borrego Springs Groundwater Subbasin and Ocotillo Wells Groundwater Subbasin) as its source of water, which is shared by agriculture, golf course resorts, and residential homes. The community of Borrego Springs is surrounded by the Anza-Borrego Desert State Park, which attracts hundreds of thousands of park visitors throughout the year. The northern portion of the community is almost entirely comprised of agricultural production. The Borrego Water District (BWD), established in 1962, provides water, sewer, and flood control and gnat abatement for areas in the unincorporated community of Borrego Springs.

Borrego Springs Groundwater Basin monitoring wells show a gradual and steady decline in water levels from 1987-2005 and are predicted to stabilize by 2040 following implementation of an expedited Basin adjudication agreed to by over 92% of Basin pumpers. The groundwater quality throughout most of the basin is good to excellent and data shows, as of 2009, that there has been no serious, widespread degradation to the water quality. It is predicted that the water quality in the main agricultural area is expected to be of poorer quality than that derived from the BWD wells due to the long-term concentrating effect of irrigation return flows to the groundwater basin. Updated information on the groundwater basin from the *2019 Groundwater Sustainability Plan for the Borrego Springs Groundwater Subbasin* is provided below.

The amount of water delivered and used by agriculture is of considerable concern due to its magnitude relative to other water uses which exceeds the natural recharge of the basin. Historically, Borrego Valley has been primarily an agricultural community and has gradually changed since 1960 with an accumulation of farms, retirement communities, residential homes, and golf resorts. Municipal urban water use consists of commercial development and residential users. The highest prioritization for projects within the region focuses on fallowing previously farmed areas and re-directing its use to recreational or municipal purposes.

### **3.2.1.2 Needs Identified by Literature Review**

The *2019 Groundwater Sustainability Plan for the Borrego Springs Groundwater Subbasin* was also used to characterize water needs in this section. Borrego Springs Subbasin is a high-priority and critically overdrafted basin and Ocotillo Wells Groundwater Subbasin is a very low priority basin as designated by DWR. In Borrego Springs Subbasin, there is approximately 1.6 million acre-feet of useable groundwater with limited recharge due to an annual rainfall of 6 inches and an average recharge of 5,000 acre-feet per year. The water demand for Borrego Valley is at least 20,000 acre-feet per year. As water demand has increased over the past 20 years due to the increase in golf courses and residents, overdraft conditions have resulted in the groundwater basin.

Water level declines are the most significant in the northern portion of the basin within the agricultural area. In the past 20 years, rates of groundwater decline have increased sharply and

are likely caused by the increase of groundwater extraction. An additional concern for desert communities such as Borrego Valley is that desert basin wells can be easily overdrafted since the coarse-grained alluvial sediments allow high water withdrawals yet extremely low recharge rates. This is not sustainable for long-term groundwater use. The Borrego Springs Subbasin must reduce its water use by 74.6% between now and 2040. Plan implementation will likely limit future growth in the community and fallow citrus farms.

The US Geologic Survey (USGS) created a predictive model that determined that at current 2010 annual pumping rates, about 1,000,000 acre-feet of groundwater storage would be depleted by 2060. The model also supported that simulated groundwater pumpage exceeded recharge in most years. Groundwater pumping results in declining groundwater levels which in turn decreases natural outflows from the basin.

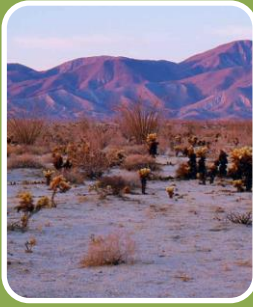
There are currently no managed stormwater recharge facilities in the area. Infrequent rainfall in the region also results in sustained periods of zero-groundwater recharge. As in other desert climates, flash flooding poses significant health and safety risks to the region. Sediments accumulated in large storm events are costly to remove and dispose of.

The basin's main constituents of concern include arsenic, nitrate, sulfate, fluoride, TDS, and radionuclides. As groundwater levels deplete, the basin is subjected to higher risk from contaminants. Anthropogenic sources (irrigation and wastewater return flows) are likely the main contributors of nitrates introduced to the groundwater supply. The Anza Borrego Region is served mostly by septic wastewater systems, which can also cause groundwater contamination through leaking underground tanks. Arsenic concentrations were increasing in multiple Borrego Water District water supply wells until 2014 but have since decreased. Historically, there has been no nitrate-related water quality issues that have led to well reconstruction, abandonment, or replacement.

In 2009, BWD commissioned an SDAC Impact/Vulnerability Assessment to understand implications the Sustainable Groundwater Management Act on the SDAC population of Borrego Springs. The SDAC communities have two sub-populations, one with households with school age children and one of retirees. Specific SDAC concerns included water affordability and BWD rate impacts, loss of jobs, impacts to infrastructure, and/or quality of life. The community's tourism industry is not highly dependent on water, in comparison to the agriculture industry, which would help offset potential agricultural job losses. BWD's tiered rate structure helps maintain low water rates for baseline water users.

The Human Right to Water Data Tool, developed by OEHHA, considers BWD to have good water quality and accessibility. The water system's water quality score is 4 out of 4 because there are no contaminants with potential exposure and there have been no compliance issues. For accessibility, the system received a 3.5 out of 4 because the groundwater system is not vulnerable to outages, there are no M&R violations, and there is medium institutional capacity.

Needs compiled from literature review summarized and discussed at the October community meeting are highlighted below.



### Identified Water Needs: Anza Borrego Desert IRWM Region

- Increasing demand over past 20 years from agricultural land, golf courses, and residential areas
- All wells currently meet MCLs
- Lack of stormwater recharge facilities
- Susceptible to flash flooding
- Infrequent rainfall in the region results in periods of extended zero-groundwater recharge

Photo Credit: Visit California. <https://www.visitcalifornia.com/destination/spotlight-anza-borrego-desert-state-park>

More information on the water challenges identified through literature review can be found in Appendix A.

#### 3.2.1.3 Needs Identified through Outreach

The Anza Borrego Desert IRWM Region did not participate in the community meetings or questionnaire process. However, the Borrego Water District is a CRFA Partner and was involved in the Water Needs Assessment process.

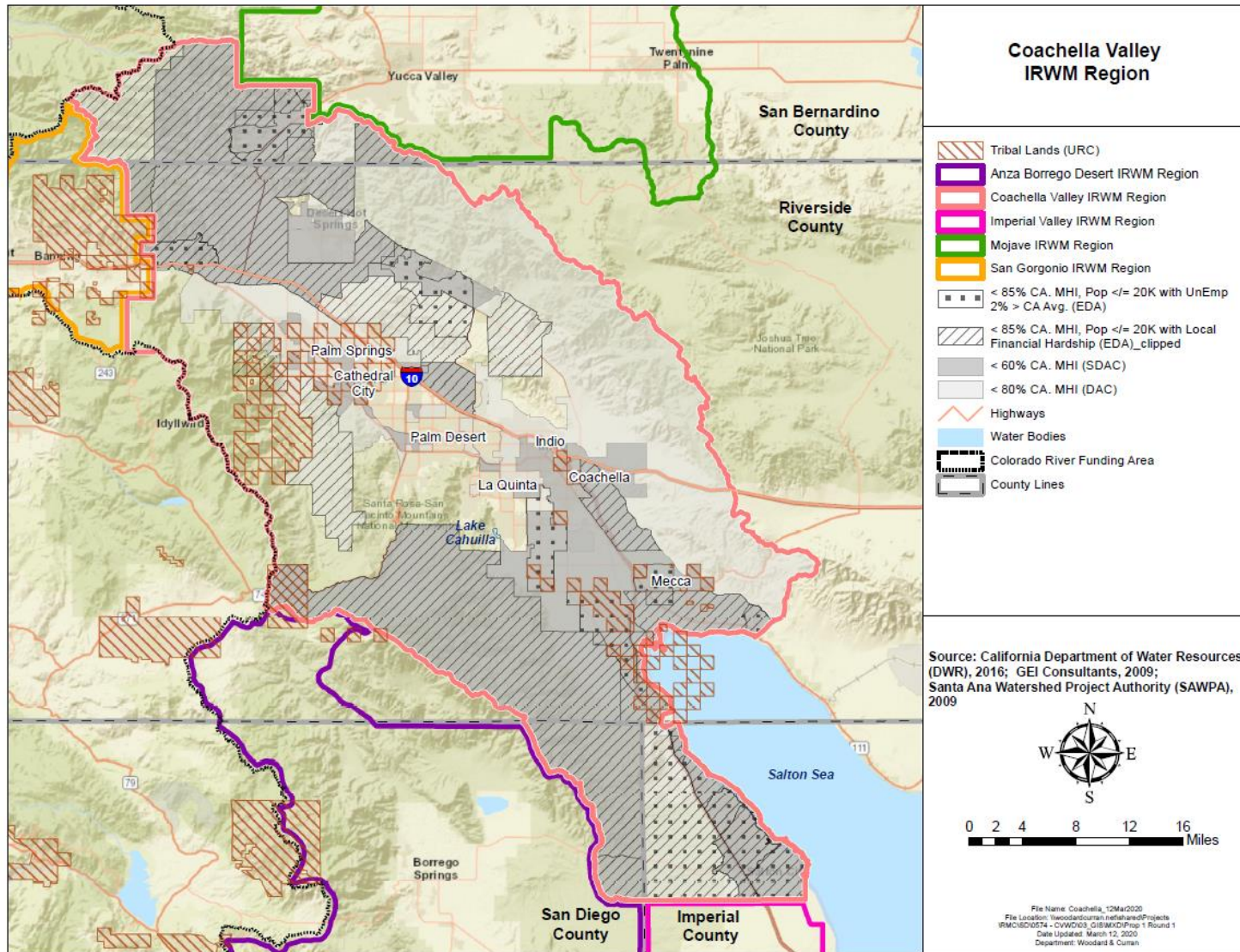
#### 3.2.2 Coachella Valley IRWM Region

The Coachella Valley IRWM Region is approximately 1,650 square miles and is considered 66% DAC by area. The IRWM Region is located in central Riverside County with small portions of the Region within San Bernardino, San Diego, and Imperial counties. Coachella Valley is composed of nine city jurisdictions and unincorporated areas with a total estimated population of 444,800 (US Census 2016). The majority of the IRWM Region's population resides in incorporated cities. There are also a substantial number of seasonal visitors that reside within Coachella Valley during the winter months and for seasonal work during the agricultural harvest season. A map of the IRWM Region is provided below.

The majority of the Coachella Valley IRWM Region is comprised of rural communities with low population density. The following cities and communities include DACs within the Coachella IRWM Region:

- Whitewater
- Garnet
- Cathedral City
- Thousand Palms
- Thermal
- Oasis
- Desert Shores
- Desert Hot Springs
- Desert Edge
- Sky Valley
- Coachella
- Mecca
- North Shore
- Salton City

Figure 6: Coachella IRWM Region DACs





### 3.2.2.1 Needs Identified in the IRWM Plan

The 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan (2018 Coachella Valley IRWM/SWR Plan) was utilized to characterize the region and determine water and wastewater needs. The summary of the analysis is included in this section.

A DAC Outreach Program was implemented from 2012 to 2013 by the Coachella Valley Regional Water Management Group (CVRWMG), for the purpose of developing and implementing methods to improve DAC participation in the Coachella Valley IRWM process. Prior to the formation of the CVRWMG in 2009, the DAC Planning Group was formed in 2007 to track the progress of DAC programs under Proposition 84. In addition, several other entities within the Coachella Valley region have continued to conduct DAC-related outreach in the Coachella Valley. For the 2018 Coachella Valley IRWM/SWR Plan, DAC needs and projects were identified and updated through ongoing DAC outreach since the original effort.

The DAC Outreach program formed an Issues Group for the 2014 Coachella Valley IRWM Plan and conducted outreach through workshops, email notifications, and a survey. Through this process, several projects to assist DACs were identified to potentially resolve DAC needs and issues including outreach and education, point-of-use treatment system installation, and septic-to-sewer conversion. Some of the needs and concerns identified in the meetings with tribes included water quality concerns of the Colorado River water quality and the perceived need for additional water treatment before this water is used to recharge the groundwater basin. In addition, tribes, particularly the Torres-Martinez Band of Desert Cahuilla Indians, noted that connection to municipal services seems to be the best option, because upgraded onsite water and wastewater treatment systems would require substantial technical proficiency and operations and maintenance that the Tribe does not have.

Throughout the outreach process undertaken for the DAC Outreach Program, three prominent issues were consistently raised by DAC stakeholders in 2014 and are discussed below. However, it is important to note that DAC needs differ based on water or wastewater services received, such as municipal services, small water systems, or private wells or septic systems.

- **Water supply** – DAC water supplies must be affordable, accessible, and in compliance with state and federal requirements to meet the needs of all Coachella Valley residents, including DACs. According to the 2018 IRWM/SWR Plan, “some areas may not have access to clean tap water, either through a lack of municipal sources or through some source of contamination between the meter and the tap (e.g., leaky or corroded pipes, cross contamination), and need water treatment systems that would resolve drinking water quality concerns.” Many DAC residents are unaware that the groundwater wells they utilize do not always meet drinking water standards, such as in eastern Coachella Valley where DACs and tribal groups have reported arsenic levels that exceed MCLs. Many DACs are not within urban areas, which makes it even more difficult to connect to the municipal water system as it may be cost-prohibitive. Therefore, they are either serviced by a small water system or a private well. Many DACs are dependent on shallower groundwater wells for their supply; however, drilling new wells can also be cost prohibitive.

- **Wastewater** – “Wastewater systems need maintenance and residents need education on how to maintain onsite systems to avoid failures, overflows, and other issues.” Proper wastewater treatment and disposal is considered an issue in some areas that rely on septic systems in the Coachella Valley, and the Regional Water Quality Control Board has identified water quality issues relating to failing and/or densely located septic systems within the Colorado River Basin. One solution for addressing water quality and other issues associated with faulty septic systems is to connect properties to the municipal sewer system; however, jurisdictional issues or high costs may delay or prohibit project construction. Some DAC communities rely upon other wastewater disposal methods such as open lagoons, which can cause health and safety concerns for residents.
- **Flooding** – Flooding and storm management improvements are needed to address flooding hazards in DAC areas, particularly in unincorporated communities. Although CVWD and other agencies are working on expanding flood protection in the Region, the Thousand Palms area and the eastern Coachella Valley (from Oasis to Salton City) are not protected by regional flood control facilities. These facilities are expensive and generally funded from local property taxes, which rural (low density) and economically disadvantaged communities cannot afford. In addition to large-scale floods, several DAC areas have reported regular localized flooding during storm events due to onsite issues such as improper site grading, which allows storm flows to pool on properties rather than being conveyed offsite.

Stakeholders have also noted that there may be conflicts between landowners and residents of DACs in instances when economic interests of landowners’ conflict with the interests of DAC residents; this issue specifically pertains to the IRWM Program when such issues involve provision of adequate water supplies that meet drinking water standards or adequate wastewater services, especially when existing onsite wastewater services pose a threat to public health.

Many DACs are not within urban areas and therefore are not served by municipal water and wastewater systems, making water supply management in these DACs difficult. Despite the inclusion of DAC projects in the Coachella Valley IRWM Implementation Grant applications and provision of grant funding for DAC projects, affordability of water supply and wastewater treatment continue to be key issues for DACs. There is high need for septic to sewer conversion, but DACs worry that jurisdictional issues or high construction and connection costs may delay or prohibit project implementation.

In addition, groundwater quality in several DACs such as those with wells located in eastern Coachella Valley, hot water basin wells in the Desert Hot Springs area, and agricultural wells in the eastern Coachella Valley are not suitable for drinking. This is not applicable for municipal wells operated by municipal water agencies. While onsite water treatment systems have been successfully employed in the eastern Coachella Valley, water quality monitoring, training, and operations and maintenance funds are needed in rural/remote areas to maintain onsite systems and ensure that water quality meets drinking water standards.



### 3.2.2.2 Needs Identified by Literature Review

From the 2010 *Coachella Valley Water Management Plan Update*<sup>8</sup>, the demand for groundwater annually exceeds the limited natural recharge of the groundwater basin (Coachella Valley, 2012). There was significant historical overdraft in the Coachella Valley and groundwater levels were substantially decreased in the western portion. CVWD and DWA both use imported water supplies to recharge the groundwater basin within their areas to mitigate potential overdraft.

Decreases in groundwater levels can also lead to water quality degradation. Elevated concentrations of arsenic, hexavalent chromium, nitrate, TDS, and radionuclides are already a concern in some areas of the groundwater basin though not related to groundwater levels. Some of these contaminants are naturally occurring and are being managed. However, there are some contaminants whose concentrations could continue to rise, or stay elevated, and need to be addressed. For example, septic systems are a major source of nitrate in the basin through leakage. Improperly constructed or unused wells may also be sources of contamination to the groundwater basin by providing a pathway for pollutants to enter the aquifer.

Residents in unincorporated areas of eastern Coachella Valley have little access to municipal water sources and wastewater disposal infrastructure. Communities that are not connected to municipal water could be exposed to contaminants through well water and have septic tank leakage as systems age or are used beyond their capacity. Unincorporated areas of eastern Coachella Valley need clean, safe drinking water at an affordable price and proper disposal of wastewater.

The 2010 *Coachella Valley Water Management Plan Update* is currently being updated. It summarized the following needs of the region, and is applicable to DACs:

- **Water Supply** – There is less reliability in some supply sources due to climate change and water user demand. Current supplies are adequate but may be stressed if development increases or water conservation is not achieved.
- **Water Quality** – Arsenic, emerging contaminants, fluoride, nitrates, TDS, and other water quality contaminants are present in some areas of the groundwater basin.
- **Costs** – The cost of water is too high for many DACs within the region and funding the replacement and upgrade of aging infrastructure for small water systems with water rates is not possible. Small Water Systems do not have enough connections to raise adequate funds for expensive infrastructure projects.
- **Water Conservation** – Additional conservation measures will need to be implemented to help reduce water use. The Coachella Valley Water District is incentivizing the use of non-potable water (e.g. recycled water or untreated imported surface water) for non-drinking water uses, such as landscape irrigation, to decrease the demand on the potable water supply.

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<sup>8</sup> The 2010 *Coachella Valley Water Management Plan Update* was submitted to DWR in 2017 as an Alternative Plan to a Groundwater Sustainability Plan. That *Indio Subbasin Alternative Plan* was approved by DWR in 2019. An update to the Alternative Plan is currently underway, due to DWR by January 1, 2022.

DACs are also in need of sanitary sewer system and domestic water system consolidation, including permitted and unpermitted systems. There are still many DACs that are on septic systems that increase the risk of septic leakage and groundwater contamination. By connecting these communities to the sewer system, it prevents future degradation and can decrease public health issues. Although there is a need for water and sewer consolidations throughout DACs, water and wastewater districts have limited ability to implement consolidations projects outside of their service area. Due to Proposition 218, rate payers can't be charged for services that they don't receive. Therefore, even though water and wastewater districts are willing to implement water and sewer consolidations, they are limited in their ability to fund these infrastructure projects and the financial burden falls on DACs. If a grant is secured, most grant funds cannot be used to pay for connection fees or private connection lines. With the cost and number of consolidations that needs to occur, outside financial assistance will be needed.

As discussed in the *2018 Coachella Valley IRWM/SWR Plan*, localized flooding is an issue in the Coachella Valley, especially in the eastern Coachella Valley where local soils are not conducive to rapid percolation. The *Eastern Coachella Valley Stormwater Master Plan* was recently developed to identify solutions for existing flood hazards and identify a plan for local drainage facilities.

Based on the Human Right to Water Data Tool (OEHHA), Coachella Valley overall has good water quality, good water accessibility, and a range of affordability. For water quality, the tool shows that each of the systems that have available data have no issues with water quality compliance and pose no potential health risk to its water users. Water accessibility scores drop a bit for some of the region's systems because several of the systems serve primarily DAC residents which means the system has less economic support to help maintain and fix their infrastructure. Additionally, some small systems found within DACs also had issues, historical and/or current, with supply source vulnerability and/or outages because the systems had minimal supply sources, or the systems had monitoring and reporting violations. Water affordability has a lower range for the Coachella Valley IRWM Region because of the median household income, which made the cost of water unaffordable in comparison to incomes.

Needs compiled from literature review summarized and discussed at the October community meeting are highlighted below.

### Identified Water Needs: Coachella Valley IRWM Region



- Pressing needs where DACs do not receive municipal water supply or wastewater services (most heavily concentrated in eastern CV)
- Primary concern: water quality and affordability of water and wastewater consolidation
- Lack of access to clean drinking water in some communities
- Funding for compliance orders and consolidations
- Elevated concentrations of naturally occurring arsenic in groundwater
- Water quality issues from leaking septic systems
- Small water systems
- Onsite leaking and ponding of water
- Pipes corroding or breaking or not properly connected or jointed
- Unpermitted - do not receive required water system monitoring
- Susceptible to flash flooding

Photo Credit: CVRWGMG. <http://www.cvrwmg.org/>

More information on the water challenges of identified through literature review can be found in Appendix A.

#### **3.2.2.3 Needs Identified through Outreach**

Additional needs for the Coachella Valley IRWM Region were discussed during the October 2019 Community Meeting and submitted questionnaires from four organizations and agencies. Community meeting participants echoed the needs identified through literature review mentioned above and added personal stories to characterize concerns. For example, most remember the 2012, 200-year storm that brought 6 inches of rain in 6 hours to the desert community causing severe flash flooding. There are additional issues with tribal "Allottee" land that are discussed in Section 3.2.7 Tribes.

Community meeting participants and questionnaire respondents agreed that connecting communities to water and sewer is the most pressing need in the Coachella IRWM Region. The *East Coachella Valley Water Supply Project* has identified and prioritized communities in the Coachella Valley most in need of connection. CVWD is actively applying for funding for water/sewer main pipelines and consolidations, but there is no funding available for immediate improvements. Current funding available through Proposition 1 does not fund short-term projects or on-site connections (including private lateral connection), but the sheer volume of people that need to connect is high. Connection fees disproportionately impact DAC/SDAC communities and even if all the infrastructure is there, it could be the last private connection that is cost prohibitive for a community to connect to services. Additionally, many small, isolated communities and mobile home parks are not located in areas where consolidations are feasible, requiring short-term solutions.

While the western shore of the Salton Sea is included in the IRWM Region, the eastern shore is not, despite being located within the CVWD service area. This area is an SDAC and has water and

sewer service from CVWD, but with infrastructure that requires upgrades. Meeting participants were interested in expanding the Coachella Valley IRWM boundary to include Bombay Beach, North Shore, and Hot Mineral Spa. The area is in need of infrastructure upgrades. In response to stakeholders' suggestions, the CVRWGM is currently working with DWR to expand its planning region boundary to include the western shore of the Salton Sea.

See Appendix B for more information on water needs from questionnaire respondents.

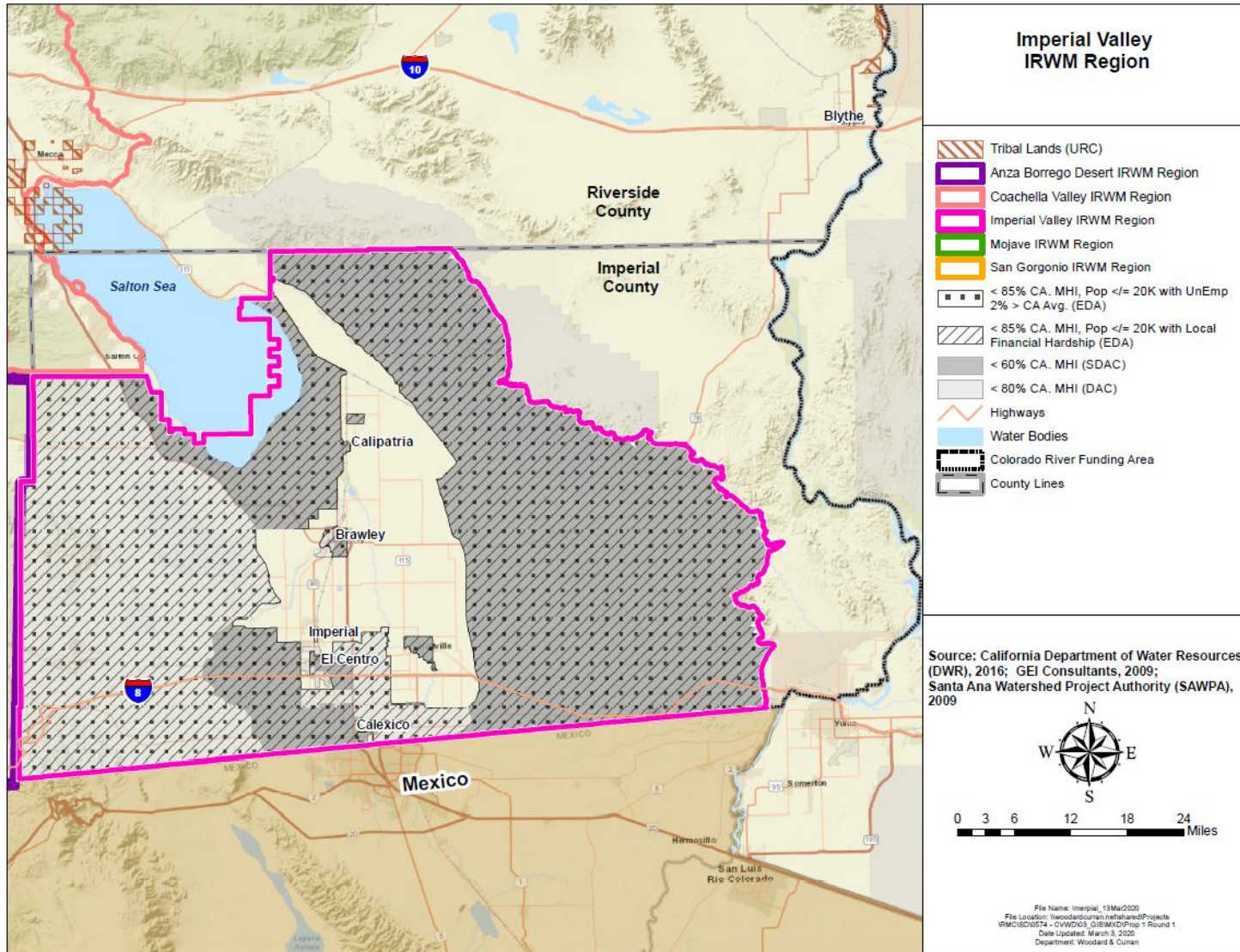
### 3.2.3 Imperial IRWM Region

Imperial IRWM Region is considered 81% DAC by population as communities within the Region, except for the City of Imperial, are DAC. 55% of these communities are considered SDAC. Additionally, the IRWM Region is considered 71% EDA by population and the County had the highest unemployment rate of any county in the US in 2014.

The following cities and communities include DACs within the Imperial IRWM Region:

- Heber
- Niland
- Ocotillo
- Seeley
- Brawley
- Calexico
- Calipatria
- El Centro
- Holtville
- Imperial
- Westmorland

Figure 7: Imperial IRWM Region DACs





### 3.2.3.1 Needs Identified in the IRWM Plan

The *Imperial IRWM Plan* was written in 2012. Because the IRWM Plan was not updated in accordance with DWR's 2016 Guidelines, this Region is not currently considered an active IRWM Region. Imperial County was awarded a DACI Planning grant in 2017 and the County participated in this Water Needs Assessment process. Through discussion with the County, many of the DAC needs identified in the *2012 IRWM Plan* are still considered needs today.

For the *2012 IRWM Plan*, a DAC Needs Assessment and inventory of facilities was performed in the area. This included stormwater needs, potable water distribution systems, and wastewater collection systems in each community. Through this assessment, the following water management challenges were identified in the *2012 IRWM Plan*:

- **Flooding** – Many of the DAC communities within the Imperial IRWM Region are faced with flooding issues due to a lack of proper stormwater infrastructure. Areas are in need of stormwater conveyance systems and retention basins to decrease flooding and stagnant water due to the lack of drainage.
- **Water Supply** – Ten communities in the Imperial Region receive untreated water which they treat and deliver for industrial purposes. All of these communities either require repairs and/or expansions to their facilities in order to properly treat and distribute water to their users. The April 2010 earthquake damaged several of these facilities, requiring storage and distribution system repairs. Others are in need to replacing older sections, especially pipes. Almost all of these communities need expansions to their storage and facilities.
- **Wastewater** – Communities are in need of funding to upgrade wastewater treatment plants. There is a need for expanding treatment plant capacity and replacing older parts of the system. Some of the wastewater treatment plants need to additionally be updated to tertiary treatments to meet NPDES permit requirements or to meet grant or energy industry compliance.

### 3.2.3.2 Needs Identified by Literature Review

In addition to the *2012 IRWM Plan*, the City of Brawley's *2015 Urban Water Management Plan (UWMP)* and City of El Centro's *2015 UWMP* provide additional information on the Region's needs.

Most raw water within the Imperial IRWM Region is received from the Colorado River via the Imperial Irrigation District's (IID) All-American Canal and the Central Main Canal (City of Brawley, 2015). This water is used to meet all current agricultural and non-agricultural water demands within the IID service area. Approximately 96% of IID imported water is used for agriculture in the Imperial (City of El Centro, 2015). However, non-agricultural water use is projected to increase as population growth increases municipal water demand, increased geothermal energy production increases industrial water demand, and environmental and recreation uses will increase (City of El Centro, 2015). The City of Brawley has secure water source reliability and does not view climate



change as an impacting factor because the city's water demands are significantly lower than their available supply (City of Brawley, 2015).

Communities within the Imperial Region will not produce recycled water because there is a limited ability or willingness to pay among rate-payers (City of Brawley, 2015 and City of El Centro, 2015). The capital costs to construct recycled water facilities are prohibitive relative to the costs of purchasing IID imported water. Instead of focusing on recycled water production, most of these same communities identify the need for grant funding to upgrade wastewater treatment plants (City of Brawley, 2015 and City of El Centro, 2015). These wastewater facilities discharge into the Salton Sea via IID drains and the New and Alamo rivers. The wastewater flows help sustain habitat along the discharge routes and the Salton Sea itself. The Salton Sea depends on agricultural and IID system discharges, rainfall, and municipal wastewater inflows to offset the impacts of evaporation on salinity levels. However, the water quality of the agricultural drains are high in TDS and other contaminants, which makes them unusable as potable or irrigation water sources (City of Brawley, 2015).

According to the City of El Centro UWMP, groundwater found in the Imperial is of poor quality and is generally unsuitable for domestic or irrigation purposes, although some is pumped for industrial (geothermal) use. Some areas that are outside the IID service area, such as the East Mesa and West Mesa of the City of El Centro, use groundwater as their sole supply. Beneath East Mesa the groundwater quality is moderate to poor and has been locally contaminated by seepage from All American and East Highline canals (City of El Centro, 2015). High concentrations of nitrate and fluoride are common in the drinking water as well as potential elevated concentrations of sulfate (City of El Centro, 2015). There are also elevated levels of selenium present in IID drain water which is thought to be an imported contaminant from the Colorado River supply (City of El Centro, 2015).

Based on the Cities of Brawley and El Centro *2015 UWMPs*, the key strategies to prioritize for future programs and projects include:

- **Supply Storage** – As reported in the *2012 Imperial IRWM Plan*, groundwater storage and banking of the Colorado River underflows water determined to be a high priority program for diversifying the regional water supply portfolio (City of El Centro, 2015). This program would help ensure a more reliable and sustainable water supply to meet future demands.
- **Accurate Usage Readings** – The City of El Centro is replacing all older meters to gain more accurate readings on water usage within their service area (City of El Centro, 2015).
- **Water Supply Diversity** – As stated in the *2012 Imperial IRWM Plan* and by the City of Brawley (2015), future projects and programs that increase the amount of water supply available during all types of years should be implemented.

The Human Right to Water Data Tool by OEHHA, considers Imperial to generally have a large range of water quality, accessibility, and affordability. The largest differentiating factor between score ranges is if the water provider supports DACs and/or SDACs. The water systems for these communities tend to be more vulnerable to supply outages or shortage since the Imperial typically only has one supply source, IID imported water, and with few backup emergency sources. Since

these systems also have a greater proportion of DAC water users, there tends to be more financial constraints on the water system since the customers are generally less financially able to afford necessary system upgrades. Lastly, some of the water systems within Imperial DACs and/or SDACs have a low affordability ratio because the median household income is too low for the cost of the average water bill. The Human Right to Water Data Tool supports the statement that Imperial needs outside financial assistance to support their water systems and there needs to be more security in the region's supply source.

Needs compiled from literature review summarized and discussed at the October community meeting are highlighted below.



**Identified Water Needs: Imperial IRWM Region**

- Reliant on Colorado River for drinking water
- Majority agricultural uses
- Poor groundwater quality
- Lack of adequate stormwater infrastructure
- Example: City of Brawley 50% of stormwater is combined sewer overflow
- Lack of taxes for district improvements
- Salton Sea increasing salinity

*Photo Credit: Imperial County America's Job Center of California Facebook page.*

More information on the water challenges of identified through literature review can be found in Appendix A.

### **3.2.3.3 Needs Identified through Outreach**

One non-profit organization supplied additional needs for the Imperial IRWM Region through the questionnaire (Appendix B). The respondent characterized the Imperial IRWM Region as a predominantly Hispanic community. About 75% of the community uses Spanish as their primary language, and about 45% only use Spanish. Rural areas lack basic infrastructure such as roads, housing, and tap water and rely on septic systems for wastewater. The area is reliant on the Colorado River for water, and therefore droughts have huge price implications for communities, especially with diversions/transfers of drinkable water to larger metropolitan areas, affecting availability of water for Imperial.

The region is reliant on agriculture. Lateral canals purvey water from the Colorado River for agricultural uses, but many rural communities use this non-potable water for everyday use. Many do not have access to water filters and need to purchase tap water, making drinking water less affordable and accessible. Increasing population growth only increases the vulnerability of Imperial communities. Increasing water transfers from the Salton Sea to larger metropolitan areas is leading to increasing salinity and lower water levels in the Salton Sea with accompanying public health hazards. Drinking water infrastructure for rural communities was identified as the top water challenge in need of funding.

Additional feedback noted that the IRWM region boundaries does not include many SDACs outside of IID's service area such as Winterhaven and Palo Verde. The methodology of region formation and funding disbursement does not support these SDACs.

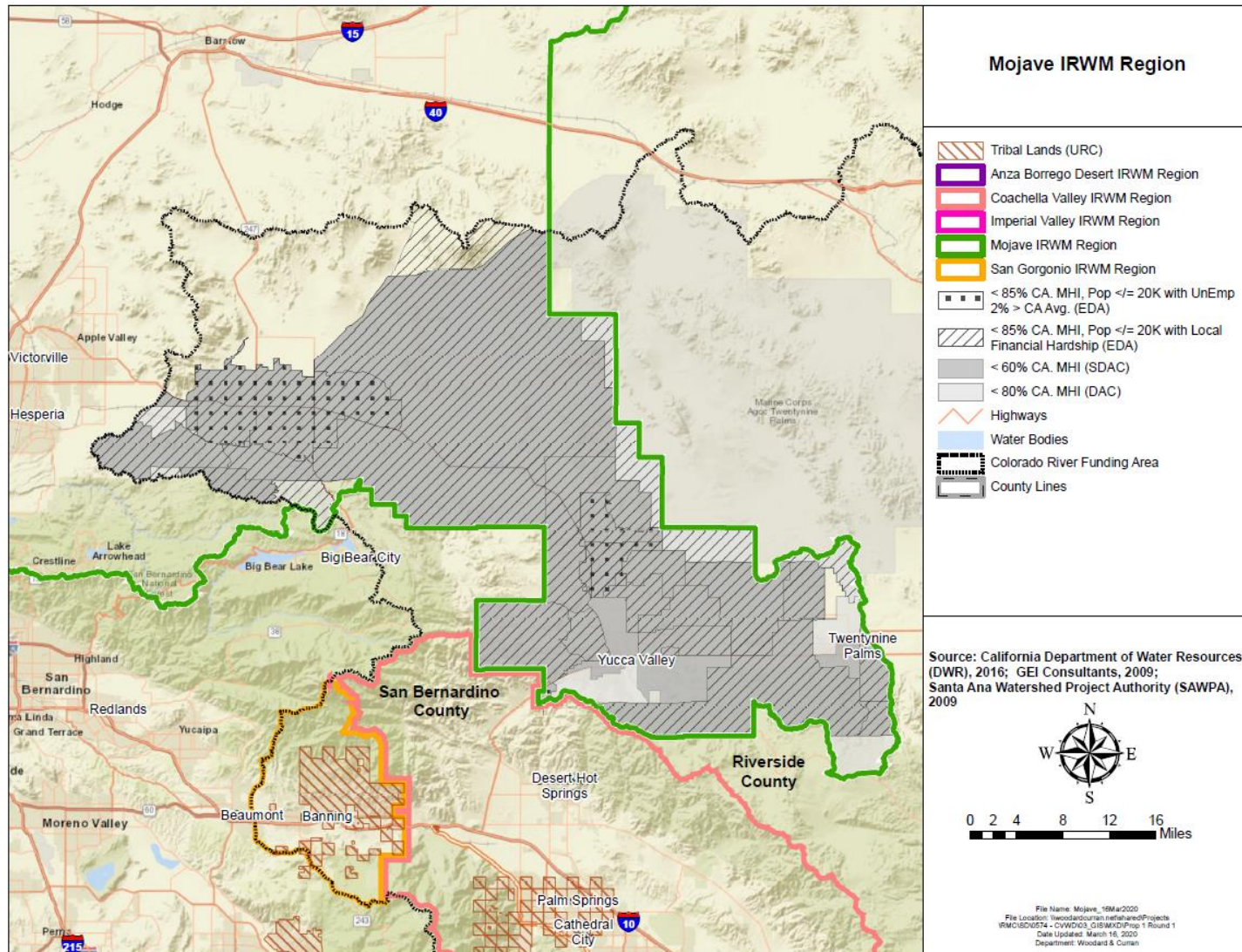
### 3.2.4 Mojave IRWM Region

The Mojave IRWM Region is over 5,400 square miles with a population of approximately 450,000 people and is located within two Funding areas, the South Lahontan and Colorado River Funding Areas, as seen in the figure below. Within the CRFA, approximately 97% of the Mojave IRWM Region is considered DAC, including both urban and rural areas. However, this data does not account for current land uses or development, therefore exact this population percentage may not be accurately represented.

The Mojave Water Agency (MWA) serves the area and primarily consists of small urban centers with fairly low population densities. The following cities and communities include DACs within the Mojave IRWM Region:

- Johnson Valley
- Joshua Tree
- Landers
- Lucerne Valley
- Pioneertown
- Twentynine Palms
- Yucca Valley

Figure 8: Mojave IRWM Region DACs





### 3.2.4.1 Needs Identified in the IRWM Plan

The *Mojave Region IRWM Plan* was updated in 2018 and was utilized to characterize the region and determine water and wastewater needs. The summary of the analysis is included in this section.

The region relies on imported water from the State Water Project (SWP), surface water, and groundwater for its supply. SWP water supplies are used to help recharge the groundwater basin in Mojave River Valley and Morongo Basin.

Several challenges face the Mojave IRWM Region's drinking water supply. The Mojave Region is a closed basin with no outfall for discharge so increase in salts is a continuous challenge. There is also concern for the ability to meet water quality regulations in certain groundwater subareas. Groundwater supplies are affected by contamination from historical land uses, threats from improper well abandonment, and changes in imported water quality. The presence of natural constituents of concern also pose a challenge.

Victor Valley Wastewater Reclamation Authority and Hi-Desert Water District manage wastewater treatment plants for portions of the Mojave region. Additionally, a wastewater treatment plant in Twentynine Palms was recently proposed. The rest of the region is served by individual septic systems. There is a desire to upgrade septic systems to sewer systems to prevent the septic systems from contributing nitrates to groundwater. The region, like many others in the CRFA, is susceptible to flash flooding.

DAC key issues, challenges, and priorities as identified in the Mojave IRWM Plan include:

- **Identify Needs** – Understand the needs of different DACs in the region
- **Education** – Help educate the communities about requirements and opportunities
- **Financial Assistance** – Support DACs to apply for assistance
- **Water Supply** – Help improve water management systems, including water quality, that serve DACs.

### 3.2.4.2 Needs Identified by Literature Review

MWA is the regional wholesale provider in the Mojave IRWM Region who is responsible for managing groundwater resources and ensuring there is a reliable water supply within its service area boundaries. According to the *MWA 2015 UWMP*, MWA's water supply consists of natural surface water, return flow from pumped groundwater not consumptively used, and wastewater imports. The majority of the supply is sourced from groundwater. Many of the sources that recharge the groundwater basin have high annual variability, such as the flows from the Mojave River and supplies from the SWP. These groundwater basins are also sufficiently large which allows for continued water use during dry periods with only a temporary decline in groundwater levels.

There are numerous groundwater quality issues within the MWA service area, including arsenic, nitrates, iron, manganese, Chromium VI, and TDS (MWA, 2015). Arsenic, iron, manganese, nitrates,

TDS, and chromium VI are naturally occurring constituents. TDS and nitrates also occur from human activities such as anthropogenic loading and agricultural operations (MWA, 2015).

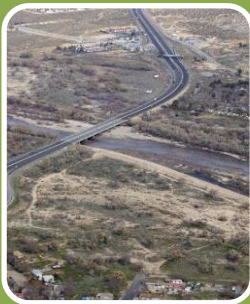
Maintaining water quality for supplies increase water reliability by ensuring that deliveries are not interrupted due to water quality concerns. Degradation of water supply sources can increase treatment costs prior to consumption. Currently, water quality does not materially affect water supply reliability in the region. There are some small areas that have undesirable local concentrations of several constituents where remedial action has been identified (MWA, 2015).

Originally, the MWA service area solely depended on local groundwater supplies; however, the supply sources have been supplemented with SWP water. The variability in SWP supplies does affect the ability of MWA to meet water supply needs for its service area, and SWP water is injected into the groundwater basin for recharge when available (MWA, 2015).

In order to maintain future water sustainability, MWA has started the Small Water Systems Assistance Program which provides resources for DAC and SDAC small water systems that lack expertise, staff, and funding to meet the system's water reliability, conservation, and quality standards (MWA, 2015). Within the MWA service area there are 36 small water systems and 65% of these systems meet the criteria of DAC (MWA, 2015).

The Human Right to Water Data Tool shows that recorded water systems within the Mojave IRWM Region have the best score for water quality. In general, the Region has average accessibility and poor water affordability. The water quality score shows that most of the systems within the region do not have contaminant compliance issues. The water accessibility score shows that there are some gaps in system capacities which is typically due to the system serving DACs or SDACs since these communities do not have the financial capabilities to financially support the system in upgrades. The low water affordability score demonstrates that the Mojave IRWM Region is mainly comprised of DACs and SDACs since the median household incomes for this region are not high enough in comparison to the water bill costs to make water services affordable. Based on MWA UWMP and the Human Right to Water Data Tool, it seems that the Mojave IRWM Region needs support in financial assistance for the DACs and water systems to improve water supply reliability and quality.

Needs compiled from literature review summarized and discussed at the October community meeting are highlighted below.



### Identified Water Needs: Mojave IRWM Region

- Reliant on imported water as well as local surface water and groundwater resources
- Less predictable supply and groundwater overdraft
- Finance and affordability
- Groundwater quality (closed topographic basin)
- Looking to upgrade septic to sewer (existing septic leaking nitrates)
- Concern for meeting MCLs
- Susceptible to flash flooding (physical and economic damage)



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*Photo Credit: Mojave Water Agency.*

More information on the water challenges of identified through literature review can be found in Appendix A.

### **3.2.4.3 Needs Identified through Outreach**

The Mojave IRWM Region did not participate in the questionnaire, but representatives of the region were involved in the Water Needs Assessment process and October 2019 Community Meeting.

Water needs discussed at the Community Meeting in October were confirmed and discussed by attendees. The biggest identified needs of the region are groundwater quality concerns and septic to sewer conversion. Septic tanks impact groundwater quality and there is general concern over meeting MCLs. Onsite wastewater failures in the past have compelled the construction of additional wastewater treatment plants in the area. The High Desert Water District Water Reclamation Facility recently completed construction in September 2019 to address the prohibition of septic tank discharges in the Town of Yucca Valley.

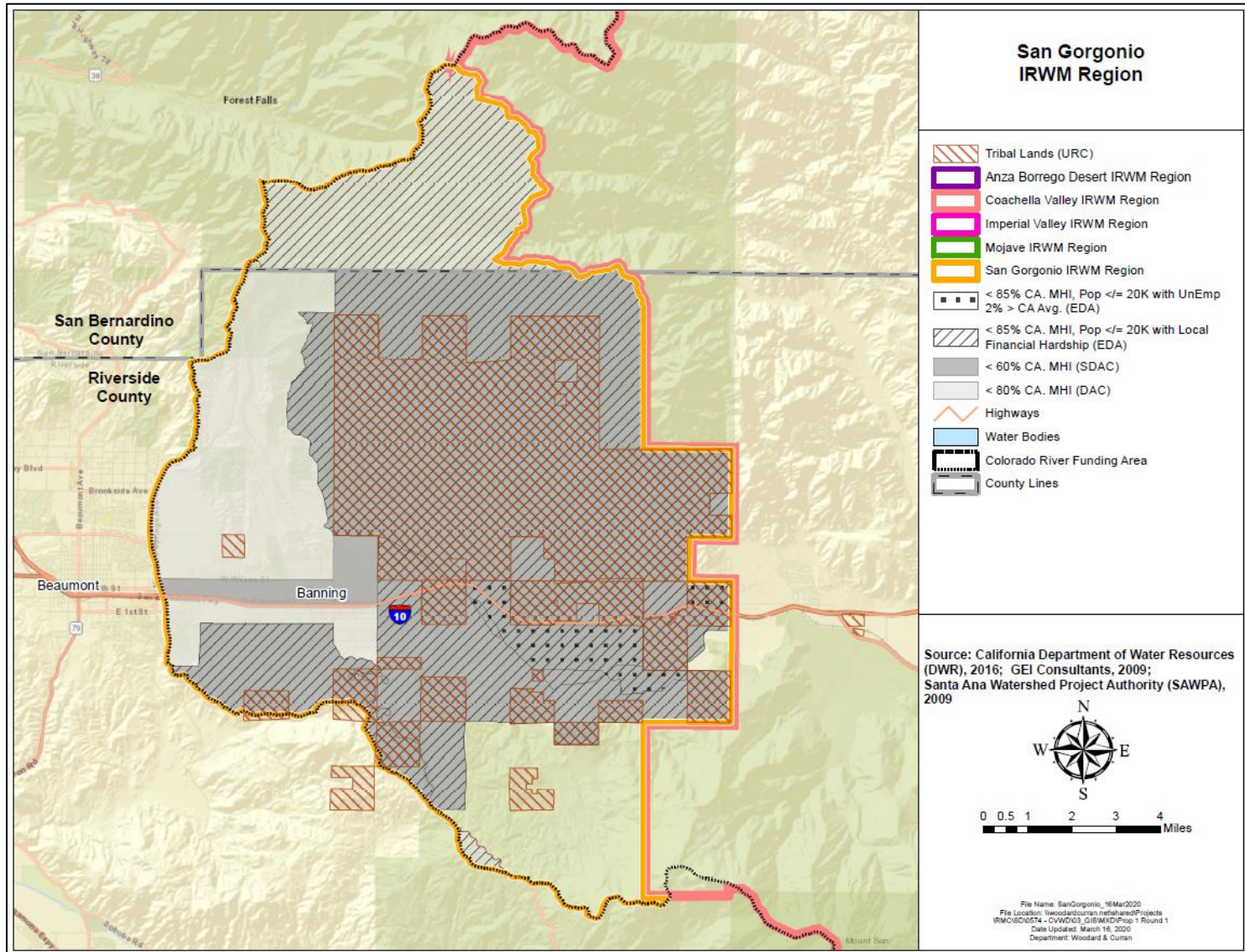
See Appendix B for more information on water needs from questionnaire respondents.

### **3.2.5 San Gorgonio IRWM Region**

The majority of San Gorgonio IRWM Region residents live in the City of Banning, while the remaining population is primarily concentrated within the unincorporated areas of Cabazon and Banning Beach and the Morongo Band of Mission Indians Reservation. Approximately 99% of the IRWM Region is considered DAC, and 17% of the Region's DAC areas qualify as a SDACs. This IRWM Region has a diverse population in comparison to the County of Riverside and has historically been known as an affordable area for retirement. The following communities have been identified as DAC within the Region:

- Banning
- Unincorporated Riverside County
- Unincorporated San Bernardino County

Figure 9: San Gorgonio IRWM Region DACs



### **3.2.5.1 Needs Identified in the IRWM Plan**

The San Gorgonio IRWM Region is the newest IRWM region in the CRFA, completing its first *San Gorgonio IRWM Plan* in 2018 (Woodard & Curran, 2018).

Many of the DACs in the SGIRWM Region rely on significant infrastructure to serve relatively small and sparse populations. This can be challenging for the small, local water resource management agencies to adequately finance new projects. Due to the Region's high DAC population, all of the Region's needs described in the 2018 IRWM Plan apply to its DACs. Goals 8 and 9 of the IRWM Plan in particular focus on supporting DACs to ensure all communities have access to reliable water supply and adequate wastewater treatment in addition to promoting future economic development.

All the residential areas within the SGIRWM Region are categorized as DACs by DWR definition. As a result, water supplies within the Regional DACs must be affordable, accessible, and in compliance with state and federal requirements to meet the needs of the DACs. Many DACs within the Region are in rural and remote areas, creating challenges in finding affordable ways to maintain and/or improve reliable water supplies.

The region's drinking water is provided mostly by local groundwater sources as well as imported water and surface water. The region also receives SWP supplies via the East Branch Extension and water supply from diversions from the Whitewater River through the Whitewater Flume. Water supply is expected to exceed average annual supply by 2045 (Woodard & Curran, 2018).

The City of Banning and the Morongo Band of Mission Indians both have their own wastewater treatment plants, though many residential homes on the Morongo reservation are served by septic systems. The rural residential areas of the region are served by on-site wastewater treatment systems or septic systems. The region as a whole is looking to upgrade from septic systems and on-site wastewater treatment systems to a sewage system.

Because the majority of drinking water comes from groundwater, the IRWM Region is focused on protecting the high quality of existing groundwater resources from emerging sources of contamination, including nitrates as a result of long-term discharges from septic systems.

Stormwater runoff from the San Bernardino Mountains and surrounding foothills can cause infrequent, high volume flows along the San Gorgonio River system. Flash flooding is an issue due to low soil-percolation. Generally, most of the flood control infrastructure in the Region provides protection from 100-year floods, although there is threat of increased damages due to increased urbanization.

### **3.2.5.2 Needs Identified by Literature Review**

A number of technical studies were incorporated into the recent IRWM Plan discussed above including the *Water Supply Reliability Study*, the *San Gorgonio Region Recycled Water Study*, and 2010 and 2015 Urban Water Management Plans for the City of Banning and San Gorgonio Pass Water Agency.

Local surface water and imported water supplies are used to recharge the groundwater basins. According to the IRWM Plan, Regional Water Purveyors include San Gorgonio Pass Water Agency is a wholesale water agency that supplies imported water to the region. The City of Banning provides water and wastewater service to residents in Banning and in some unincorporated areas of Riverside County. The City of Banning additionally instilled a policy through its *General Plan* to extend water and sewer infrastructure as part of the City's goal to enhance the quality of life for all Banning residents. Based on the City's *General Plan*, Banning operates 21 potable wells plus three wells co-owned with the Beaumont-Cherry Valley Water District, and provides domestic water services approximately 23 square miles, including 30,500 people, without the use of imported water (although their facilities are constructed to convey SWP water (Woodard & Curran, 2018). Banning Heights Mutual Water Company's service area covers approximately one square mile with approximately 200 domestic water meter connections. Cabazon Water District provides potable water to 910 domestic meter connections within the unincorporated area of Riverside County. High Valleys Water District serves approximately 220 customers and gets 100% of its supply from Banning. And the Morongo Band of Mission Indians provides water to residents within the reservation.

Water needs discussed above are comprehensive for the region. These needs include water supply reliability, availability, and system resiliency, maintenance of water quality and resiliency to changes in water quality requirements, flood management and infrastructure enhancement, habitat protection, and climate change adaptation (Woodard & Curran, 2018).

Based on the Human Right to Water Data Tool, the San Gorgonio IRWM Region seems to have good water quality and accessibility. The limited data for water affordability shows again there is vulnerability in DAC areas since the ratio between median household income and water bill costs are disproportionate and therefore unaffordable to DACs and SDACs.

Needs compiled from literature review summarized and discussed at the October community meeting are highlighted below.



### Identified Water Needs: San Gorgonio IRWM Region

- Reliant on groundwater in addition to imported water and surface water
- Limited local understanding of reliability of resources
- Groundwater quality
  - Septic systems require upgrades
  - Nitrates in groundwater from long-term discharges
- Flash flooding problems expected to be exacerbated by increased urbanization

*Photo Credit: City of Banning.*

More information on the water challenges of identified through literature review can be found in Appendix A.



### 3.2.5.3 Needs Identified through Outreach

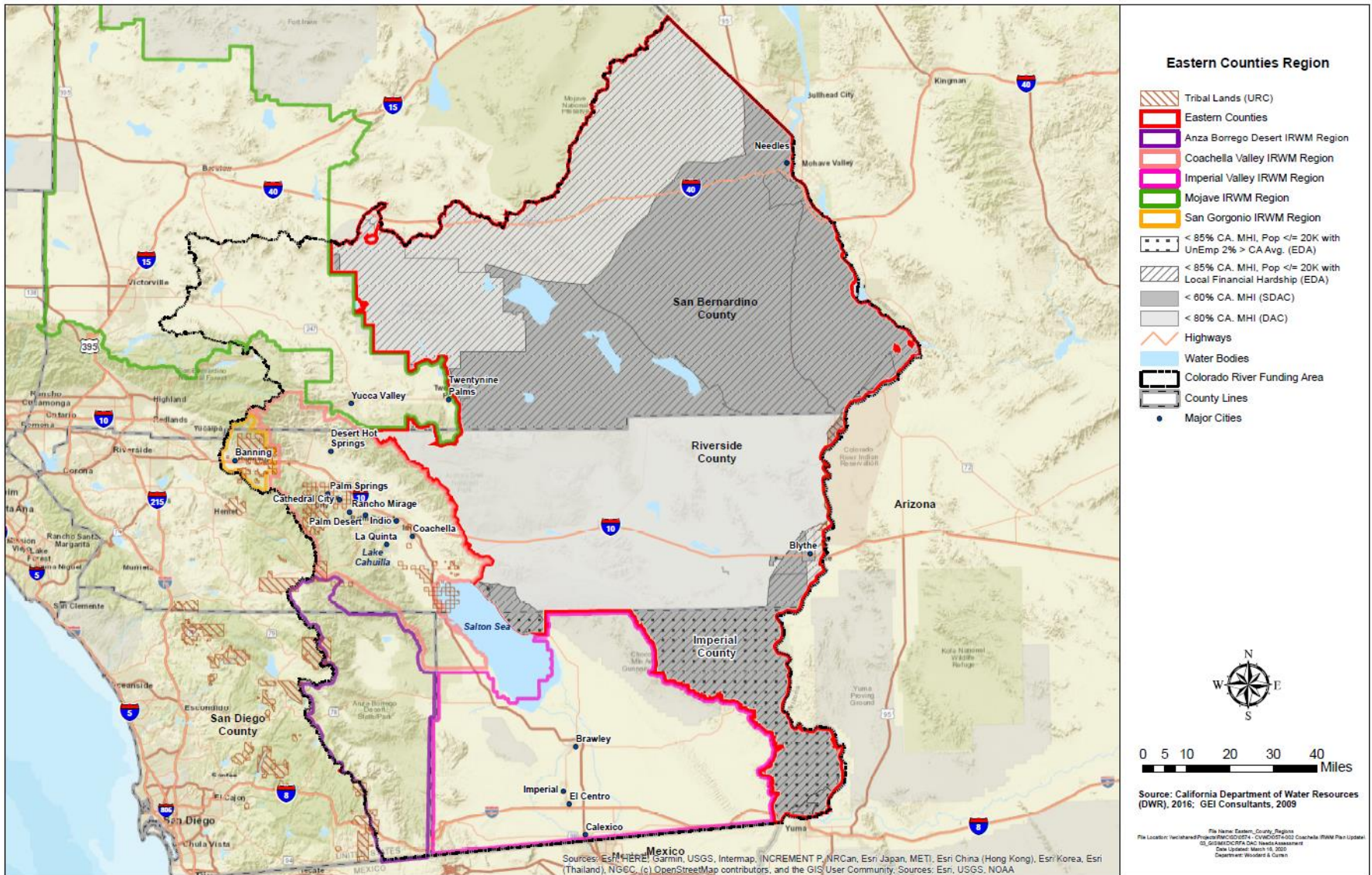
Two agencies responded to the Water Needs Questionnaire in the San Gorgonio IRWM Region. These agencies noted that most of the region is DAC. The San Gorgonio Pass Water Agency does not have a reliable water supply and frequently needs to buy water from another water agency to meet demand, especially during periods of high winds for fire protection. This situation has become even more complex as utilities now turn off power during periods of high winds, meaning that wells are non-operational during this time. Securing a reliable water supply through the Whitewater Flume and securing additional water supplies is of most concern to this IRWM region. Unreliable water supply leads to not having enough water to recharge the aquifers of the wells. One well has an increase in nitrates when the aquifer is not recharged, and drought and Chromium-6 are also of concern. However, drinking water is considered both accessible and affordable for the community by questionnaire respondents. See Appendix B for more information on water needs from questionnaire respondents.

### 3.2.6 Eastern Counties Region

The Eastern Counties area includes Eastern Riverside, San Bernardino, and Imperial counties. This area is considered 100% DAC. The unincorporated counties area consists of smaller, rural communities. In 2018, according to the Southern California Association of Governments (SCAG), the unincorporated area of San Bernardino County makes up 14.3% of the County population, 21% in Imperial County, and 16% in Riverside County. Larger communities within this area include:

- Blythe
- Needles
- Ripley
- Unincorporated Imperial County
- Unincorporated Riverside County
- Unincorporated San Bernardino County

Figure 10: Eastern Counties Region DACs



### **3.2.6.1 Needs Identified in the IRWM Plan**

The Eastern Counties region is not part of an approved IRWM Region, and therefore does not have an IRWM Plan. Due to DWR eligibility requirements, no IRWM projects have been completed in this area. Through the DACI Grant (2017), a placeholder has been included in the existing contract to provide up to \$100,000 in planning funds to the Eastern Counties or San Geronio IRWM Region. The CRFA Partners are currently in the process of identifying and submitting new projects for this \$100,000 set-aside to DWR.

### **3.2.6.2 Needs Identified by Literature Review**

Water needs for unincorporated DACs within San Bernardino County were addressed in the *2015 Upper Santa Ana IRWM Plan*. These DACs have expressed a need for access to residential water conservation products that they cannot afford; especially homeowners and landlords who cannot afford to replace old water inefficient fixtures. There is also a challenge with water affordability for the communities who receive water from their local utility provider. The community members cannot afford to pay their water bills; however, the utility needs a certain amount of revenue to keep the utility up to state and federal standards. Providers additionally need to replace aging infrastructure to ensure customers have a reliable water supply, but financial support cannot come from rising water costs.

San Bernardino Municipal Water Department (SBMWD) in the Upper Santa Ana IRWM Region has developed multiple programs that help customers, including DACs, avoid delinquency actions from unpaid bills. Some of these programs include payment plans, account extensions, and an extended notification system. Yucaipa Valley Water District (YVWD) has also converted septic systems to sewers within their service area to improve groundwater quality by preventing groundwater contamination and replacing failing septic systems. YVWD also created a program that replaces older, inefficient water devices through direct installations.

The largest city in eastern San Bernardino County is Needles, with almost 5,000 people. Needles is reliant on groundwater and has four wells that pump approximately 781 million gallons per year (City of Needles Water Department, 2019). However, only one of these wells has the ability to deliver potable water to its residents. The other wells provide non-potable water, have limited supply, or exceed the States' standard for iron and manganese. The well must run 23 hours a day in the summer to meet demand, when desert temperatures near 120 degrees, making the City vulnerable, and threatening water supply reliability.

The largest city in eastern Riverside County is Blythe, with almost 20,000 residents. According to the 2007 *City of Blythe General Plan*, the City supplies the majority of its municipal water demand through the underlying Palo Verde Valley Groundwater Basin that covers approximately 200 square miles. As of 2007 there was no evidence of substantial overdraft by the City; however, there are others interested in pumping the basin which could cause issues in the future. Additionally, agricultural water is primarily supplied by the Colorado River through the Palo Verde Irrigation District which minimizes stress on the groundwater basin (City of Blythe, 2007). There is a concern for the declining water quality through groundwater contamination (City of Blythe, 2007). Both

extensive agricultural production and septic leakage create high concentrations of nitrates that then percolate into the groundwater and impair drinking water (City of Blythe, 2007).

Both Imperial County and San Bernardino County use a mixture of imported Colorado River water and groundwater for their water supplies (Imperial County, 1993 and San Bernardino County, 2007). The Imperial has shallow aquifers that are affected by inflows from the Colorado River waters, evaporation, agricultural tile drains, and seepage from drains and tiles. High salinity from the agricultural fields has resulted in higher salinity in the groundwater with TSS concentrations between 1,000 and 3,000 mg/L. Unincorporated communities within Imperial have their own water treatment facilities for treating and distributing water to their customers (Imperial County, 1993).

Generally, the Human Right to Water Data Tool does not have very much data on this region of the CRFA. Overall, it can be assessed that the water quality is relatively good with several risks of exposure to contaminations and/or issues with compliance. The accessibility scores show that many of these areas are dependent on only one or two types of sources, which is typically groundwater for this region, and the systems serve DACs and/or SDACs which makes it financially challenging to maintain and update infrastructure. There is almost no data on water affordability, but again the few data points show that the median household income compared to the cost of water makes the water unaffordable for these communities.

More information on the water challenges of identified through literature review can be found in Appendix A.

### ***3.2.6.3 Needs Identified through Outreach***

Stakeholders in the Eastern Counties region touched on broad themes of capacity, funding, and aging infrastructure, which in some cases is up to 100 years old. Specifically, DACs were described by community-based organizations as being very strapped for funding, with little capacity to apply for grants for needed infrastructure or lacking funding for operation and maintenance (O&M) to maintain that infrastructure once it is implemented. Limited revenue from smaller service areas make it difficult to maintain infrastructure and keep water affordable.

The “silver tide” of retiring operators for drinking water and wastewater systems is a major concern for small water systems. When operators retire, they often take their knowledge of water systems with them and it is a challenge to hire and maintain operators due to low salaries and lack of training. Operator training at local high schools and colleges could help address this issue.

Another issue experienced in rural communities and older urban communities includes deteriorating water and wastewater infrastructure. In some areas, the tap water is undrinkable and residents must purchase bottled water. Other infrastructure-related needs included the need for a consolidated water system to promote economic development and provide for a growing and urbanizing community, the need to maintain and repair wells, and the need to maintain and repair septic systems. Water reliability is severely threatened by drought.

Specific issues in communities were identified are discussed in more detail below. While these challenges are not unique to each area, they highlight specific challenges that participants chose



to highlight during outreach and are therefore seen as pressing water and wastewater management needs.

Riverside County Community Service Areas (CSAs) are separate water and wastewater districts that do not receive general property tax from the County. These districts need funding for infrastructure but cannot raise rates. These CSAs: Ripley, Mesa Verde, and Desert Center, have 1, 2, 3, -TCP, TDS, Iron, and Manganese issues and need to connect either to each other or to a water or sewer system to solve these issues. Desert Center has a 52-year old Activated Alumina water treatment plant that needs to be updated or replaced to address water quality issues.

The Chiriaco Summit Water District gets water for its 50 residents and businesses from the Colorado River. Storage capacity issues occur when Metropolitan Water District of Southern California shuts down the Colorado River Aqueduct for maintenance once (or more) per year. The District only has a 1-acre-foot storage reservoir, requiring severe conservation and portable restrooms to be brought in at the rest stop during the shut-downs. In this area, water affordability is an issue and infrastructure are almost 100 years old, requiring revenue for maintenance.

Adversely, in the City of Blythe, water storage is not the issue, rather aging infrastructure causing water quality and wastewater issues. Water delivered to some homes is brown, prompting residents to purchase bottled water on tight budgets. The Murphy Street water plant filters iron and manganese and blends with well water, but chlorine addition exposes the brown color. This settles in the pipe, and water main breaks scour the system, delivering brown water to homes. Sand filter systems are therefore needed at well heads to address this issue.




*City of Blythe. Photo Credit: Nicole Poletto, Woodard & Curran*

Imperial County is reliant on agriculture, but most funding opportunities related to water are for drinking water systems. The Bard Water District is in unique location with the eastern boundary shared with Arizona and southern border shared with Mexico. Half of the land area is shared with the Quechan Indian Tribe and all Colorado River water is used for agriculture. The most significant water challenges for this community is irrigation water for agriculture. Replacing aging infrastructure, automated systems and measurement devices, and lining canals and ditches for water conservation and produce safety. There are approximately 40 miles of earthen canals and ditches in the area with cost prohibitive construction projects required. Without effectively managing irrigation systems, catastrophic crop failure or E.coli contamination of produce could result.

Agencies believe smaller rural agencies would not be able to administer or handle grants (especially federal grants) for water system improvements. Additionally, funding is not distributed in a way that is helpful. Distributing grant funds according to population density does not give small, rural communities sufficient funding. Further, the slow grant funding process requires both time and money, which can cause issues when faced with severe need. The City of Blythe noted interest in becoming an IRWM Region. They had tried to form an IRWM Region in the past, but had difficulty finding a third partner to form an RWMG. For smaller water districts, working together through the IRWM program could make a big impact.

A summary of needs identified through outreach for this Assessment is summarized below.



**Identified Water Needs through Outreach: Eastern Counties Region**

- Aging infrastructure
- Limited revenue causes balancing act between upgrading infrastructure and affordable rates
- Ability to hire and retain licensed water professionals
- Water quality issues and reliance on bottled water supply
- Agricultural water supply

*Photo Credit: Jay Calderon, The Desert Sun: <https://www.desertsun.com/>.*

### 3.2.7 Tribes

According to DWR, all tribes are considered underrepresented, and are therefore included in this Water Needs Assessment. A total of 18 tribes are located within the CRFA, five of which are located outside of IRWM Regions. Tribes located within the CRFA include:

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Mission Indians
- Cabazon Band of Cahuilla Mission Indians
- Cahuilla Band of Mission Indians
- Campo Band of Diegueno Mission Indians
- Cuyapaipe Community of Diegueno Mission Indians
- Los Coyotes Band of Cahuilla Mission Indians
- Manzanita Band of Diegueno Mission Indians
- Morongo Band of Cahuilla Mission Indians
- Santa Rosa Band of Cahuilla Mission Indians
- Santa Ysabel Band of Diegueno Mission Indians
- Torres-Martinez Band of Cahuilla Mission Indians
- Twenty-Nine Palms Band of Luiseno Mission Indians
- Fort Mojave Indian Tribe
- Chemehuevi Indian Tribe

- Colorado River Indian Tribe
- Quechan Tribe
- Cocopah Tribe


The Eastern Counties tribes includes the Fort Mojave Indian Tribe, Chemehuevi Indian Tribe, Colorado River Indian Tribe, Quechan Tribe, and Cocopah Tribe. The Water Needs Assessment focused on outreach to these tribes located in these non-IRWM Areas. These tribes are mostly located near the Arizona border.

### 3.2.7.1 Needs Identified in the IRWM Plan and Literature Review

Tribes are sovereign nations located throughout the CRFA. Tribal issues were mainly identified through the *2018 Coachella Valley IRWM/SWR Plan*. Outreach to Eastern Counties Tribal nations in the CRFA was conducted to better understand the full spectrum of issues facing Tribes in the region.

One tribal nation in the region have expressed concern about potential long-term effects of regional groundwater recharge operations on groundwater quality, specifically regarding the salinity of imported water that is used for groundwater recharge. Additionally, water supply and groundwater overdraft is of concern. Water resources should be managed sustainably to ensure water quality and supplies are sufficient to maintain cultural connections. Preservation of native plant species and habitats are vital to Tribal sovereignty and cultural practices. Lack of connection to water and sewer services are a region-wide issue that affects Tribal nations as well.

Needs compiled from literature review summarized and discussed at the October 2019 Community Meeting are highlighted below.



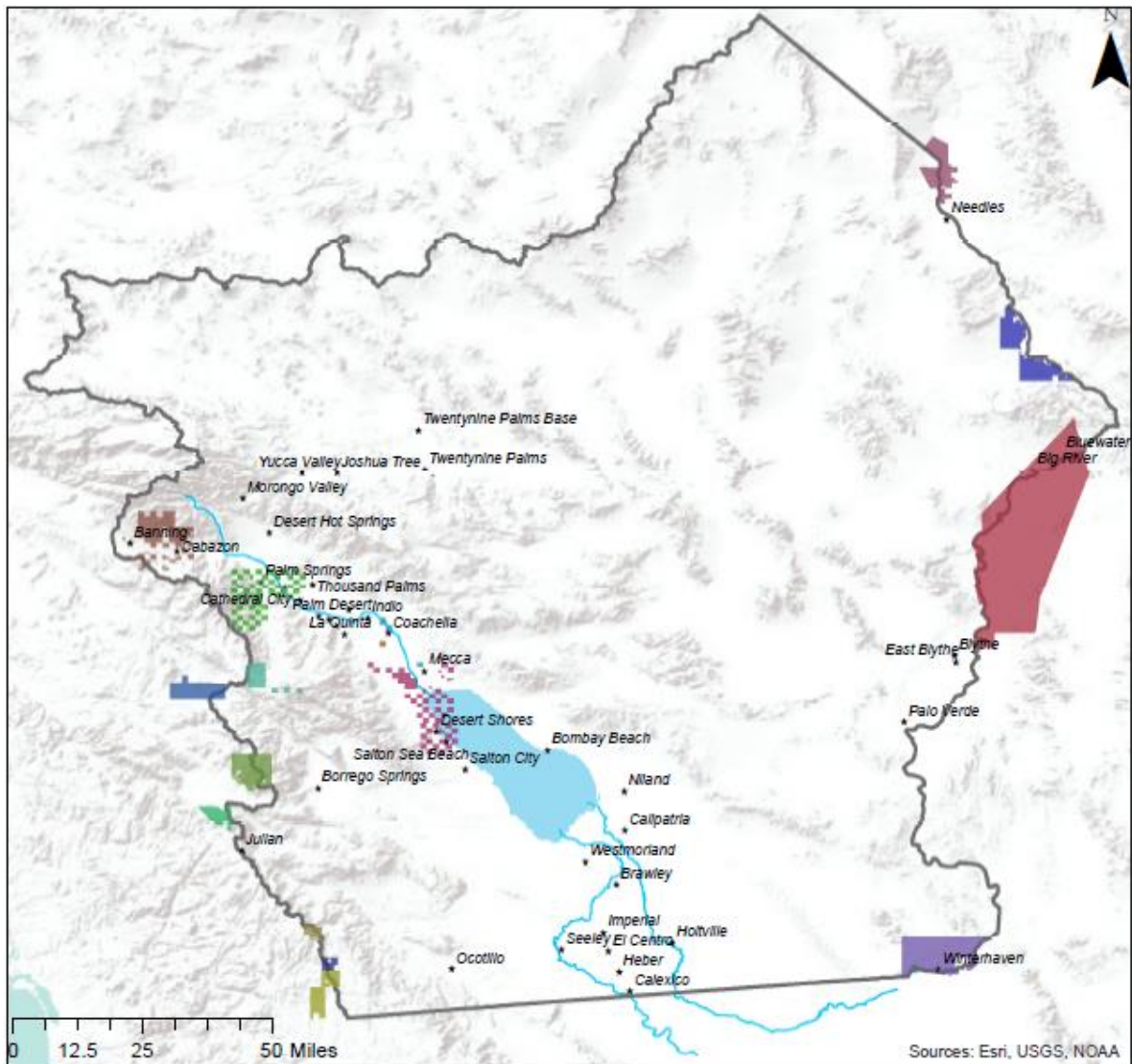
### Identified Water Needs: Tribes

- Groundwater quality
- Arsenic found in some areas making water unsuitable for use
- Long-term impact of groundwater recharge (salinity)
- Resource management for sustainability
- Groundwater supply - overdraft
- Preservation of native plants species and habitat
- Lack of connection to water and sewer services

*Photo Credit:* Wikipedia Page for the Chemehuevi Indian Tribe of the Chemehuevi Reservation: Lake Havasu.

Tribal water and wastewater needs are included within associated geographical regions in Appendix A.

**Figure 11: Tribes in the CRFA**



PMRY_TRIBE			
	Agua Caliente Band of Cahuilla Indians		Cocopah Tribe
	Augustine Band of Cahuilla Mission Indians		Colorado River Indian Tribe
	Cabazon Band of Cahuilla Mission Indians		Cuyamapue Community of Diegueno Mission Indians
	Cahuilla Band of Mission Indians		Fort Mojave Indian Tribe
	Campo Band of Diegueno Mission Indians		Los Coyotes Band of Cahuilla Mission Indians
	Chemehuevi Indian Tribe		Manzanita Band of Diegueno Mission Indians
			Morongo Band of Cahuilla Mission Indians
			Quechan Tribe
			Santa Rosa Band of Cahuilla Mission Indians
			Santa Ysabel Band of Diegueno Mission Indians
			Torres-Martinez Band of Cahuilla Mission Indians
			Twenty-Nine Palms Band of Luiseno Mission Indians

Source: Regional Water Quality Control Board, Colorado River Basin (Region 7)



### 3.2.7.2 Needs Identified through Outreach

Questionnaire input noted that the most pressing water challenge the respondent communities will face in the next 5-10 years is meeting water demand for a growing community. An expansion of the water system is needed. According to one questionnaire respondent, water is supplied from wells, and there are only two wells to supply the community. Therefore, an expansion of this water system is needed. Another participating tribe has one groundwater well and two backup wells.

Additional needs identified through outreach is tribal "Allottee" land. Allottee land is owned by individual tribal member(s), but it is the responsibility of the person who leases the land to provide water and sanitation services. These areas fall under the jurisdiction of the EPA and are often severely neglected. Trash dumps on Allottee land attract vermin and leach contaminants into the groundwater. Federal actions are needed to help bring these areas back into compliance. Residents have serious drinking water quality and access issues and the land is difficult to manage. Emergency funding for replacement drinking water is needed.

## 4 Findings

One of the goals of the DACI Program is to help IRWM Regions better understand and engage with DACs. Through the Water Needs Assessment, several barriers to participation were identified. Consequently, opportunities were developed to respond to these barriers in order to improve DAC engagement within the CRFA IRWM program.

### 4.1 Summary of CRFA DAC Needs

Through the process of this Water Needs Assessment, the following challenges were identified as facing DACs in the CRFA:

1. **Drinking water:** Drinking water infrastructure for rural communities and lack of access to municipal supplies was the number one issue identified throughout the CRFA.
  - a. **Access to safe drinking water** – Many DACs lack basic infrastructure such as roads, housing, and tap water. Without access to safe drinking water, many communities must purchase bottled water on tight budgets. Agricultural communities may utilize non-potable water for everyday use without access to potable water.
  - b. **Need for water system consolidation** – DAC communities who do not receive municipal water supply need consolidation funding, especially unpermitted systems. Many of these systems are migrant farmworker mobile home parks with deteriorating wells and/or old, shallow agricultural wells that do not access the deep aquifer. Some areas are not able to connect to municipal services even if a water main is nearby due to the prohibitive cost of retrofitting onsite piping or installing fire protection per County standards. It is also important to acknowledge



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- a. **Aging infrastructure upgrades are needed** – The water conveyance system for some CRFA communities has aged. Cast iron/concrete lines are over 100 years old and subject to water line breaks and distributing brown water through residential taps. This compels residents to purchase bottled water on tight budgets. Smaller communities do not have enough revenue to pay for wide scale replacement and rehabilitation without disproportionately raising water rates.
    - b. **Ability to hire and retain operators** – The ability to hire and retain licensed water professionals to operate infrastructure is a major concern for small water systems. When operators retire, they often take their knowledge of water systems with them and it is a challenge to hire and maintain operators due to low salaries and lack of training.
  4. **Reliable water supply:** CRFA communities rely on Colorado River water, other imported water, and/or groundwater in addition to recycled water and local surface water.
    - a. **Decreasing dependency on imported water supplies** – Some regions in the CRFA focus on projects that contribute to groundwater recharge or wastewater recycling to increase the reliability of water supply. Some tribes are concerned with the impacts of groundwater recharge on water quality in their communities.
    - b. **Groundwater overdraft** – Several groundwater basins within the CRFA are in overdraft, some critically overdrafted without a reliable recharge method. This has led to mandatory water use reduction requirements in some areas. Several basins have or are developing Groundwater Sustainability Plans (GSPs) or have approved functional Alternative Plans, but there is concern that implementation of groundwater management strategies may stifle economic development in some areas.
    - c. **Lack of water storage** – In some rural communities, water storage is an issue and is needed to provide a reliable water supply.
    - d. **Meeting water demand for community growth** – Some communities are concerned that rising populations will further exacerbate water vulnerabilities.
  5. **Flash Flooding:** Much of the CRFA is desert, which features an extremely hot, dry climate punctuated with torrential wet weather events. Those rain events cause normally dry washes to gush with flood flows and cause damaging flooding to developed areas.
    - a. **Need for flood facilities** – Many rural communities are not located near regional flood facilities and the construction of large-scale flood control facilities for once or twice annual storms is cost-prohibitive, so many DACs face occasional devastating flooding. Rural communities need stormwater conveyance systems and retention basins.
  6. **Tribal “Allottee land”:** Allottee land is owned by tribal member(s), but it is the responsibility of the person who leases the land to provide water and sanitation services.
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There is no State regulatory oversight (no authority for SWRCB Division of Drinking Water and County Department of Environmental Health).

- a. **Access to safe, reliable water quality and living environments** – Residents on Allottee land often have serious drinking water quality and access issues and the land is difficult to manage due to issues with landowners who lease the land from tribal member(s). Trash dumps on Allottee land attract vermin and leach contaminants into the groundwater. Federal actions are needed to help bring these areas back into compliance.
7. **Financing:** Funding is required to address the needs listed above, which many DAC communities do not have capacity for. Technical and funding assistance is required.
- a. **Need for small system support** – Small water systems are unable to adjust water rates to address needs. Water rates can't sustain necessary infrastructure changes, and many small systems already struggle with the rising cost of water. Many small water systems have small staff and have limited capacity and require technical assistance for grant programs.
  - b. **Limited ability to implement consolidation projects with certain rate payer funds.** Although there is a need for water and sewer consolidations throughout DACs, water and wastewater districts have limited ability to implement consolidations projects outside of their service area. Due to Proposition 218, rate payers can't be charged for services that they don't receive. Therefore, even though water and wastewater districts are willing to implement water and sewer consolidations, they are limited in their ability to fund these infrastructure projects and the financial burden falls on DACs. If a grant is secured, most grant funds cannot be used to pay for connection fees or private connection lines.
  - c. **Lack of representation in IRWM** – Some parts of the CRFA are not covered by an IRWM Plan. Others have out-of-date IRWM Plans and do not regularly convene due to lack of funding. This lack of representation prevents those DAC communities from accessing IRWM Grant Program funding that could help to address the range of water resources needs identified in this Water Needs Assessment.

These challenges are not considered an exhaustive list but have been identified as water and wastewater challenges for DACs throughout the CRFA; many in need of funding assistance to address.

## 4.2 Summary of IRWM Barriers and Opportunities

### 4.2.1 Barriers to IRWM Participation

Through this Water Needs Assessment effort, a number of barriers to address the water management needs listed above were identified. These barriers include:



1. **Lack of representation.** Two of the five IRWM regions within the CRFA are currently inactive due to out-of-date IRWM Plans without funding to update. Some parts of the CRFA are not covered by an IRWM Plan. The Eastern Counties region is not part of an approved IRWM Region and tends to be small, rural communities in need of funding for planning and infrastructure projects. It is an expensive, time consuming process to become an IRWM Region, and many agencies do not have the capacity or funds to participate. Stakeholders may have limited broadband access and may not have the capacity to participate in IRWM meetings.
2. **Eligibility of short-term solutions to address safe drinking water needs.** The IRWM Grant Program supports integrated projects with 15-years of benefits. Short-term solutions to address safe drinking water for communities are not eligible for IRWM grant funds.
3. **DACs need smaller, more frequent grant opportunities.** Limited revenue makes infrastructure upgrades cost prohibitive. Small, rural community projects are not competitive in the current IRWM grant process due to smaller population and benefit sizes.
4. **Limited capacity to pursue IRWM funding.** Pursuing IRWM grant funding can be challenging for some DAC stakeholders due to limited capacity to stay informed about opportunities, prepare competitive applications, and administer the grant if awarded.
5. **Difficulty with funding cash flow and processes.** DAC representatives often have difficulty managing cash flow under the grant reimbursement process, with a lengthy wait for receipt of grant funds following invoice payment and submittal. The 50% advanced payment for DACs does not fully address this problem, as these issues then occur in the second half of the project.

### 4.3 Opportunities to Address Barriers to Participation and DAC Needs

Based on the results and experience of conducting the Water Needs Assessment, CRFA Partners have identified opportunities to overcome the barriers described above. Opportunities described here may apply to either or both the statewide IRWM Program and local efforts. Some of these opportunities may require additional funding from the State to implement:

1. **Establish and maintain relationships created with Tribes and DACs through the DAC Needs Assessment,** ensuring inclusion into future planning efforts, especially areas that are not included in an active IRWM Region. Funding is needed to follow up and continue to connect with the Eastern Counties areas that have expressed needing help.
2. **Expand funding opportunities to include planning projects** for IRWM Program eligibility and better coverage of the entire CRFA. Provide planning grant funding (for project design and environmental compliance) and technical assistance to projects that benefit DACs before, during, and after the application process. Lift grant funding caps for planning projects. Ensure groundwater (SGMA) funding support is equally accessible to all

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medium/high priority basins, regardless of Plan status (Alternative Plan or Groundwater Sustainability Plan).

3. **Provide technical assistance to allow small, underrepresented groups to participate** in the IRWM process and pursue project funding. Technical assistance could also be provided to support small, underrepresented groups in pursuing outside State and local opportunities.
4. **Streamline advanced payment for DACs** so that communities do not bear the brunt of high project costs while waiting for reimbursement.
5. **Continue to support changes at the State level that will encourage more DAC participation in funding opportunities**, including adjustments to how advanced payment is administered, increasing flexibility in work plans, and contracting changes to address tribal and DAC needs.

## 5 Conclusion

As a result of outreach conducted for this Water Needs Assessment and long-term, ongoing outreach programs in existing IRWM Regions, the CRFA's IRWM Programs are seeing positive changes in DAC relationships and engagement. The Eastern Counties region was disconnected from IRWM Program activities, but could benefit from an integrated, collaborative approach. The IRWM Program successfully created interest for outside organizations and communities to become newly involved in the program, which may make the CRFA more collaborative. Eastern Riverside County and Imperial County are interested in becoming their own IRWM region, and the Coachella Valley IRWM Region is interested in adding the eastern shore of the Salton Sea (including Bombay Beach, North Shore, and Hot Mineral Spa) to its IRWM Region. This area is an SDAC and has water and sewer service from CVWD, but with infrastructure that requires upgrades.

DAC engagement through Community Meetings and the Water Needs Questionnaires identified some new potential projects for future IRWM grant applications. These projects include water and wastewater consolidation, updated water and wastewater master plans, and maintenance for aging infrastructure. With this knowledge, the IRWM Program can help support organizations during the process, including through targeted outreach regarding funding opportunities and technical assistance opportunities.

The collaborative, integrated, and regional approach of the IRWM Program has proven to be effective. The IRWM Grant Program must determine how to best support small, rural communities while leveraging other State funding opportunities and sources. The DACI Call for Projects provided funding for planning project needs identified through this Water Needs Assessment, but once complete, future rounds of funding will not be available to the Eastern Counties region. The Water Needs Assessment identified several DAC needs and barriers, as well as opportunities for moving forward. Ultimately, the Water Needs Assessment will be used by DWR to develop funding priorities that align with the needs of DACs. This Water Needs Assessment will inform DWR in future rounds of IRWM funding, as well as the CRFA's IRWM Programs.

# **APPENDIX A: SUMMARY OF DAC NEEDS IDENTIFIED THROUGH LITERATURE REVIEW**

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Appendix A.  
Colorado River Funding Area Water Needs Assessment  
DAC Needs Based on Literature Review

City or Community	"Describe community characteristics (i.e. MHI, population, or other DAC indicators)"	Describe involvement with local IRWM Governance (Involvement described as Previous Involvement, None, or Unknown)	Drinking Water							Wastewater		Stormwater	Other		System Financing		Sources	
			Source(s) of water	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc.)	Water Quality Potential Exposure (y/n) OEHHHA Tool	Accessible for community (y/n) OEHHHA Tool	Affordable for community (y/n) OEHHHA Tool	Identify any drinking water system issues	Type of system	Describe any insufficient wastewater system issues	Identify stormwater/urban water runoff/flood management issues	Identify drinking water, wastewater, or stormwater regulatory/compliance issues	Identify other conditions/ issues (drought, etc.)	"Identify the rate structure (i.e. block, tiered)"		"Describe system financing needs (i.e. operation and maintenance costs)"
<b>CRFA Subregions (IRWM Regions)</b>																		
<b>Anza Borrego Desert IRWM Region</b>	<ul style="list-style-type: none"> <li>The area is covered under the San Diego County General Plan, and San Diego County has land use planning authority.</li> <li>Whole IRWM Region is mostly SDAC and EDA, small portion DAC. There are no communities that are not considered DAC</li> <li>The median household income for the Borrego Springs CDP is \$36,583 per year (U.S Census Bureau 2018) - Considered both an SDAC and EDA</li> <li>The Census estimates that 45% of households receive Social Security income with the average being \$18,201 per year and 30% of households have retirement income with the average being \$19,371 per year.</li> <li>The SDAC communities have two sub-populations, one with households with school age children and one of retirees.</li> </ul>	No existing IRWM Plan, not eligible for Prop 1 funding	<ul style="list-style-type: none"> <li>Reliant on groundwater and lies outside of the authorized place of use for Colorado River water and has no Colorado River water rights or entitlements.</li> <li>Do not use surface water or imported water sources</li> </ul>	Primarily agricultural wells	6 wells for supply, 11 wells for observation/other, 46 groundwater level monitoring wells and 30 groundwater quality monitoring wells in groundwater quality network from GSA		No - Water Quality score is 4 out of 4. The system has no contaminant with potential high exposure (4), no acute contaminants (4), 14 out of 14 contaminants had req. data in study period (4), no contaminants with at least 1 MCL violation within study period (4), and no years of non-compliance (4).	Yes - Accessibility score is 3.5 out of 4. The system is not vulnerable to groundwater system outages (4), there is a medium institutional capacity and the system is located within a DAC/SDAC (2), and the system has no M&R violations (4).	NA - Affordability score not available	<ul style="list-style-type: none"> <li>Borrego Springs Groundwater Subbasin (98 square miles) is designated by DWR as high priority and critically overdrafted</li> <li>Localized groundwater level depression south of the Borrego Sink</li> <li>Arsenic concentrations were increasing in multiple Borrego Water District water supply wells until 2014, but have since decreased</li> <li>Historically, there are no nitrate-related WQ issues that have led to well reconstruction, abandonment, and replacement</li> <li>TDS and Sulfate are increasing in concentration with simultaneous declines in groundwater levels</li> <li>Monitoring activities along with USGS publications (USGS 2014, 2015) have summarized groundwater quality conditions in sufficient detail to identify arsenic, nitrate, sulfate, fluoride, TDS, and radionuclides as the Subbasin's main constituents of concern (COCs)</li> </ul>	•Septic	<ul style="list-style-type: none"> <li>Anthropogenic sources (irrigation and wastewater return flows) are likely the main contributors of nitrates to groundwater. Nitrates concentrations historically above MCL in 5 wells. All wells today currently meet MCLs</li> </ul>	<ul style="list-style-type: none"> <li>There are no managed stormwater recharge facilities in the Plan Area</li> <li>Infrequent rainfall in the region results in periods of extended zero-groundwater recharge</li> <li>Susceptible to flash floods</li> <li>Removal and disposition of accumulated sediment from large storm events is costly</li> </ul>	<ul style="list-style-type: none"> <li>All BWD wells currently have water quality adequate for non-potable use (i.e., Title 22 CCR) without treatment.</li> </ul>	The desert has coarse alluvial sediments which makes it very easy to overdraft the basin because it is easy to withdraw plenty of water but recharge is minimal.	BWD has a tiered rate structure	With a tiered rate structure and state funding should help sustain water affordability for SDAC communities.	<p>1. <b>Source:</b> Groundwater Sustainability Plan for the Borrego Springs Groundwater Subbasin (August 2019). Available at: <a href="https://www.sandiegocounty.gov/content/dam/sdc/pds/SGMA/Draft-Final-GSP-Combined.pdf">https://www.sandiegocounty.gov/content/dam/sdc/pds/SGMA/Draft-Final-GSP-Combined.pdf</a></p> <p>2. <b>Source:</b> Status of Groundwater Quality in the Borrego Valley, Central Desert, and Low-Use Basins of the Mojave and Sonoran Deserts Study Unit 2008-2010: California GAMA Priority Basin Project. Available at: <a href="https://pubs.usgs.gov/sir/2014/5001/">https://pubs.usgs.gov/sir/2014/5001/</a></p> <p>3. <b>Source:</b> 2009 IRWM Plan</p>
<b>Coachella Valley IRWM Region: General</b>	DACs mainly in rural communities, low population density	2018 IRWM Plan Update, RWMG was formed in 2008	Groundwater pump ped up from the Whitewater River Groundwater Basin; Imported SWP; Recycled wastewater, Natural surface water from mountain streams	190		Yes - Water Quality had a score range of 3.96-4. Overall CVWD, Desert WA, Indio WA, and CWA had 4 out of 4 which means there has been and are no potential health risk from the water quality at these providers. Mission Springs WD did get a 3.96 score since there were several contaminants (out of 14) did not have water sampling data available for them.	Yes - Coachella overall is in the >3 to 4 range. Except for the Indio hills area to the east which is >2 to 3. CVWD to the east and next to salon sea got 3 out of 4. 3 for vulnerability of groundwater system to outages because only has 5-9 sources (?). 2 on institutional capacity because medium system and DAC/SDAC. There were decreases in scores for having monitoring and reporting violations (MSWD and CWA) and for the system being economically limited because it is located within a DAC/SDAC (CWA).	Affordability: overall a 2-3 but most of the region has no data. The biggest reason for decreases in scores was because the system's service area/Coachella Valley region has a low median household income that is too low to afford the cost of water.	Septic systems causing water quality issues, 65% of residents in DACs do not drink their tap water and 33% believe it is poor quality, lack of access in some areas to clean drinking water	Sewer line, septic system	On septic systems, causing water quality issues that can affect drinking water and local economy (tourism to hot springs)	Thousand Palms and East Valley are not protected by regional flood control facilities, flash flooding due to low soil percolation rates	Many unpermitted mobile home parks in East Valley that do not receive the required water system monitoring	Many of the smaller DAC/SDAC communities and their nearby water provider are financially limited with how many communities need sewer conversions versus the cost.			<p>1. <b>Source:</b> 2014 Coachella Valley Integrated Regional Water Management Plan</p>	
<b>Coachella Valley IRWM Region: East</b>	Coachella Valley: East/West will be divided at Washington Street. Central will include information on Cathedral city, an island of DAC in the middle, more wealthy area of the Valley. Note: Services Area extends into Imperial.	CWA, CVWD, and IWA are member agencies of the CVRWMG and attend monthly meetings. Last IRWM Update - December 2018.	CVWD depends on more than 95 active wells where water is pumped and stored in more than 63 distribution reservoirs			See above	See Above	See Above	<ul style="list-style-type: none"> <li>Coachella in general -- Overdrafted groundwater in some areas (Imperial IRWMP)</li> <li>Compliance Issues in many of the mobile home parks and DACs</li> <li>Wells contain detectable levels of chromium-6</li> </ul>	<ul style="list-style-type: none"> <li>Wastewater Treatment Plant</li> <li>Septic Systems</li> </ul>	<ul style="list-style-type: none"> <li>Many of the communities in the Eastern Coachella Valley are classified as DACs who depend on inadequate septic systems; are not working properly, are poorly maintained or may have breached wells.</li> <li>Septic tank discharges are causing a nitrate problem in the shallow aquifer</li> </ul>	Experience extremely high flows during storm events in the Coachella Valley Stormwater Channel (CVSC) which pose a public health and safety hazard	Exceeding MCL limits for arsenic	Warmer temperatures could increase water demands for landscape irrigation, municipal water use, and evaporative losses from canals and open reservoirs.	<ul style="list-style-type: none"> <li>CVWD - tiered</li> <li>CWA - fixed</li> <li>IWA - tiered</li> </ul>		<p>1. <b>Source:</b> Coachella Valley Water Management Plan Update, MWH, Water Consult, 2012.</p> <p>2. <b>Source:</b> Sanitation Priorities Task Order Tech Memo, W&amp;C, 2019.</p> <p>3. <b>Source:</b> East Coachella Valley Water Supply Project - System Prioritization (Task 2) Tech Memo, W&amp;C, 2018.</p>	
<b>Coachella Valley IRWM Region: West</b>	<ul style="list-style-type: none"> <li>Population is estimated at 44,600 based on 2010 census data (includes Cathedral City) - for Mission Creek/Garnet Hill Area</li> <li>City of Desert Hot springs MHI: \$36,326</li> <li>City of Palm Springs MHI: \$45,693</li> </ul>	CVWD, DWA and MSWD are member agencies of the CVRWMG and attend monthly meetings. Last IRWM Update - December 2018.			DWA chlorinates the water	See above	See Above	See Above	<ul style="list-style-type: none"> <li>Subsurface outflow from the Whitewater River subbasin to the Garnet Hill subbasin may occur during periods of high volumes of imported water recharge in the Whitewater River subbasin - important because groundwater production from the Garnet Hill subbasin is not currently subject to a replenishment assessment.</li> <li>Groundwater overdraft</li> <li>Monitoring for arsenic</li> <li>Wells contained detectable levels of chromium-6</li> <li>Improperly constructed or unused wells may be sources of contamination to the groundwater basin by providing a pathway for pollutants to enter the aquifer</li> </ul>	Secondary	<ul style="list-style-type: none"> <li>The wastewater ponds percolating secondary effluent tend to clog more frequently due to the higher suspended solids load and require more frequent maintenance</li> <li>Septage from waste disposal and percolation of treated wastewater are the primary contributors to TDS in the groundwater</li> </ul>		<ul style="list-style-type: none"> <li>Warmer temperatures could increase water demands for landscape irrigation, municipal water use, and evaporative losses from canals and open reservoirs.</li> <li>Mesquite Hummocks</li> </ul>		<p>1. <b>Source:</b> Coachella Valley Water Management Plan Update, MWH, Water Consult, 2012.</p> <p>2. <b>Source:</b> Mission Creek/Garnet Hill Water Management Plan, MWH, 2013.</p>			

Appendix A.  
Colorado River Funding Area Water Needs Assessment  
DAC Needs Based on Literature Review

City or Community	"Describe community characteristics (i.e. MHI, population, or other DAC indicators)"	Describe involvement with local IRWM Governance (Involvement described as Previous Involvement, None, or Unknown)	Drinking Water								Wastewater		Stormwater	Other		System Financing		Sources
			Source(s) of water	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc.)	Water Quality Potential Exposure (y/n) OEHA Tool	Accessible for community (y/n) OEHA Tool	Affordable for community (y/n) OEHA Tool	Identify any drinking water system issues	Type of system	Describe any insufficient wastewater system issues	Identify stormwater/urban water runoff/flood management issues	Identify drinking water, wastewater, or stormwater regulatory/compliance issues	Identify other conditions/ issues (drought, etc.)	"Identify the rate structure (i.e. block, tiered)"	"Describe system financing needs (i.e. operation and maintenance costs)"	
<b>Coachella Valley IRWM Region: Central</b>	City of Cathedral City MHI: \$45,693	DWA is a member agency of the CVRWGM and attend monthly meetings. Last IRWM Update - December 2018.	DWA pumps water using more than 25 wells drilled to a depth between 1000' and 1200'		DWA pumps water using more than 25 wells drilled to a depth between 1000' and 1200'	DWA chlorinates the water	See above	See Above	See Above	Subsurface outflow from the Whitewater River subbasin to the Garnet Hill subbasin may occur during periods of high volumes of imported water recharge in the Whitewater River subbasin - important because groundwater production from the Garnet Hill subbasin is not currently subject to a replenishment assessment. •Groundwater overdraft •Monitoring for arsenic •Wells contained detectable levels of chromium-6 •Areas of concern include declining groundwater levels, artificial recharge using SWP Exchange water, saline subsurface flows from the Desert Hot Springs Subbasin, and nitrate from septic tanks may affect water quality •Improperly constructed or unused wells may be sources of contamination to the groundwater basin by providing a pathway for pollutants to enter the aquifer		The wastewater ponds percolating secondary effluent tend to clog more frequently due to the higher suspended solids load and require more frequent maintenance •Septage from waste disposal and percolation of treated wastewater are the primary contributors to TDS in the groundwater	•61 acres in the Cathedral City area are in the fluvial (water-borne) and aeolian sand transport area		Warmer temperatures could increase water demands for landscape irrigation, municipal water use, and evaporative losses from canals and open reservoirs.	•CVWD - tiered •DWA - fixed		1. Source: <a href="https://dwa.org/about-us/water-supply/groundwater">https://dwa.org/about-us/water-supply/groundwater</a> 2. Source: Mission Creek/Garnet Hill Water Management Plan, MWH, 2013.
<b>Imperial Valley IRWM Region</b>	The 2012 IRWM Plan has not been updated. This Region no longer considered active. 81% of the population is considered DAC, 55% of which is SDAC.	No active IRWM plan. 2012 was last update	Colorado River, groundwater for areas outside of the IID service area				Water Quality: overall score between 1.7 to 3.96. There were or are issues with compliance with primary drinking water standards, MCL violations, and lengths of non-compliance. These issues all increased the potential risk to public health and decreased the system's weighted score.	Accessibility score range of >1-3. All of the systems found within this region had low vulnerability scores because they are dependent on one or two supply sources and may not have dependable emergency sources. There were also issues with the system's ability to upgrade infrastructure and maintain proper services due to the economic constraints of the area (i.e. the system is located in a DAC/SDAC). Brawley and Seeley had 1-2 M&R violations.	Affordability: range from 0 to 4. Some of the systems received low scores on their affordability because they are located in areas with a low median household income (e.g. DAC/SDAC) that makes the cost of water unaffordable. There were also areas with no data available.	Coordinating with the adjacent Coachella Region is particularly important because of the mutual reliance on Colorado River supplies, linkages through the QSA/Transfer Agreements, and the geographic relationship to the Salton Sea which is impacted by the QSA/Transfer Agreements (Imperial IRWMP); communities struggle to afford water; groundwater is of poor quality and not suitable for potable use.  Groundwater found in the Imperial Valley is of poor quality and is generally unsuitable for domestic or irrigation purposes, although some is pumped for industrial (geothermal) use. Beneath East Mesa the groundwater quality is moderate to poor and has been locally contaminated by seepage from All American and East Highline canals (City of El Centro, 2015).  Communities within the Imperial Region will not produce recycled water because there is a limited ability or willingness to pay among rate-payers (City of Brawley, 2015 and City of El Centro, 2015). Additionally, the capital costs to construct recycled water facilities are prohibitive relative to the costs of purchasing IID imported water. Most of these same communities identify the need for State, Federal, or private sector funding to upgrade wastewater treatment plants (City of Brawley, 2015 and City of El Centro, 2015).	There are 14 wastewater treatment plants in the Imperial Region; most of which are treated to secondary treatment level.	Each city operates its own wastewater treatment plant, no waste water recycling at any treatment facility.  4.1.5.6 Niland Sanitary District and Golden State Water Company The design capacity of the existing wastewater treatment plant is 0.5 million gallons per day, with an average daily flow of 0.08 million gallons. The level of treatment is primary with chlorination/fluoridation ponds. The wastewater treatment plant is out of compliance with their NPDES permit for consistently exceeding the allowable copper concentration. The California Economic Development Department issued a grant to Niland Sanitary District to help deal with infiltration problems. Liners placed in much of the collection system reduced infiltration substantially. Prior to the pipe lining, the average daily flow into the wastewater treatment plant was 0.18 million gallons. This equates to nearly a 56 percent reduction in flow. Despite the improvements to the collection system, Niland Sanitary District may dissolve due to lack of operating funds. The area is severely disadvantaged and many residents do not pay taxes that would go to Niland Sanitary District. Priority projects for the wastewater system include:	• Flooding issues due to inadequate stormwater drainage/infrastructure • City of Brawley - 50% of stormwater combined with sewer overflow • City of Calipatria storm drain does not have adequate capacity to provide flood protection - lack of stormwater infrastructure • City of Holtville has no stormwater infrastructure - 60% of runoff flows to an industrial area due to lack of drainage • Seeley has no stormwater infrastructure in place • County of Imperial - has little stormwater infrastructure; parking areas serve as detention basins which infiltrate the water into the ground or discharge to Ash Cone/El Alamo	• Most areas need to develop a Master Drainage Plan or a stormwater plan to address their drainage issues. • City of Brawley		1. Source: Appendix Q Imperial IRWMP Stakeholder Assessment 2. Source: Imperial IRWMP 2012 3. Source: City of Brawley 2015 UWMP 4. Source: City of El Centro 2015 UWMP		
<b>Mojave IRWM Region</b>	Approximately 97% of the IRWM region qualifies as a DAC, there are DACs in both rural and urban areas	Amended IRWM Plan in 2018	The region is reliant on imported SWP and local surface water and groundwater resources, and water is managed through conjunctive use. SWP water supplies help to recharge the groundwater basin in the Mojave River Valley and Morongo Basin. (Imperial IRWMP)		850 (according to section 10.3.1.3 of Mojave IRWM plan)		The water systems within this area scored a 4 on water quality which means there has been and are no potential health risks associated with water quality issues.	Water Accessibility has a score range of 3.3-3.75. All the systems scored were lowered slightly due to their supply source vulnerability (meaning either they don't have enough sources or emergency sources to be resistant against high variability in supply source changes). Twenty-nine Palms WD and Joshua Basin WD also got lower scores because there is economic constraints with potentially maintaining and updating infrastructure since the systems are located within a DAC/SDAC area. Lastly, Hi Desert WD had one-two M&R violations which lowered its score.	Water Affordability score between 0-2. All the systems received low scores because their service areas have low median household incomes which makes the cost of water unaffordable.	• Mojave Region is a closed basin with no outfall for discharge so increase in salts is a continuous challenge • Concern for meeting water quality regulations in certain groundwater subareas • Existing septic systems contributing nitrates to groundwater • Changes in imported water quality • Presence of natural constituents of concern in water supplies • Threats from improper well abandonment • Deal with contamination of groundwater from previous (historical) land uses	Wastewater Treatment Plant, rest of service area is handled by individual septic systems	Looking to upgrade septic systems to sewer systems	Flash flooding	Potential competing uses for water supply		1. Source: Mojave IRWM Plan, June 2014 2. Source: 2015 Urban Water Management Plan for Mojave Water Agency		
<b>San Geronio IRWM Region</b>	17% of the region is qualified as a Severely Disadvantaged Community (SDAC), region covers Morongo Band of Mission Indians Reservation •56% of the population can afford the median priced home of \$298,000 •Goal #8 of the IRWM Plan	San Geronio is a new IRWM region, its first IRWM plan was completed in 2018	Water is imported from the SWP, pumped from wells, and diverted from the Whitewater River through the Whitewater Flume. Majority of drinking water in the region is from local groundwater.		30		Overall the water quality is good, with some risk of contaminant exposure.	Yes	There was limited data available for the area but it did show that the area has a low median household income that makes the cost of water unaffordable to DACs/SDACs		City of Banning and Morongo have Wastewater Treatment Plant; residential homes in Morongo reservation are on septic systems; Onsite wastewater treatment systems used in rural residential areas	region looking to upgrade from septic systems/OWTS to sewage system	Banning area has experience serious flooding problems and potential damages are expected to increase as it urbanizes; flash flooding due to low soil percolation rates			1. Source: San Geronio Integrated Regional Water Management Plan May 2018 2. Source: San Geronio Integrated Regional Water Management Plan Appendix B. Recycled Water Study		

## **APPENDIX B: SUMMARY OF QUESTIONNAIRE RESPONSES**

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Questionnaire Respondents	Community Characteristics		Drinking Water						Wastewater		Stormwater		Other		System Financing		
	Been involved in IRWM?	Describe community characteristics	Source(s) of water	Estimate number of wells	Accessible for community? (Y/N)	Affordable for community? (Y/N)	Identify any drinking water system issues:	Currently and historically, what are this community's most significant water challenges?	What do you see as the most pressing water challenge this community will face in the next 5 years? 10 years?	Type of System	Describe any insufficient wastewater system issues	What conditions have impacted drinking water quality and supply reliability?	Identify any stormwater/ urban water runoff/ flood management issues:	Is climate change considered a threat to the community's water supply?	Identify drinking water, wastewater, or stormwater regulatory/compliance issues if applicable	What challenge or concern mentioned in this questionnaire do you feel is most in need of funding?	Describe system financing needs (i.e. operation and maintenance costs):
<b>Eastern Counties IRWM Region</b>																	
<ul style="list-style-type: none"> <li>City of Needles</li> <li>Chemehuevi Indian Tribe</li> <li>Palo Verde College</li> <li>City of Blythe</li> <li>Riverside County Service Area 51, 62 &amp; 122</li> <li>Chiriaco Summit Water District</li> <li>Bard Water District</li> <li>Community Members</li> </ul>	<ul style="list-style-type: none"> <li>Yes (71%)</li> <li>No (29%)</li> </ul>	<ul style="list-style-type: none"> <li>Small community on the California side of Lake Havasu.</li> <li>Located on the Colorado River about 90 miles from the next major City.</li> <li>Very small communities of Desert Center, Mesa Verde, and Ripley all Disadvantaged Communities</li> <li>Small permanent community that provides water to the large traveling community on I-10, also the local businesses have the only public restrooms for 90+ miles, due to frequent state rest area closures</li> <li>Poor, disadvantaged, falling apart</li> <li>Unique location - Eastern Boundary (AZ) Southern Boundary (Mexico) All Colorado River Water used for Agriculture, Share half of area with Quechan Indian Tribe, our growers use land on both sides of Colorado River (AZ and CA).</li> </ul>	<ul style="list-style-type: none"> <li>Groundwater from a well</li> <li>Water from the tap is undrinkable. Must purchase water from retailers.</li> <li>Surface water already treated</li> </ul>	<ul style="list-style-type: none"> <li>Only 1 working well</li> <li>2 wells to supply community</li> <li>Each of the 3 systems have 2 wells each</li> <li>Quechan Indian Tribe ( One well - two backup wells), some more isolated farms have shallow wells (10-20). However almost everyone purchases drinking water. Ground water is slightly corrosive and attacks the metal fixtures.</li> </ul>	<ul style="list-style-type: none"> <li>Yes (87.5%)</li> <li>If purchased from a retailer (12.5%)</li> </ul>	<ul style="list-style-type: none"> <li>Yes (37.5%)</li> <li>No (12.5%)</li> <li>If purchased from a retailer, But to outfit a home with a filter system is expensive.</li> <li>It is high for some.</li> <li>Most individuals and families purchase bottled drinking water. Water is usually not treated (too hot in summer to use filters unless directly inside under sink.</li> </ul>	<ul style="list-style-type: none"> <li>Challenges with magnesium levels.</li> <li>Periodically turns colors (brown, red).</li> <li>The Ripley water system ground water contains 1,2,3 TCP.</li> <li>The quality of the water is horrible</li> <li>Water that comes from the taps in the summer is warm to hot. Some old pipes contain lead. Debris is usually present in lines after any repairs. Hydrants are old (cannot be opened or flushed). Water lines are undersized. Individual wells for isolated households - water is not treated.</li> </ul>	<ul style="list-style-type: none"> <li>Single water supply source</li> <li>Aging infrastructure</li> <li>System leaks</li> <li>Quality of water in the community is questionable</li> <li>Contamination of groundwater</li> <li>Currently, the twice-yearly shutdown of the CRA is our biggest challenge. We have to exist on about 1 AF of stored water for 4 weeks.</li> <li>Dirty water</li> <li>Irrigation Water for Agriculture: Replacing our aging infrastructure, becoming automated, accurate measurement devices, lining canals and ditches (Water conservation/produce safety). Construction projects are so costly now (\$1 million to line one mile). We have around 40 miles of earthen canals and ditches.</li> </ul>	<ul style="list-style-type: none"> <li>Aging infrastructure</li> <li>The community is growing, meeting water demand as the community grows will be a challenge that must be solved prior to growth</li> <li>Lack of river due to water being diverted outside the area. This prevents the community from promoting and growth due to the inconsistency in the water levels.</li> <li>Ability to hire and retain licensed water professionals</li> <li>Cost effective water treatment</li> <li>Increasing need for water storage and treatment</li> <li>Water is dirty and smells</li> <li>Lack of ability to manage water irrigation systems efficiency and safety due to deteriorated infrastructures (1909). Causing catastrophic crop failure (uncontrolled release/flooding from deteriorated infrastructure) and E.coli contamination of produce due to unlined canals and ditches.</li> <li>Subsequent water loss. High salinity of soil requiring pre-flush irrigation.</li> </ul>	<ul style="list-style-type: none"> <li>Septic</li> <li>Sewer</li> <li>Septic, Also some septic tanks are tied into variable grade sewer line to transport effluent - across river to Yuma. Lift station failures have resulted in flows into subdivisions, homes, roads and farm fields.</li> </ul>	<ul style="list-style-type: none"> <li>Infrastructure failure or maintenance. Perhaps the lack of knowledgeable personnel or adequate training.</li> <li>The sewer system in Ripley has had an ongoing problem with corrosion of Manholes.</li> <li>Drought - collateral damage - more irrigation - damage or compromise septic/ leach fields. Flooding - sewage/wastewater contamination runoff.</li> </ul>	<ul style="list-style-type: none"> <li>Unsure as to what makes the water undrinkable</li> <li>To date there have been no impacts to our water supply. It is a concern that we could be impacted by droughts in the future.</li> <li>Viability of they systems because a lack of funds.</li> <li>Quagga mussels that colonize in the CRA are impacting the water supply for this community and others</li> <li>Drought: water contains more contaminants, less water pressure/flow. Fortunately the costs of bottled water is low.</li> <li>Flooding (1980) many homes near canals and ditches were flooded as well as fields and crops.</li> </ul>	<ul style="list-style-type: none"> <li>Lots of washes in the area the flood during heavy rain.</li> <li>We have not had severe problems with flooding.</li> <li>Roads are flooded - can also breach farm fields.</li> </ul>	<ul style="list-style-type: none"> <li>Yes (37.5%)</li> <li>Maybe (50%)</li> <li>No (12.5%)</li> <li>The City relies on the Colorado River for water supply.</li> <li>If the Rockies experience less snow, that's less water for the communities in the lower Colorado River region.</li> <li>The City of Blythe is reliant on the Colorado River and groundwater to provide water to our residents. If droughts continue, our water supply could be affected.</li> <li>Drought: Water quantity reduction, especially during summer (increased demand by everyone) if winter precipitation not adequate to fill reservoirs water quality reduced (salinity and contaminants). Reduction of summer crops (produce), possible destruction of date, citrus, and pecan groves.</li> <li>Lowering of water table and possible shortage of ground water for wells.</li> <li>Flooding: Danger from increased/rapid precipitation (berm failure)</li> </ul>	<ul style="list-style-type: none"> <li>None</li> <li>Due to our proximity to the Colorado River we must comply with the State water Resources Control board guidelines and mandates related to septic systems, wastewater and storm water run off.</li> <li>Ripley TCP in the Ground Water</li> <li>EPA only funds drinking water testing for public/community units nor individuals homes.</li> </ul>	<ul style="list-style-type: none"> <li>Water infrastructure</li> <li>We need to expand our water system</li> <li>Drinking water to remove users from septic systems and place them on the City's sewer system.</li> <li>The system in Desert Center treatment plant, the Ripley TCP, and ageing water storage tanks along with the operation of a water treatment plant in CSA 122.</li> <li>Water storage during shutdowns of water source</li> </ul>	<ul style="list-style-type: none"> <li>The City has limited funds available in capital projects</li> <li>Operation and maintenance costs for repair and replacement of the City's water and sewer infrastructure</li> <li>Funding for O &amp; M usually only cover a temporary fix. Every project from major repairs to replacement of structures start at \$100K. Most grant require 50% matching. Also small districts don't have in-house staff (engineers, environmental compliance, grant writing, contract/constructi on management) to defray these costs.</li> </ul>
<b>Imperial Valley IRWM Region</b>																	
<ul style="list-style-type: none"> <li>Comite Civico del Valle</li> </ul>	<ul style="list-style-type: none"> <li>No (100%)</li> </ul>	<ul style="list-style-type: none"> <li>Imperial Valley is predominantly a Hispanic community. About 75% of the community use Spanish as their primary language, and about 45% only use Spanish.</li> <li>On economy, most of the jobs available are agricultural (or directly tie to agriculture e.g. packing, trucking/transportation, harvesting etc.) followed by medical industry and then service/hospitality. Rural areas lack proper basic infrastructure e.g. roads, sewage, housing, tap water etc.</li> </ul>	<ul style="list-style-type: none"> <li>Surface water</li> </ul>	<ul style="list-style-type: none"> <li>Yes (100%)</li> </ul>	<ul style="list-style-type: none"> <li>Yes (100%)</li> </ul>	<ul style="list-style-type: none"> <li>In Imperial Valley, there are lateral canals whose main purpose is to facilitate distribution of water to agricultural lands, however, many rural communities use this same water for everyday use (cooking, showering, gardening etc.) while few families are fortunate to have filters installed, the vast majority does not have a home-system filter due to cost and must buy tap water for cooking (adding onto the burden of availability and affordability of water use). Currently there are no studies on Lateral Canals, but based on observation (dead animals and other contaminants) we can safely assume that the water is not up to drinking standards or for human use.</li> </ul>	<ul style="list-style-type: none"> <li>Communities in Imperial Valley rely on the Colorado River inflow for water use. This is both for agricultural use and household uses (all water uses). Droughts and transfers of water have huge implications on the price, availability and commodity of water. Unincorporated communities are affected disproportionately on effects of climate change, droughts (water use limitations), and affordable clean water availability.</li> </ul>	<ul style="list-style-type: none"> <li>Droughts can have huge implications: availability, price and clean drinking water.</li> <li>Diversion/transfers of drinkable water to larger metropolitans thus affecting availability of water for Imperial Valleys availability of water.</li> </ul>	<ul style="list-style-type: none"> <li>Septic</li> </ul>	<ul style="list-style-type: none"> <li>Not well informed on topic: Cities have sewers, have not heard any complications. For rural communities, they rely on septic, also not well informed on how failures affect waste waters.</li> </ul>	<ul style="list-style-type: none"> <li>Droughts conditions were very impactful. The supply was still coming, but cost changes, affecting families with low-incomes. Not well informed to state how water availability and drinking-able water has been affected by other impacts like flooding, or fires.</li> </ul>	<ul style="list-style-type: none"> <li>Some cities in Imperial Valley have plans and are design to address stormwater and runoffs. Rural communities don't have such amenities. In this instances, storm water remains a puddle, unpaved roads become muddy and impassable.</li> </ul>	<ul style="list-style-type: none"> <li>Yes (100%)</li> <li>Imperial Valley relies on solely on the Colorado River for surface water, which is then distributed to agricultural use, municipalities and non-agricultural use. If the water transfers (i.e. 2003 of Salton Sea to San Diego) are any indications, population growth will require more water to be available to more populous areas, leaving areas like Imperial Valley struggling to meet water needs and balance of water sources (drying Salton Sea as an effect of those transfers leading to Public Health Hazards in the making).</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>Drinking water infrastructure for communities most isolated (rural communities).</li> </ul>	<ul style="list-style-type: none"> <li>Not well informed on subject.</li> </ul>	

Questionnaire Respondents	Community Characteristics		Drinking Water					Wastewater	Stormwater		Other	System Financing					
	Been involved in IRWM?	Describe community characteristics	Source(s) of water	Estimate number of wells	Accessible for community? (Y/N)	Affordable for community? (Y/N)	Identify any drinking water system issues:	Currently and historically, what are this community's most significant water challenges?	What do you see as the most pressing water challenge this community will face in the next 5 years? 10 years?	Type of System	Describe any insufficient wastewater system issues	What conditions have impacted drinking water quality and supply reliability?	Identify any stormwater/ urban water runoff/ flood management issues:	Is climate change considered a threat to the community's water supply?	Identify drinking water, wastewater, or stormwater regulatory/compliance issues if applicable	What challenge or concern mentioned in this questionnaire do you feel is most in need of funding?	Describe system financing needs (i.e. operation and maintenance costs):
<b>San Gorgonio IRWM Region</b>																	
<ul style="list-style-type: none"> <li>Banning Bench Community of Interest</li> <li>San Gorgonio Pass Water Agency</li> </ul>	<ul style="list-style-type: none"> <li>Yes (100%)</li> </ul>	<ul style="list-style-type: none"> <li>We do not have a reliable water supply. Frequently need to buy water from another water agency especially during high winds for fire protection. It has become more complex now that there are electrical power outages do to high winds and the power needed to operate the wells.</li> <li>Much of it is disadvantaged</li> </ul>	<ul style="list-style-type: none"> <li>Groundwater from a well</li> <li>Surface water</li> <li>Purchased water requiring treatment</li> <li>Flume system</li> </ul>	<ul style="list-style-type: none"> <li>2 company operated wells. 8 private wells.</li> <li>Don't know the exact number multiple purveyors</li> </ul>	<ul style="list-style-type: none"> <li>Yes (100%)</li> </ul>	<ul style="list-style-type: none"> <li>Yes (100%)</li> </ul>	<ul style="list-style-type: none"> <li>The main problem is water quantity, getting enough water through the flume system to meet our needs especially during high fire conditions. And being able to recharge the aquifers of our wells</li> </ul>	<ul style="list-style-type: none"> <li>Getting the Forest Service to recognize our 1891 act rights and Edison to bring the flume up to their contract agreement.</li> <li>Supply in dry years</li> </ul>	<ul style="list-style-type: none"> <li>The flume repaired so we have a reliable water source which will also improve the City of Banning water supply in the San Gorgonio River Basin which supply a third of the City's water.</li> <li>Supplies to meet projected growth, both in average and dry years.</li> </ul>	<ul style="list-style-type: none"> <li>Septic</li> <li>Sewer</li> </ul>	<ul style="list-style-type: none"> <li>One of our wells has an increase in nitrates when we are unable to recharge our aquifer for that particular well.</li> </ul>	<ul style="list-style-type: none"> <li>Drought; chrome 6, endangered species act</li> </ul>	<ul style="list-style-type: none"> <li>Yes (100%)</li> <li>More extreme weather conditions: hotter, drier, windier, longer droughts, more fires. Rain more likely to occur as thunder storms causing flooding and damage to our water supply.</li> <li>Through reduction of exports from the South Delta</li> </ul>	<ul style="list-style-type: none"> <li>None</li> <li>Regulatory issues mostly relate to the State Water Project-- there are many</li> </ul>	<ul style="list-style-type: none"> <li>Securing a reliable water supply through the flume.</li> <li>Additional water supplies</li> </ul>	<ul style="list-style-type: none"> <li>The piping of the flume.</li> <li>Don't understand the question</li> </ul>	
<b>Coachella Valley IRWM Region</b>																	
<ul style="list-style-type: none"> <li>Riverside County Dept. of Environmental Affairs</li> <li>Kent Sea Tech Farms</li> <li>Eastern Coachella Valley</li> <li>Comite Civico del Valle</li> </ul>	<ul style="list-style-type: none"> <li>Yes (75%)</li> <li>No (25%)</li> </ul>	<ul style="list-style-type: none"> <li>Disadvantaged communities and elevated levels of naturally occurring arsenic and fluoride.</li> <li>Agricultural use of groundwater</li> <li>The ECV has many drinking water access issues and wastewater management issues. I have a current project report (and hopefully peer reviewed paper) that I am working on shows the health risk to children when they play in soil contaminated by a failing septic system. This occurs in many places throughout the ECV and some portions of the WCV (Desert Hot springs).</li> <li>The west (Palm Spring, Palm Desert, Indian Wells etc.) is well funded, with infrastructure and predominantly affluent communities (with large seasonal inflow of residents (Snowbirds)). The East (City of Coachella, Mecca, Oasis, Desert Shores, Salton City, North Shore etc.) lacks proper infrastructure for water use, waste water, storm water etc. The characteristic of the East is predominantly Hispanic/Latino (90%). Employment is agricultural sector or hospitality.</li> </ul>	<ul style="list-style-type: none"> <li>Groundwater from a well</li> <li>Surface water</li> <li>Purchased water requiring treatment</li> </ul>	<ul style="list-style-type: none"> <li>N/A - we are a regulatory agency</li> <li>Don't know</li> <li>About 10 wells, but the number is dynamic for the Ave. 70 mobile home park.</li> <li>They are both private and public wells; depending on what community you are looking at.</li> </ul>	<ul style="list-style-type: none"> <li>Yes (75%)</li> <li>No (25%)</li> </ul>	<ul style="list-style-type: none"> <li>Yes (50%)</li> <li>No (50%)</li> <li>Blank (50%)</li> </ul>	<ul style="list-style-type: none"> <li>Chromium VI may be an issue in some areas of the Coachella Valley depending on the revised MCL.</li> <li>Arsenic and perchlorates in well water</li> <li>Members of that community have been provided water by the land owner, but during a September 2019 meeting, they said that only the heads of household were allowed to pick up water from the landowner and they were only allowed 1 gallon per person.</li> <li>For the most part, CVWD, does a good job of providing clean affordable drinking water. The challenge is for the few communities that are not connected to the main water supply line who rely on groundwater, or contaminated water (most which are found on Mountains/Rural/Unincorporated Communities away from populated regions).</li> </ul>	<ul style="list-style-type: none"> <li>Lack of water infrastructure in disadvantaged communities</li> <li>Funding issues</li> <li>Elevated arsenic, fluoride, and perchlorates in well water</li> <li>Access to drinking water in the ECV among community members in the Oasis Mobile home park on Avenue 70. That is tribal land that they consider "Alottee land", meaning that the responsibility to provide services lies with the person who manages the land. The county and the state see the land as tribal land. In the end, the residents have serious drinking water access issues. The wastewater issue and health risk to children is also very important.</li> <li>Droughts generally affect the community significantly (more the east than the west) economically and use. East Communities also have small pockets of residents who are not connected to CVWD, whose water source and availability becomes more challenging. Forcing them to rely on ground water or portable water for everyday use.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of water infrastructure in disadvantaged communities</li> <li>Supply to meet demand</li> <li>Continued access to drinking water</li> <li>The challenge for the upcoming years will be on populations growth and water demand. The Coachella Valley region is growing and the demand for water is increasing. Meeting the demand will be a great challenge for the water district. More so, will be the fund to build the infrastructure that will facilitate and transfer water to this communities most vulnerable to water challenges.</li> <li>Droughts will have huge impacts and challenges.</li> </ul>	<ul style="list-style-type: none"> <li>Septic</li> <li>Sewer</li> </ul>	<ul style="list-style-type: none"> <li>Flooding, poor soil percolation rates, and elevated groundwater have impacted some septic systems.</li> <li>Coachella valley stormwater channel(Whitewater River) Flooding</li> <li>The age of the septic systems is what impacts reliability.</li> <li>Coachella's Valleys structure and wealth greatly affected the level of challenges on wastewater systems. Most of the communities (cities) have reliable waste water systems in place to address Wastewater and flooding. However, communities in the East Coachella Valley and next to the Salton Sea don't have the necessary infrastructure to handle flooding, or droughts. These communities, also don't have paved roads, drainages, or water reserved in case water is cut off. Infrastructure will be necessary to address future droughts and flooding.</li> </ul>	<ul style="list-style-type: none"> <li>Drought, infrastructure and arsenic contamination.</li> <li>Drought has had an impact on affordability of drinking water and the level of supply.</li> <li>Cost of water is also a concern to some communities on for the East Coachella Valley.</li> <li>Climate change and adaptability is a concern for communities with inadequate or lack of infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Whitewater drain back up during high flooding in channel</li> <li>Most of the community in Ave 70 (Oasis) live in very old mobile homes. The location of the park is also prone to flooding with no built infrastructure to manage the flood water.</li> <li>Cities in the Region have in place stormwater sewers and runoffs. Their runoffs are intended to end in the Salton Sea. Rural communities don't have an existing plan, structure or infrastructure to deal with stormwater. Leading these communities with puddles of water (for days depending on ground structures with no water outlets or type of soil that keeps water in place), muddy roads that are impassible. Communities that don't have flood management plans are most affected; flooding streets, disruption of services, road conditions, and health concerns.</li> </ul>	<ul style="list-style-type: none"> <li>Yes (50%)</li> <li>Maybe (50%)</li> <li>The effects of a drought will be felt first by people who live in these disadvantaged communities. Any price increase to local water supplies will hurt the severe DAC populations first.</li> <li>Currently, Coachella Valley is supply by the CVWD who relies on four sources of water to provide service to its customers, groundwater, recycled water, imported water from the state project and the Colorado River via the canal systems. As climate change and increase in population demand more water, these sources will be subject to capacities. Water from the river will also be more in demand for larger metropolitan areas, issues we are already seeing with water transfers (i.e. 2003 Salton Sea to San Diego). In effect, the most affected communities will be communities already struggling with climate adaptability (low income and communities of color).</li> </ul>	<ul style="list-style-type: none"> <li>Naturally occurring elevated arsenic and fluoride.</li> <li>Not aware of any issues directly pertaining agencies/water districts. There is one community being affected by contaminated water and landlord abuse (financial) for drinking water. Unfortunately, this community is located in a Native American Tribal lands, which limits actions that can be taken by local, county or state agencies. This community is located in Oasis (unincorporated community) housing mostly migrant farmworkers.</li> </ul>	<ul style="list-style-type: none"> <li>Bringing sewer and water infrastructure to the eastern Coachella Valley</li> <li>The status of the area as Alottee land is what is the main challenge to this community. They can't seek funds from local areas and the tribe has a difficult time working with the Alottee status of the land.</li> <li>Infrastructure connecting existing water sources. From communities that lack the necessary infrastructure, they are already financially burden. The county is limited in what it can provide (financially). I will look into more on this topic.</li> </ul>	<ul style="list-style-type: none"> <li>Not well informed on subject.</li> </ul>

## **APPENDIX C: QUESTIONNAIRE**

# Water Needs Assessment Questionnaire 2019

Colorado River Funding Area

*Thank you for your participation in the Water Needs Assessment. Our goal is to understand the water-related issues and needs of your community and your feedback will help shape the region's water priorities. Please provide as much information as possible. If you do not know the answer to a question, feel free to leave it blank.*

There are multiple methods to submit your feedback:

1. Complete survey online at: <https://forms.gle/7yKQJDe3zZW44MxTA>
2. Complete, scan, and email to [npoletto@woodardcurran.com](mailto:npoletto@woodardcurran.com)

What is the name of your community or organization?

---

What Region are you located in? (See attached map - Please pick one)

- Eastern San Bernardino County
- Eastern Riverside County
- Eastern Imperial County
- Mojave IRWM Region
- San Geronio IRWM Region
- Coachella Valley IRWM Region
- Anza Borrego Desert IRWM Region
- Imperial Valley IRWM Region

Have you ever been engaged in an Integrated Regional Watershed Management (IRWM) program or public project?

- Yes
- No

Are there any defining characteristics of your community that you'd like to share?

---

---

## **General Water Questions**

Currently and historically, what are this community's most significant water challenges?

---

---

What do you see as the most pressing water challenge this community will face in the next 5 years?  
10 years?

---

---

Do you consider climate change to be a threat to your community's water supply?

- Yes
- No
- Maybe

If yes, please describe how you think climate change may affect your community's water supply:

---

---



# Water Needs Assessment Questionnaire 2019

Colorado River Funding Area

---

## **Drinking Water Questions**

Where does your community's drinking water come from? Check all that apply.

- Groundwater from a well
- Groundwater from a spring
- Surface water
- Purchased water requiring treatment
- Purchased water already treated
- Other: \_\_\_\_\_

If water is sourced from a groundwater well, please specify the number of private AND public wells. If not applicable, please write NA. \_\_\_\_\_

Is drinking water accessible for the community?

- Yes
- No
- Other: \_\_\_\_\_

Is drinking water considered affordable for the community?

- Yes
- No
- Other: \_\_\_\_\_

What conditions (i.e. drought, flooding) have impacted drinking water quality and supply reliability?  
Are certain conditions of concern in the future?

---

---

List any other drinking water quantity issues or drinking water quality challenges:

---

---

## **Wastewater Questions**

What type(s) of wastewater system(s) is/are used in your community? Check all that apply.

- Septic
- Sewer
- Other: \_\_\_\_\_

What conditions (i.e. drought, flooding, infrastructure failure) have impacted wastewater system operations or reliability? List any other challenges regarding wastewater:

---

---

## **Stormwater Questions**

*Stormwater is water that originates during precipitation events that can either soak into the soil, be held on the surface and evaporate, or runoff and end up in nearby water bodies.*

Identify any stormwater/ urban water runoff/ flood management issues:

---

# Water Needs Assessment Questionnaire 2019

Colorado River Funding Area

---

## **Financing**

What challenge or concern mentioned in this questionnaire do you feel is most in need of funding?

---

---

Describe system financing needs (i.e. operation and maintenance costs):

---

---

## **Other**

Are you aware of any compliance or regulatory issues regarding drinking water, stormwater, or wastewater in your community? If so, can you describe them?

---

---

Please provide any other information you would like to share about the overall health of your watershed.

---

---

Do you know of any other local water systems that are likely disadvantaged communities and should be targeted for a Needs Assessment?

- Yes
- No
- Maybe

If answered yes above, please provide contact, location, or other helpful information:

---

Are there any additional needs or challenges within the community that have not been addressed in previous sections?

---

---

If you would like to be added to our email list, please add your email here:

---

## **APPENDIX D: MEETING MATERIALS**

# Colorado River IRWM Funding Area Water Needs Assessment

Wednesday, January 29, 2020  
10:00 a.m. – 11:30 a.m.

Blythe City Hall  
235 N. Broadway  
Blythe, CA 92225

## AGENDA


### Agenda:

1. Welcome and Introductions
2. What is IRWM?
3. Water Needs Assessment
4. Discussion
  - a. Strengths
  - b. Challenges and Needs
  - c. Additional Contacts
5. IRWM DACI Funding Opportunity
6. Additional Funding Opportunities
7. Next Steps

### Glossary:


- DWR – California Department of Water Resources
- IRWM – Integrated Regional Water Management
- CRFA – Colorado River Funding Area
- DAC – Disadvantaged Community
- DACI – Disadvantaged Community Involvement Program
- EDA – Economically Distressed Area





# Water Needs Assessment

Workshop #2  
January 29, 2020



Presented by:  
Nicole Poletto, Woodard & Curran

COMMITMENT. INTEGRITY. DRIVE RESULTS.

1




## Why Are We Here?

- To better understand water needs in the local community through discussion
- IRWM is a voluntary program – it is a means to obtain State funding for water projects

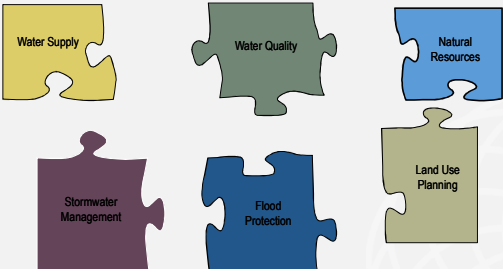
**Program Goal**

Improve water management throughout the region


2



## What is Integrated Regional Water Management (IRWM) Planning?




3




## Statewide IRWM Program

- Funded through voter-approved water bonds
  - Propositions 50, 84, and 1
- Managed by CA Department of Water Resources (DWR)
  - Manages imported water system (State Water Project)
  - Distributes grants for water projects to local IRWM Programs

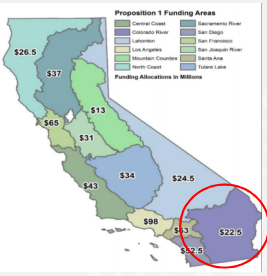


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## IRWM Funding Areas


- 12 Funding Areas were allocated funds in water bond
- Funding is distributed through a competitive grant process
  - Funding available only through an approved IRWM Region
- Colorado River Funding Area
  - \$100,000 still available through Prop 1 DACI round of funding
  - Available to non-IRWM areas



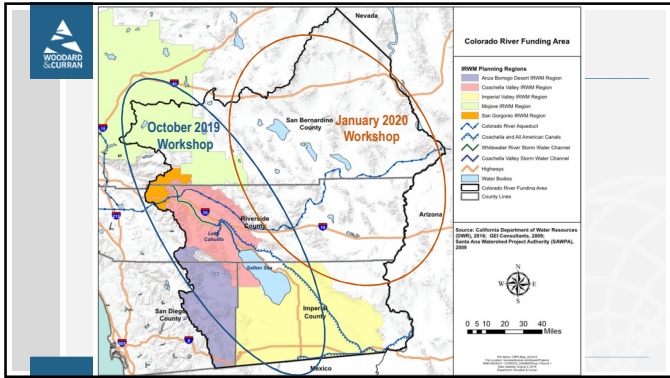
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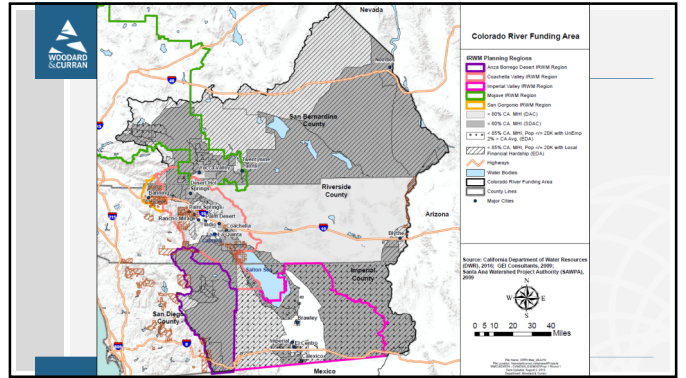
## What is the Water Needs Assessment?



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### Tribal Nations

IRWM Regions	Eastern Counties
<ul style="list-style-type: none"> <li>Agua Caliente Band of Cahuilla Indians</li> <li>Augustine Band of Cahuilla Mission Indians</li> <li>Cabazon Band of Cahuilla Mission Indians</li> <li>Cahuilla Band of Mission Indians</li> <li>Campo Band of Diegueno Mission Indians</li> <li>Cuyapaipe Community of Diegueno Mission Indians</li> <li>Los Coyotes Band of Cahuilla Mission Indians</li> <li>Manzanita Band of Diegueno Mission Indians</li> <li>Moronogo Band of Cahuilla Mission Indians</li> <li>Santa Rosa Band of Cahuilla Mission Indians</li> <li>Santa Ysabel Band of Diegueno Mission Indians</li> <li>Torres-Martinez Band of Cahuilla Mission Indians</li> <li>Twenty-Nine Palms Band of Luiseño Mission Indians</li> </ul>	<ul style="list-style-type: none"> <li>Fort Mojave Indian Tribe</li> <li>Chemehuevi Indian Tribe</li> <li>Colorado River Indian Tribe</li> <li>Quechan Tribe</li> <li>Cocopah Tribe</li> </ul>

9

### General Water Needs Themes

- Safe, reliable drinking water
- Drinking water regulation compliance
- Groundwater contamination
- Inadequate wastewater treatment (septic to sewer upgrade)
- Inadequate or failing infrastructure
- Need for consolidation
- Floods and droughts
- Small financial base
- Capacity to apply for and manage grants

10

### Discussion

*What are the strengths of your community?*

*What are some challenges or needs in your community?*

11

### Discussion

*With regard to water, what are some strengths in your community?*

*With regard to water, what are some challenges or needs in your community?*

12




### Discussion

Are there any additional needs or challenges within your community that have not been discussed?

Are there any more contacts we should reach out to?

13




### Water Needs Questionnaire

Please complete the questionnaire!


- Complete online: <https://forms.gle/jn4FEEnZWHcGt962f9>
- Hard copies available today


14



### IRWM DACI Funding Opportunity

- \$100k available for planning projects in Funding Area
  - Eastern Counties area is eligible for these funds
  - Planning grants should help move water projects forward
- Eligible project activities include:
  - Master / Management Plans
  - Design (conceptual > final drawings)
  - Environmental (CEQA and permits)





15




### DACI Grant to Address Water Needs

Eligible project types:

- Water reuse and recycling
- Water-use efficiency and conservation
- Storage
- Regional water conveyance facilities
- Watershed protection and restoration
- Water supply reliability
- Wildfire risk reduction
- Decision support tools
- Stormwater capture and use
- Stormwater resource management
- Conjunctive use
- Desalination
- Water quality and treatment
- Regional projects or programs


16



### IRWM DACI Funding Opportunity

- More information will be released in February 2020 through our mailing list – make sure you're signed up!
- There will be a brief application to complete:
  - Contact information
  - Project description
  - Benefits to DACs, EDAs, URCs, tribes
  - Funding request
- Applications will be scored and prioritized across the Funding Area
- Planning projects must be completed by December 2020


17



### Additional Funding Opportunities

Project Types	Deadline	Website
<b>State Water Resources Control Board</b>		
Proposition 1 Technical Assistance Program	Open: rolling, limited	<a href="https://www.waterboards.ca.gov/water_issues/programs/grants_loans/proposition1/tech_asst_funding.html">https://www.waterboards.ca.gov/water_issues/programs/grants_loans/proposition1/tech_asst_funding.html</a>
Drinking Water State Revolving Fund	Open: rolling	<a href="https://www.waterboards.ca.gov/drinking_water/services/funding/SRF.html">https://www.waterboards.ca.gov/drinking_water/services/funding/SRF.html</a>
Clean Water State Revolving Fund	Open: rolling	<a href="https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/">https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/</a>


18



### Additional Funding Opportunities

Project Types	Deadline	Website
<b>US Department of Agriculture</b>		
Water and Waste Disposal Loan and Grant Program	Open: rolling	<a href="https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program">https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program</a>
Water & Waste Disposal Technical Assistance and Training Grants	Open: rolling	<a href="https://www.rd.usda.gov/programs-services/water-waste-disposal-technical-assistance-training-grants">https://www.rd.usda.gov/programs-services/water-waste-disposal-technical-assistance-training-grants</a>
<b>Bay Area Council</b>		
California Resilience Challenge	February 7, 2020	<a href="https://www.bayareacouncil.org/storm-flood-protection/california-resilience-challenge-announces-statewide-competition-for-climate-adaptation-projects/">https://www.bayareacouncil.org/storm-flood-protection/california-resilience-challenge-announces-statewide-competition-for-climate-adaptation-projects/</a>


19



### Next Steps


- Ongoing** • Continue outreach in Eastern Imperial, Riverside, and San Bernardino Counties
- Jan 2019** • Host Eastern Counties Workshop
- Mar 2019** • Prepare Draft/Final Report
- Spring 2020** • Submit to DWR / Public Release

20



## Thank You

Nicole Poletto  
Woodard & Curran



[npoletto@woodardcurran.com](mailto:npoletto@woodardcurran.com)  
858-875-7405

21



# Colorado River IRWM Funding Area Water Needs Assessment

Tuesday, October 15, 2019  
2:30 p.m. – 4:00 p.m.

Coachella Valley Water District  
85-995 Avenue 52 @ Hwy 111  
Coachella, CA 92236


## AGENDA

### Agenda:

1. Welcome and Introductions
2. What is IRWM?
3. Water Needs Assessment
4. IRWM Region Needs
  - a. Anza Borrego Desert
  - b. Coachella Valley
  - c. Imperial
  - d. Mojave
  - e. San Gorgonio
5. Tribal Water Needs
6. Eastern Counties Water Needs
7. Discussion
  - a. Additional Needs?
8. Next Steps


### Glossary:

- DWR – California Department of Water Resources
- IRWM – Integrated Regional Water Management
- CRFA – Colorado River Funding Area
- DAC – Disadvantaged Community
- EDA – Economically Distressed Area



## Water Needs Assessment


Workshop #1  
October 15, 2019



Presented by:  
Nicole Poletto, Woodard & Curran

COMMITMENT. INTEGRITY. DRIVE RESULTS.

1




## Why Are We Here?

- To better understand water needs in local disadvantaged communities
- IRWM is a voluntary program – it is a means to obtain State funding for water projects
- We will present needs identified in literature review and encourage discussion to help inform priorities

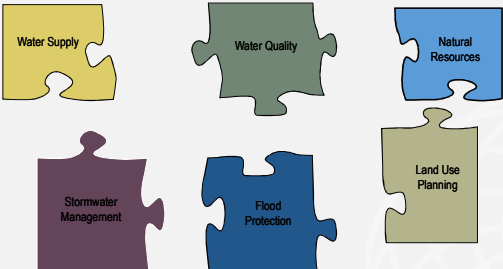
**Program Goal**

Improve water management throughout the region


2



## What is Integrated Regional Water Management (IRWM) Planning?




3




## Statewide IRWM Program

- Funded through voter-approved water bonds
- Managed by CA Department of Water Resources (DWR)
  - Manages imported water system (State Water Project)
  - Distributes grants for water projects to local IRWM Programs

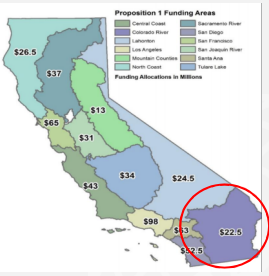


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## IRWM Funding Areas

- 12 Funding Areas were allocated funds in water bond
- Funding is distributed through a competitive grant process
  - Funding must be accessed through an approved IRWM Region
- Colorado River Funding Area
  - \$100,000 still available through Prop 1 DACI round of funding



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## IRWM Grant to Address Water Needs

**Eligible project types:**

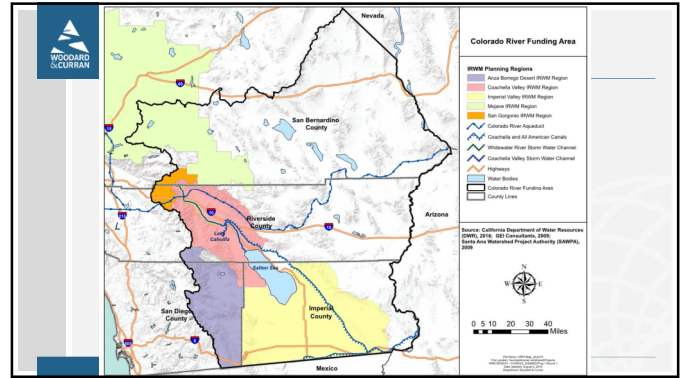
- Water reuse and recycling
- Water-use efficiency and conservation
- Storage
- Regional water conveyance facilities
- Watershed protection and restoration
- Water supply reliability
- Wildfire risk reduction
- Decision support tools
- Stormwater capture and use
- Stormwater resource management
- Conjunctive use
- Desalination
- Water quality and treatment
- Regional projects or programs

Round 2 of Funding  
Expected Late 2021

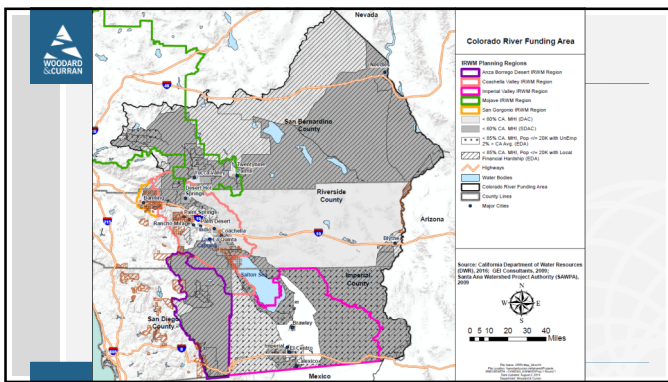
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### Methods

- Literature review to characterize needs within existing IRWM regions
  - Each IRWM plan included outreach to disadvantaged communities and tribes
  - Workshop to review needs
- Outreach to characterize needs within Eastern Counties
  - Questionnaire
  - Workshop/Listening session
  - Utilizes literature review to inform needs

10

### General Water Needs Themes

- Safe, reliable drinking water
- Drinking water regulation compliance
- Groundwater contamination
- Inadequate wastewater treatment (septic to sewer upgrade)
- Inadequate or failing infrastructure
- Need for consolidation
- Floods and droughts
- Small financial base
- Capacity to apply for and manage grants

11

### Anza Borrego Desert IRWM Region

<b>Key Players (RWMG Agencies)</b>	<ul style="list-style-type: none"> <li>Borrego Water District</li> <li>Borrego Valley GSP</li> </ul>
<b>Last IRWM Plan Update</b>	No current IRWM Plan
<b>Website</b>	<a href="http://www.bvgspp.org">www.bvgspp.org</a>

12

**Identified Water Needs**

- Reliant on groundwater basin that is critically overdrafted, with no access or rights to Colorado River water
  - Increasing demand over past 20 years from agricultural land, golf courses, and residential areas
- All wells currently meet MCLs
- Lack of stormwater recharge facilities
  - Susceptible to flash flooding
- Infrequent rainfall in the region results in periods of extended zero-groundwater recharge

**Resources**

- 2019 GSP
- 2009 IRWM Plan

13

**Coachella Valley IRWM Region**

- Coachella Valley Water District
- Coachella Water Authority
- Desert Water Agency
- Indio Water Authority
- Mission Springs Water District
- Valley Sanitary District

**Key Players (RWGM Agencies)**

**Last IRWM Plan Update**: December 2018

**Website**: [www.cvrwm.org](http://www.cvrwm.org)

14

**Identified Water Needs**

- Reliant on groundwater as well as imported water, recycled wastewater, and surface water
- Pressing needs where DACs do not receive municipal water supply or wastewater services
  - Most heavily concentrated in eastern Coachella Valley (southeast of Indio and Coachella)
- Primary concern: water quality and affordability of water consolidation
  - Drinking water and wastewater consolidation
  - Concern: who will pay?

**Resources**

- 2018 IRWM / SWR Plan
- 2014 CVRWGM DAC Outreach Report
- 2012 CV Water Management Plan Update
- 2013 Mission Creek/Garnet Hill Water Management Plan
- East Coachella Valley Water Supply Project Prioritization & Consolidation Strategy TMs
- Sanitation System Prioritization TM

15

**Identified Water Needs (cont.)**

- Lack of access to clean drinking water in some communities
  - Funding for compliance orders and consolidations where feasible
  - Elevated concentrations of arsenic in groundwater
  - Water quality issues from septic (impact drinking water & local tourism)
- Small water systems
  - Onsite leaking and ponding of water
  - Pipes corroding or breaking or not properly connected or jointed
  - Unpermitted - do not receive required water system monitoring
- Susceptible to flash flooding

16

**Imperial IRWM Region**

**Key Players (RWGM Agencies)**

- Imperial Irrigation District
- Imperial County
- Imperial Region Cities

**Last IRWM Plan Update**: 2012

**Website**: [www.imperialirwmp.org](http://www.imperialirwmp.org)

17

**Identified Water Needs**

- Reliant on Colorado River for drinking water
  - Majority agricultural uses
- Poor groundwater quality
- Salton Sea increasing salinity
- Lack of adequate stormwater infrastructure
  - Ex: City of Brawley 50% of stormwater is combined sewer overflow
- Lack of taxes for district improvements

**Resources**

- 2012 IRWM Plan
- 2016 City of Brawley UWMP
- 2016 El Centro UWMP

18

**WOODARD SUTCLIFF**

## Mojave IRWM Region

- Mojave Water Agency
- Victor Valley Wastewater Reclamation Authority
- MWA Technical Advisory Committee
- Mojave Desert Resource Conservation District
- Morongo Basin Pipeline Commission

**Key Players (RWMG Agencies)**

**Last IRWM Plan Update** 2018 Amendments

**Website** www.mywaterplan.com

**Mojave (in CFWA Funding Area)**

**IRWM Planning Regions**

- San Bernardino County
- Riverside County

**IRWM Funding Areas**

- San Bernardino County
- Riverside County

19

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## Identified Water Needs

- Reliant on imported water as well as local surface water and groundwater resources
  - Less predictable supply and groundwater overdraft
- Finance and affordability
  - Inadequate financial resources to fund efforts local/regional water issues
- Groundwater quality (closed topographic basin)
  - Looking to upgrade septic to sewer (existing septic leaking nitrates)
  - Concern for meeting MCLs
- Susceptible to flash flooding (physical and economic damage)

**Resources**

- 2018 IRWM Plan
- 2017 SWRP
- 2015 Urban Water Management Plan

20

**WOODARD SUTCLIFF**

## San Geronio IRWM Region

- City of Banning
- Riverside County Flood Control & WCD
- Cabazon Water District
- High Valleys Water District
- Banning Heights Mutual Water Company
- San Geronio Pass Water Agency

**Key Players (RWMG Agencies)**

**Last IRWM Plan Update** August 2018

**Website** www.sginwm.org

**San Geronio**

**IRWM Planning Regions**

- San Bernardino County
- Riverside County

**IRWM Funding Areas**

- San Bernardino County
- Riverside County

21

**WOODARD SUTCLIFF**

## Identified Water Needs

- Reliant on groundwater in addition to imported water and surface water
  - Limited local understanding of reliability of resources
- Groundwater quality
  - Septic systems require upgrades
  - Nitrates in groundwater from long-term discharges
- Flash flooding problems expected to be exacerbated by increased urbanization

**Resources**

- 2018 IRWM Plan

22

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## Tribes

**IRWM Regions**

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Mission Indians
- Cabazon Band of Cahuilla Mission Indians
- Cahuilla Band of Mission Indians
- Campo Band of Diegueno Mission Indians
- Cuyamapae Community of Diegueno Mission Indians
- Los Coyotes Band of Cahuilla Mission Indians
- Manzanita Band of Diegueno Mission Indians
- Morongo Band of Cahuilla Mission Indians
- Santa Rosa Band of Cahuilla Mission Indians
- Santa Ysabel Band of Diegueno Mission Indians
- Tomes-Martinez Band of Cahuilla Mission Indians
- Twenty-Nine Palms Band of Luiseno Mission Indians

**Eastern Counties**

- Fort Mojave Indian Tribe
- Chemehuevi Indian Tribe
- Colorado River Indian Tribe
- Quechan Tribe
- Cocopah Tribe

23


**WOODARD SUTCLIFF**

## Identified Tribal Water Needs

- Groundwater quality
  - Arsenic found in some areas making water unsuitable for use
  - Long-term impact of groundwater recharge (salinity)
- Resource management for sustainability
- Groundwater supply - overdraft
- Preservation of native plants species and habitat
- Lack of connection to water and sewer services

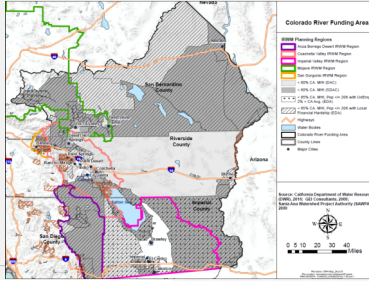
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## Eastern Counties Water Needs

- Not included in IRWM Regions
- 100% DAC and EDA
- Human Right to Water Tool (OEHHA, CalEPA)
  - Water accessibility and affordability
  - Low potential for exposure to water quality contaminants



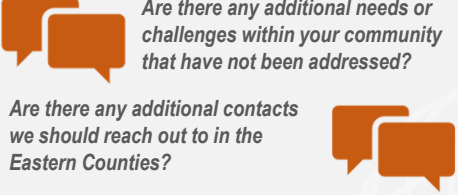
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## Discussion

Are there any additional needs or challenges within your community that have not been addressed?


Are there any additional contacts we should reach out to in the Eastern Counties?



26




## Water Needs Questionnaire



Please complete the questionnaire!

- Complete online: <https://forms.gle/jn4FFeNZWHcGt962f9>
- Hard copies available


27



## Next Steps


- Ongoing: Continue outreach in Eastern Imperial, Riverside, and San Bernardino Counties
- Nov 2019: Host Eastern Counties Workshop
- Dec 2019: Prepare Draft/Final Report
- Early 2020: Submit to DWR / Public Release

28



## Thank You

Nicole Poletto  
Woodard & Curran



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29

# Disadvantaged Community (DAC) and Economically Distressed Areas (EDAs) Definitions for IRWM

September 23, 2019

*Purpose: Disadvantaged Community and Economically Distressed Area definitions for the Colorado River IRWM Funding Area Water Needs Assessment. These definitions are set by the Department of Water Resources (DWR).*

**Disadvantaged Community (DAC):** As defined by DWR, DACs are Census geographies with an annual median household income (MHI) that is less than 80% of the Statewide annual MHI. Severely Disadvantaged Communities (SDAC) are Census geographies having less than 60% of the Statewide annual MHI.

2018 Statewide MHI: \$63,783<sup>1</sup>

2018 DAC (80% of Statewide): \$51,026

2018 SDAC (60% of Statewide): \$38,272

Areas mapped on DWR's DAC Mapping Tool (<https://gis.water.ca.gov/app/dacs/>) are considered DAC.

**Economically Distressed Area (EDA):** As defined by DWR, an EDA is a municipality with a population of 20,000 persons or less, a rural county, or a reasonably isolated and divisible segment of a larger municipality with a population of 20,000 persons or less, with a median household income (MHI) that is less than 85% of the Statewide MHI, and with one or more of the following conditions:

- 1) Financial hardship
- 2) Unemployment rate at least 2% of higher than statewide average
- 3) Low population density

The San Diego IRWM Program defines the above terms and conditions as follows.

Reasonably isolated and divisible segment:

- A community, Census block, tract, or other area within a larger municipality that is separated by major transportation corridors, waterbodies, or other physical barriers.  
-- or --
- A segment with separate (disconnected from municipal services) water or wastewater services or other jurisdictional boundaries, such as senior living, fixed income, or other communities, where more than a quarter of the population does not have access to an automobile, or where more than a quarter of the population are non-English speakers.

Financial hardship: If the MHI for the community is less than 80% of the statewide annual MHI, or if the MHI for the community is less than 85% of the regional or local MHI. Income data may be calculated using U.S. Census data, American Community Survey (ACS) data,

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<sup>1</sup> US Census Bureau - Median Household Income (in 2016 dollars), 2012-2016.

income surveys, or other justifiable local knowledge (e.g., neighborhood has been designated low-income by its municipality, or community is a state- or federally-designated *colonia*).

Unemployment rate at least 2% higher than statewide average: The statewide average unemployment rate<sup>2</sup> is 4.2% as of May 2018, and thus communities having 6.2% and higher unemployment rates would meet this criterion. Local unemployment rates may use U.S. Census data, ACS data, or local economic agencies, so long as the data use a reasonable scale.

Low population density: Defined as less than 100 persons per square mile, consistent with DWR's EDA mapping tool's methodology. Population density may be determined using ACS data, or local data.

Areas mapped on DWR's EDA Mapping Tool (<https://gis.water.ca.gov/app/edas/>) are considered EDAs.

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<sup>2</sup> California Employment Development Department. 2018. EDD News Release No. 18-73. Available: [https://www.edd.ca.gov/About\\_EDD/pdf/urate201806.pdf](https://www.edd.ca.gov/About_EDD/pdf/urate201806.pdf)

# **APPENDIX E: CALL FOR PROJECTS**

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## Appendix E

### Call for Projects Descriptions

TO: Ashley Gilreath, DWR  
FROM: CRFA Partners  
RE: CRFA 2020 Call for Projects

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The purpose of this document is to provide brief project descriptions of submitted projects through the March 2 – April 27 open Call for Projects in the Colorado River Funding Area. \$100,000 was reserved in the grant contract to disburse to the San Geronio IRWM Region or a non-IRWM area, considered the Eastern Counties region. Projects were considered eligible if construction began after January 2016. Projects were scored using scoring criteria distributed to all applicants in advance and evaluated on a 90-point scale.

#### **Project 1: City of Needles Water System Cost and Efficiency Comparison (Recommended for Funding)**

**Applicant:** City of Needles

The City of Needles has a vulnerable water system with aging infrastructure, limited water supply, water quality and safe drinking water issues. The City currently operates four (4) wells in the well field to meet their potable and non-potable demands. These wells are identified as City Wells # 8, #11, #12, and #15. Of the four (4) wells only one (1) well (#15) can be utilized for delivering potable water to its 1,706 services connections that services a population of 4,302. The City's only potable well provides the entire water systems demand and yields of approximately 2,100 gallons per minute. This well runs 23 hours a day in the summer to meet demand with desert temperatures reaching 120 degrees. This stress to the system makes the City extremely vulnerable and if the well were to fail during peak season it would result in a safe drinking water issue. This project includes the comparison of a treatment analysis for well #11 and review of a new well site to determine a cost per acre-foot analysis of each project. The most feasible and cost-effective project will be selected to move forward with a capital project.

#### **Project 2: Ripley Water System Interconnection Study (Recommended for Funding)**

**Applicant:** Riverside County

The planning project will prepare engineered construction drawings for a pipeline that will interconnect the Mesa Verde Domestic Water Distribution System to the Ripley Domestic Water Distribution System. Current water samples from the Ripley system test above the state MCL for 1,2,3 TCP. The Mesa Verde Domestic Water distribution system is a nearby system that has sufficient capacity and does not show any signs of TCP contamination. Connecting the Ripley Distribution Center to Mesa Verde bypasses the contaminated groundwater supply the Ripley system currently accesses for domestic water supply. The construction drawings will be used for a public works bid for the capital pipeline project.



### **Project 3: Planning for Five Gate Replacement Project (Recommended for Funding)**

**Applicant:** Bard Water District

This planning project is covering a portion of the expenses to perform all the required engineering and design needed to replace the existing Five Gates on the Reservation Main Canal. The Five Gates are a series of gated culverts in Area F, where the Mohave Canal turnout begins off the Reservation Main Canal. It is the structure of the bifurcation of the of the Mohave Lateral diversion and the Reservation Main Canal. The structure is deteriorating, and some gates are non-operational, making a choking point for flows. The project will improve the overall system and infrastructure and prevent catastrophic crop damage.

### **Project 4: Banning Heights Mutual Water Company Emergency Connection**

**Applicant:** Banning Heights Mutual Water Company

The completed project established a permanent emergency connection (intertie) between the City of Banning and Banning Heights Mutual Water Company at the northern end of their respective distribution systems. The project also included installation of a pressure regulating station which assists in the delivery of water by the City of Banning and provides pressure to fire hydrants in the Banning Water Canyon that were not previously pressurized.

### **Project 5: Update of Urban Water and Sewer System Management Plans**

**Applicant:** City of Blythe

These projects will result in updated information as to the age and quality of the City of Blythe's water and sewer systems. This will help greatly in prioritizing and scheduling the replacement of water and sewer main lines and other pertinent infrastructure included as part of a capital improvement project. The result will be water and sewer systems that are more efficient and of higher quality, which in turn will greatly reduce the chance for any water and/or sewer spills.

### **Project 6: The use of drinking water from bulk-fill Vending Machines as an alternative to tap water: a microbiological and behavioral assessment among DAC residents of North Shore, CA.**

**Applicant:** Loma Linda University

The two project activities include (1) community science program to explore contaminants in non-district drinking water and (2) community engagement towards planning and advocacy to work with the local water district to organize a community network for proposition 1 funding of infrastructure. The project #1 will be led by the Loma Linda University team in association with community partners. The project #2 will be led by the Pueblo Unido CDC organization to build community consensus and priority of the proposition 1 process. That community consensus is necessary to advocate for an infrastructure build through the Ave 66 project to Mecca and to North Shore. The project's principle output is to build trust and understanding in the drinking water treatment system delivered to North Shore, CA.

### **Project 7: Planning for Piute Creek Ecological Reserve to Re-Construct Small Dam for Water Retention, Emergency Spillway and Measurement Devices and Structures**

**Applicant:** California Department of Fish and Wildlife

This planning project is to perform all the required engineering, design, and technical evaluation or studies needed to construct a new dam at the lower narrows of Piute Creek. It will include the following activities

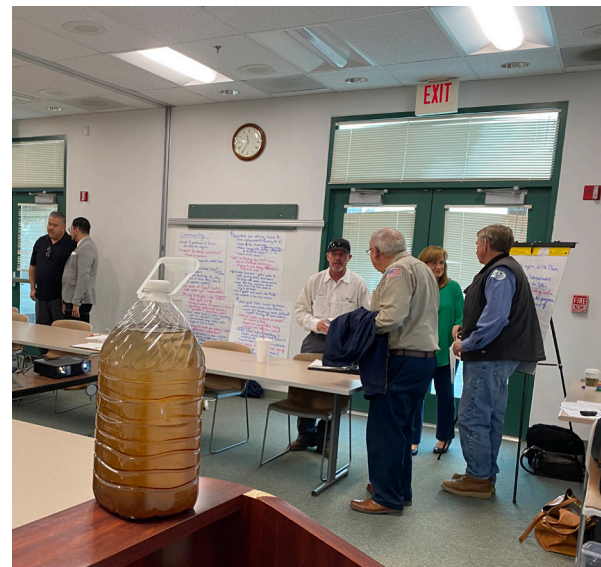
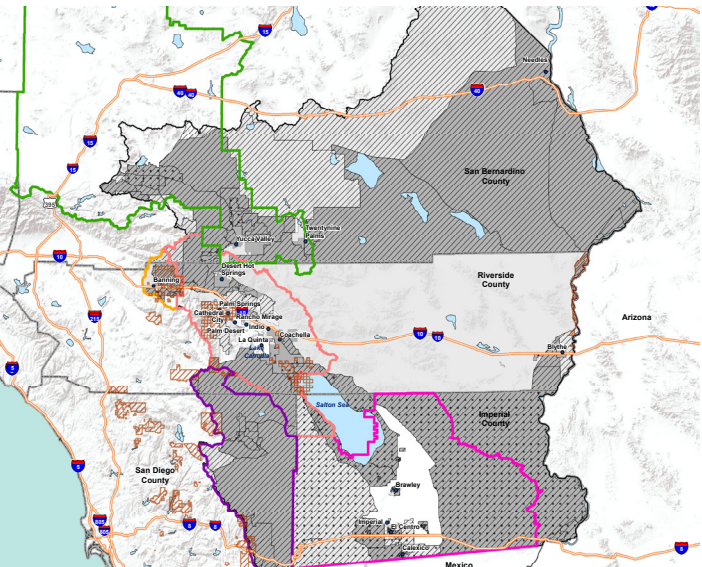


also listed as deliverables. This planning effort will lead to a capital improvement project: Replacement of a dam that is damaged, deteriorated and no longer functioning.

1) Engineering and Design Plans for the replacement dam and emergency spillway as well as measurement devices and structures (including hydrology). Because of the remoteness of the site and need to maintain its natural appearance we plan to use concrete and existing rocks from the previous 2 failed dam structures.

2) Study for sustainability and Aquatic Survey of fish species (if any) for possible re-introduction (also after consulting with Tribal Fish and Game and elders). If our study reveals it is feasible to re-introduce native fish species – we will plan for that later with other funding.

3) Drinking and Potable Water and Sanitation Plan. We need to determine the best way to manage sanitation/sewage (compost toilet or septic) as well as having a source of safe drinking water and potable water.



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*Prepared for the Colorado River Funding Area by:  
Woodard & Curran*

