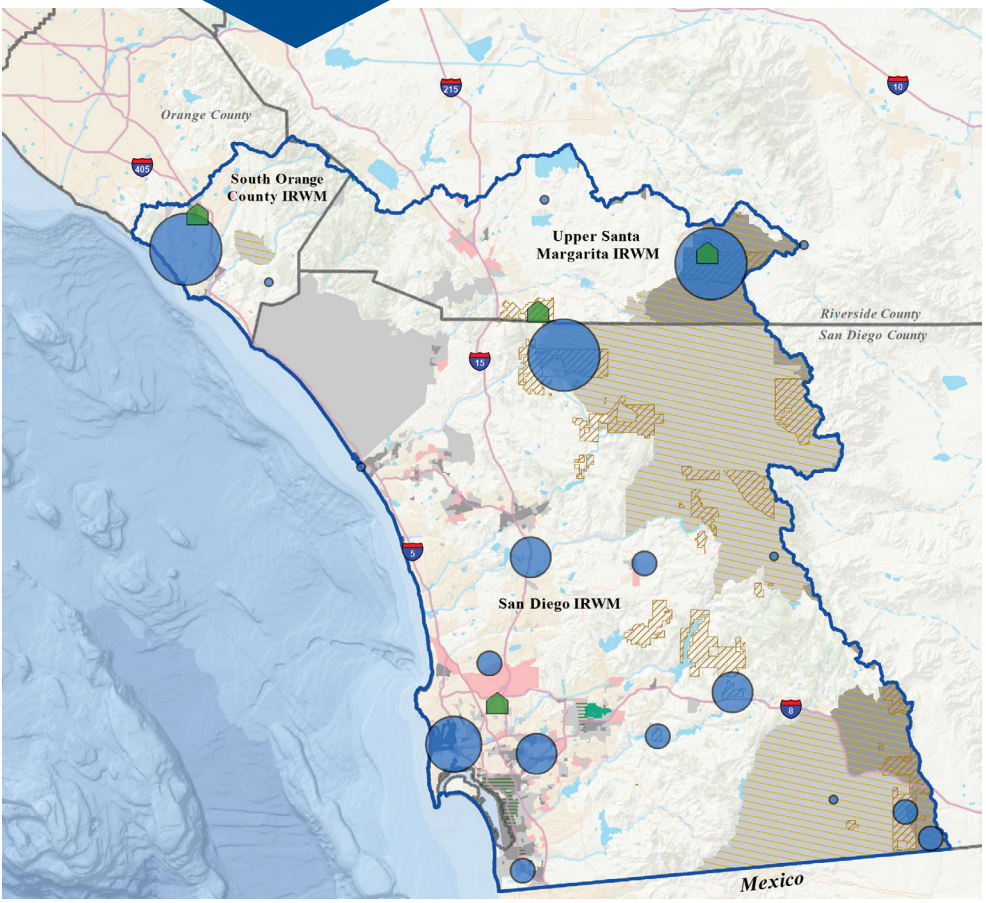
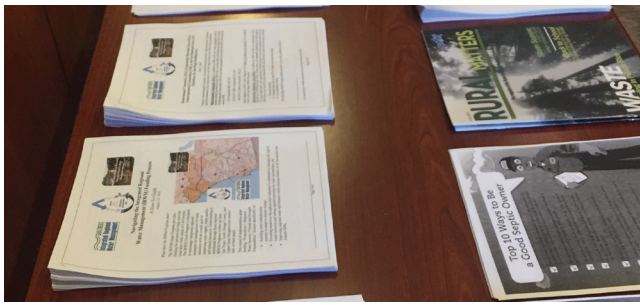
INTEGRATED REGIONAL WATER MANAGEMENT

SAN DIEGO FUNDING AREA WATER NEEDS ASSESSMENT

DRAFT APRIL 2019





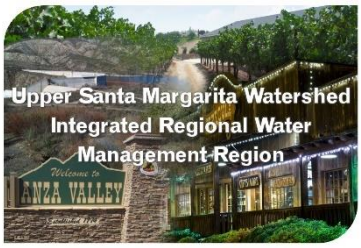
Prepared by the Tri-County Funding Area Coordinating Committee

SAN DIEGO Integrated Regional Water Management

SOUTH OC WATERSHED MANAGEMENT AREA

Upper Santa Margarita Watershed Integrated Regional Water Management Region

This page has been left blank.



San Diego Funding Area

Water Needs Assessment

DRAFT

April 2019

Prepared by Woodard & Curran, Climate Science Alliance, and Rural Communities Assistance Corporation for the Tri-County Funding Area Coordinating Committee

April 1, 2019

For further information, contact:

Mark Stadler, IRWM Program Manager
San Diego County Water Authority
4677 Overland Avenue
San Diego, CA 92123
858-522-6735
mstadler@sdcwa.org

This page has been left blank.

Table of Contents

1 Introduction 1

1.1 INTEGRATED REGIONAL WATER MANAGEMENT PROGRAM 1
1.2 DISADVANTAGED COMMUNITY INVOLVEMENT PROGRAM 3
1.3 WATER NEEDS ASSESSMENT 3
1.4 PARTNERS 4
1.5 DEFINITIONS 5

2 DAC Mapping In The SDFA 6

2.1 IDENTIFICATION AND MAPPING METHODS 6
2.2 RESULTS 7
2.3 IDENTIFICATION OF ADDITIONAL DAC COMMUNITIES 9

3 Existing Understanding Of DAC Needs 12

3.1 NEEDS IDENTIFIED BY THE IRWM PLANS 12
3.2 DAC UNDERSTANDING FROM LITERATURE REVIEW 18

4 Community Outreach And Engagement 21

4.1 COMMUNITY WATER NEEDS QUESTIONNAIRE 23
4.2 COMMUNITY MEETINGS 24
4.3 WEBINARS 27
4.4 OUTREACH RESULTS 27

5 Evaluation Of Process And Engagement 29

6 Summary Of Water Management Needs And Issues From Survey Respondents 30

6.1 WATER CHALLENGES FOR THE SAN DIEGO FUNDING AREA 30
6.2 INPUT ON MOST PRESSING NEEDS AND CONCERNS 41
6.3 BENEFICIAL PROJECTS 42

7 Barriers To DAC Involvement In IRWM 44

7.1 PARTICIPANT BARRIERS 44
7.2 INSTITUTIONAL BARRIERS 45

8 Opportunities To Address Barriers To Participation And DAC Needs 47

Acronyms and Abbreviations

ACS	American Community Survey
CPA	Community Planning Area
CRA	Colorado River Aqueduct
CSA	Climate Science Alliance
DAC	Disadvantaged Community
DACI	Disadvantaged Community Involvement
DWR	Department of Water Resources
EDD	Employment Development Department
EDA	Economically Distressed Area
EJ	Environmental Justice Community
IRWM	Integrated Regional Water Management
MHI	Median Household Income
MOU	Memorandum of Understanding
MWD	Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Orange County
NAWMA	Native American Water Masters Association
NGO	Non-Governmental Organization
O&M	Operation and Maintenance
Prop	Proposition
RCAC	Rural Community Assistance Corporation
RWMG	Regional Water Management Group
SDAC	Severely Disadvantaged Community
SDCWA	San Diego County Water Authority
SDFA	San Diego Funding Area
SWP	State Water Project
TMF	Technical, Managerial, Financial
Tri-County FACC	Tri-County Funding Area Coordinating Committee
U.S. EPA	United States Environmental Protection Agency
USMW	Upper Santa Margarita Watershed
URC	Underrepresented Community

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.

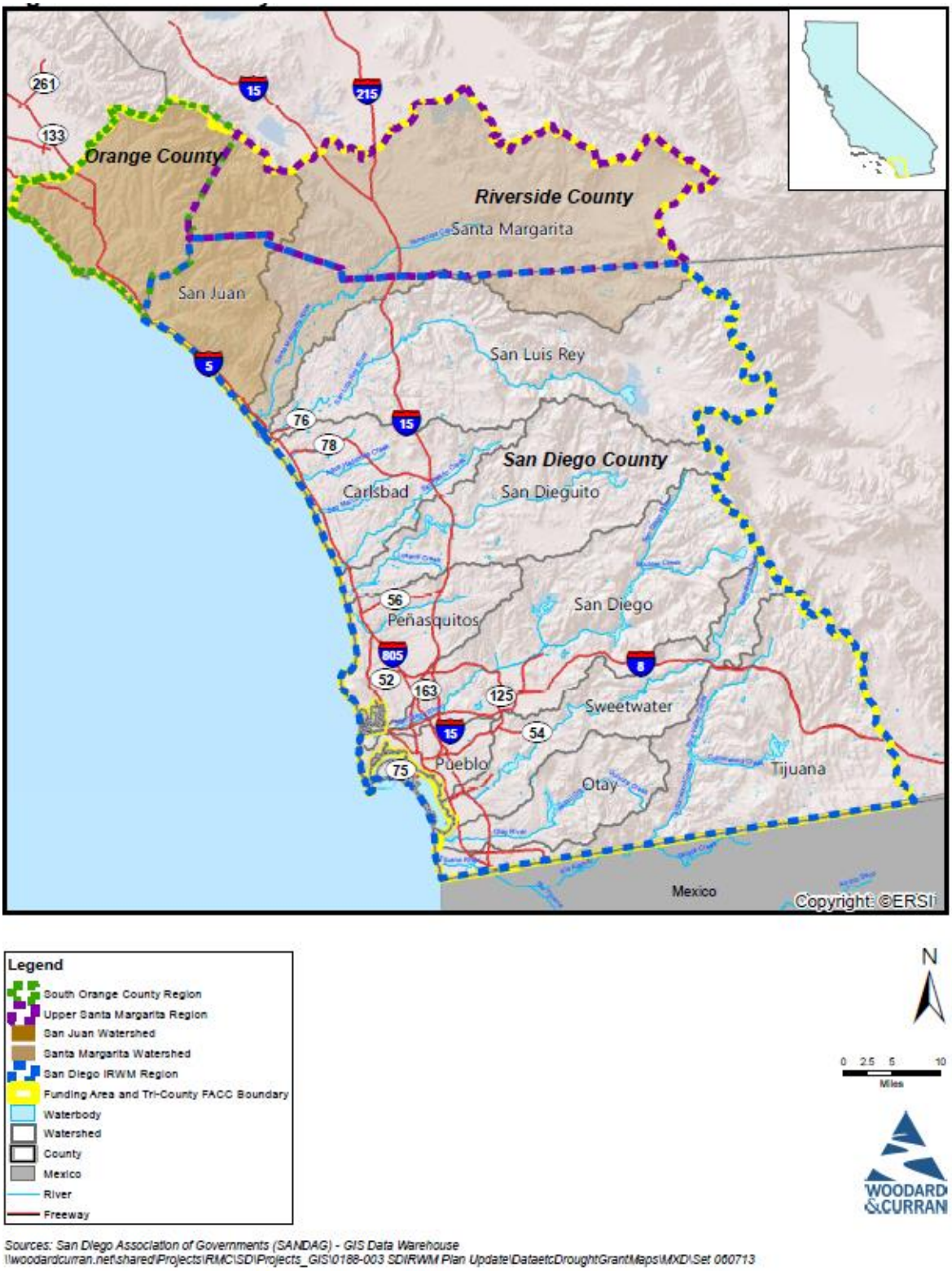
The San Diego Funding Area (SDFA) includes three IRWM Regions: San Diego, Upper Santa Margarita Watershed, and South Orange County, each of which is managed by its respective Regional Water Management Group (RWMG).

- The San Diego IRWM effort is led by an RWMG comprising the City of San Diego, the County of San Diego, and the San Diego County Water Authority (SDCWA).
- The Upper Santa Margarita Watershed IRWM effort is led by an RWMG comprising the Rancho California Water District, County of Riverside, and Riverside County Flood Control and Conservation District.
- The South Orange County Watershed Management Area IRWM Group is led by an RWMG comprising the County of Orange, Municipal Water District of Orange County, and South Orange County Wastewater Authority.

The RWMGs of the SDFA decided early on to take a coordinated approach to the IRWM Program. They formed the Tri-County Funding Area Coordinating Committee (Tri-County FACC) through a Memorandum of Understanding (MOU) to collaborate on projects and communication within and across the three planning regions. The Tri-County FACC's regular meetings since 2008 have enabled the integrated management of watersheds and resources that cross jurisdictional lines. The RWMGs share data and information to inform interregional efforts and facilitate collaboration within the SDFA.

The Tri-County FACC MOU also establishes how IRWM grant funds will be allocated to each of the IRWM Regions in the SDFA, improving relations between RWMGs by eliminating funding-related conflicts. Successful funding agreements were achieved for each round of Proposition 84 funding, and for the Disadvantaged Community (DAC) Involvement and planning rounds of Proposition 1. The Tri-County FACC MOU shows the willingness of these agencies to work collaboratively to solve important water resource conflicts, furthering the integration of water resource management.

Figure 1: SDFA IRWM Areas and Overlapping Watersheds



Source: 2019 San Diego Integrated Regional Water Management Plan

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 DAC Involvement (DACI) Program to support DACs, communities in Economically Distressed Areas (EDAs), Underrepresented Communities (URCs) and communities facing Environmental Justice concerns (EJ communities)[1]. 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 SDFA;
- Identify strategies that encourage and enable DACs to participate in planning efforts and secure project funding;
- 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.

1.3 Water Needs Assessment

In 2018, approximately $5.5 million was awarded to the SDFA for identifying DACs and their needs, increasing DAC involvement in the three IRWM Regions, and supporting DACs in preparing for upcoming funding opportunities. Funding was included for development of a joint Water Needs Assessment for the SDFA, let by the Tri-County FACC. The Tri-County FACC also agreed to share the materials with the County of Orange to allow a cohesive outreach strategy within all of Orange County (which includes watershed management areas outside the SDFA).

The Tri-County FACC extended the specific goals of the DACI Program to the Water Needs Assessment, with the intention of better understanding its DACs, and expanding outreach to these communities. The goals of the Water Needs Assessment are to:

1) Identify DACs, EDAs, URCs, and EJ communities;
2) Identify and characterize water-related issues and needs of identified communities; and
3) Increase DAC participation in the IRWM planning process.

The Water Needs Assessment is designed to help distill the water management needs of DACs in each IRWM Region to provide a better understanding of the needs of the communities, which may help direct resources and funding where they are needed. To achieve this goal, a short questionnaire was distributed, and the Tri-County FACC hosted informational community meetings to survey water resource needs across such categories as drinking water accessibility and affordability, wastewater system issues, stormwater and flood management, compliance issues, and water system financing. The community meetings were also used to initiate conversations about how the IRWM Program may better engage with the targeted communities. Outreach methods are described further in *Section 4: Community Outreach and Engagement* below. In addition to outreach, a review of DAC information

[1] DWR does not consider URCs and EJs as DAC communities. DAC and EDA are considered DAC if they meet MHI and economic criteria described in *Section 1.5 Definitions*.

gathered through the 2019 IRWM planning effort is integrated into this report, which supplements information gathered via outreach.

Overall, 35% 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 of the needs facing DACs, it is not considered to be an exhaustive characterization of all DAC needs in the region. The water challenges described by DACs in the SDFA are generally consistent with the known water needs identified by the three IRWM Plans in the SDFA, although stakeholders from each planning region placed different emphasis or priority on identified needs, which may be due to the organizations who participated in the Water Needs Assessment. The scope of the Water Needs Assessment did not include a process to verify identified needs, recognizing that communities themselves have direct knowledge and experience that enables them to identify their needs best. As a result, data considered in this assessment necessarily reflects the perceptions and biases of its participants.

1.4 Partners

The partners engaged in this Water Needs Assessment included the Tri-County FACC partners, along with their consulting team (Woodard & Curran) and two community non-governmental organizations (NGOs) - the Climate Science Alliance (CSA) and the Rural Community Assistance Corporation (RCAC). These NGOs were selected to support the Water Needs Assessment based on their experience with engaging DACs and analyzing complex data.

1.4.1 Woodard & Curran

Woodard & Curran is an integrated engineering, science, and operations company that has helped 85% of California's population complete their IRWM planning efforts. The firm has provided overall program leadership for the San Diego IRWM region since 2007, in addition to programmatic support to the region by preparing eight regional grant applications and managing the RWMG, Regional Advisory Committee, and Tri-County FACC. Additionally, Woodard & Curran has worked with the Upper Santa Margarita IRWM Region as program manager since 2012, providing support for the 2014 IRWM Plan update and four regional grant applications.

1.4.2 Climate Science Alliance

CSA is a boundary organization focused on bridging relationships between scientists, government and the broader community to support climate resilience in communities and natural areas. With more than 250 network members, CSA maintains relationships across San Diego County that directly support disadvantaged communities and Title 1 schools and works closely with regional tribes through its Regional Tribal Working Group and Climate Kids programs.

1.4.3 Rural Assistance Community Corporation

RCAC provides training, technical and financial resources and advocacy so rural communities may achieve their goals and vision. RCAC maintains relationships with regional tribal communities and has a history of facilitating workshops as well as supporting community-based water projects in rural communities in 13 western states.

1.5 Definitions

To define DACs, EDAs, URCs and EJ communities in the SDFA, the Water Needs Assessment applied regional characteristics to DWR's definitions. The process for determining these definitions is discussed below. Note that there is some overlap between these terms, as demonstrated in the results of the analysis in Figure 2. The following definitions were used:

Disadvantaged Communities (DACs): DACs are defined by DWR 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 a MHI below $51,026 were considered DAC (80% of statewide MHI), and MHI below $38,270 were considered SDAC (60% of statewide MHI).

Economically Distressed Area (EDA): Also 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 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 persons per square mile, consistent with DWR's EDA mapping tool's methodology.

Underrepresented Communities (URCs): DWR does not define URCs, but the SDFA defines URCs as communities that have little or no representation in water policy decision-making and/or water resource management projects, or that historically have disproportionately less representation in public policy or decision-making forums. All Native American Tribes are considered URCs under the state's IRWM Program, regardless of their economic status.

Environmental Justice (EJs): EJ communities are defined by the SDFA as communities that are mapped with an EJ Index of 80-100 percentile for any EJ index compared to the State on the Environmental Protection Agency's (U.S. EPA) EJ Screen tool (https://ejscreen.epa.gov/mapper/). EJ indices consider a variety of air quality impacts to human health (particulate matter, air toxic cancer risk, and respiratory hazard), traffic proximity and noise, lead paint, superfund and hazardous waste locations, and wastewater discharges, among others. EJ communities may also be mapped using CalEnviroScreen, maintained by the California Office of Environmental Health Hazard Assessment (OEHHA). The SDFA considers a community to be an EJ community if it falls within the 80-100% percentiles in CalEnviroScreen.

URCs and EJ communities are both more difficult to map than EDAs and DACs, and in many ways cannot be truly mapped, as they are more likely to comprise individuals who share experiences or backgrounds rather than a physical, location-based community. However, URCs and EJ communities are both communities that do not have equal access to water resource-related decision-making, or historically have not been involved in such decision-making. For the purpose of this assessment, an EJ community is considered a subset of URCs. DWR does not consider URCs and EJs to be DAC communities. These communities are still eligible to receive Proposition 1 Funding, but are not eligible for the 10% set-aside reserved for DACs and EDAs.

2 DAC Mapping in the SDFA

An initial task of the Water Needs Assessment consisted of gathering information on how the three IRWM Regions have identified DAC needs and engaged DACs. This task involved consolidation of the three regions' DAC contact lists and updating the mappings of DACs. The following describes how the maps updated to reflect identification of DACs in the SDFA.

2.1 Identification and Mapping Methods

To identify DACs, the Tri-County FACC updated its maps to pinpoint smaller pockets of DACs for potential outreach. The mapping process is described below.

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 SDFA. 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[1]
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

[1] Census tracts and block groups not available

2016 Census data was utilized in this Assessment, consistent with the DAC Mapping tool developed by DWR ((https://gis.water.ca.gov/app/dacs/) for use in the IRWM program. The Prop 1 2016 IRWM

Program Guidelines recommend the use of the 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 Census data. 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.

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.

EJ communities were mapped using U.S. EPA's EJScreen tool (https://ejscreen.epa.gov/mapper/). 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.

Finally, to determine which cities and municipal agencies have DACs, EDAs, or EJ communities in their jurisdictions, these areas were overlaid with maps of jurisdictional boundaries. DACs identified from this mapping process are presented in the next section.

2.2 Results

The Water Needs Assessment encompasses DACs, SDACs, EDAs that qualify under the EDA definition criteria defined in *Section 1.5: Definitions* above, and the EJ and tribal subsets of URCs. The EDA criteria include: Criterion #1 Financial Hardship, Criterion #2 Unemployment Rate at Least 2% Higher than Statewide Average, and Criterion #3 Low Population Density.

There are approximately 4.2 million people living in the SDFA, 22% of which reside in DACs, SDACs, EDAs, and EJ communities. These populations are characterized further in *Section 4.4: Outreach Results.*

2.2.1 San Diego IRWM Region DACs

In the San Diego IRWM Region, six of the County's 18 incorporated cities are considered DACs or contain DACs. Additionally, 15 of the County of San Diego's 30 unincorporated Community Planning Areas (CPA) are considered or contain DACs. Of the communities in the region that have been identified as DACs, the majority are urban DACs. Urban communities are those that lie within water and wastewater agency service areas while rural DACs do not. Rural DACs may be found along the eastern portion of the region.

There are approximately 3,253,356 people living in the San Diego IRWM region, 27% of which reside in DACs, SDACs, EDAs, and EJ communities. Figure 2 shows DACs to be geographically distributed throughout the region with numerous census tract and block group neighborhoods in the region's planning areas having MHIs less than 80% of the statewide average. The larger, isolated DAC area south of the border between San Diego and Orange Counties is Marine Corps Base Camp Pendleton, which has limited permanent populations, with much of the census tract unoccupied by residents. Low population density EDAs were located mainly throughout the eastern portion of the SDFA. El Cajon is the only area in the San Diego IRWM region that meets the unemployment EDA criteria of being at least 2% higher than the statewide average. EJ communities are concentrated in the central portion of the City of San Diego, as well as central El Cajon, and all identified EJ communities in the region also overlie DACs, as seen in Figure 4Figure 3.

The following cities and communities include DACs within the San Diego IRWM region:

- City of El Cajon
- City of Imperial Beach
- City of Escondido
- City of Vista
- City of National City
- City of San Diego (19 CPAs)
- Pendleton-DeLuz CPA
- Palomar Mountain CPA
- Fallbrook CPA
- North Mountain County CPA
- North County Metro CPA
- Twin Oaks CPA
- Ramona CPA
- Bostonia County/Lakeside CPA
- Central Mountain CPA
- Julian CPA
- Alpine CPA
- Cuyamaca CPA
- Spring Valley CPA
- Mountain Empire CPA
- Pine Valley CPA

2.2.2 Upper Santa Margarita Watershed IRWM Region DACs

The Upper Santa Margarita Watershed IRWM Region includes both urban and rural DACs, defined in *Section 3.1.1: San Diego IRWM Region DACs,* below. There are approximately 374,964 people living in Upper Santa Margarita IRWM region, 1.9% of which reside in DACs, SDACs, EDAs, and EJ communities. Figure 2 shows the location of these DACs, SDACs, EDAs, tribal land, and EJ communities within the SDFA. There are no EJ communities in the USMW IRWM region, as defined by U.S. EPA's EJScreen tool.

The DACs in the eastern portion of the Region, particularly in the Anza area, are considered rural and have unique water supply and water quality needs. The following cities and communities include DACs within the Upper Santa Margarita Watershed IRWM region:

- Temecula
- Aguanga
- Anza
- Lake Riverside
- Unincorporated Areas

2.2.3 South Orange County IRWM Region DACs

All DACs within the South Orange County IRWM region are considered urban as they are all located within the service area of a water district and wastewater agency. There are approximately 596,040 people living in the South Orange County IRWM region, 6% of which reside in DACs, SDACs, EDAs, and EJ communities.

Figure 2 shows the location of these DACs, SDACs, EDAs, tribal land, and EJ communities within the SDFA. There are no EJ communities in the USMW IRWM region, as defined by U.S. EPA's EJScreen tool.

Most of the South Orange County IRWM region has been urbanized with DACs found in small pockets throughout the region. The region is generally more affluent than other areas in Orange County that tend to be more densely populated with less access to green space and public transportation to parks and beaches. However, the following South Orange County cities include portions of DACs and EDAs within their service area, as do portions of the unincorporated county:

- Laguna Woods
- Laguna Hills

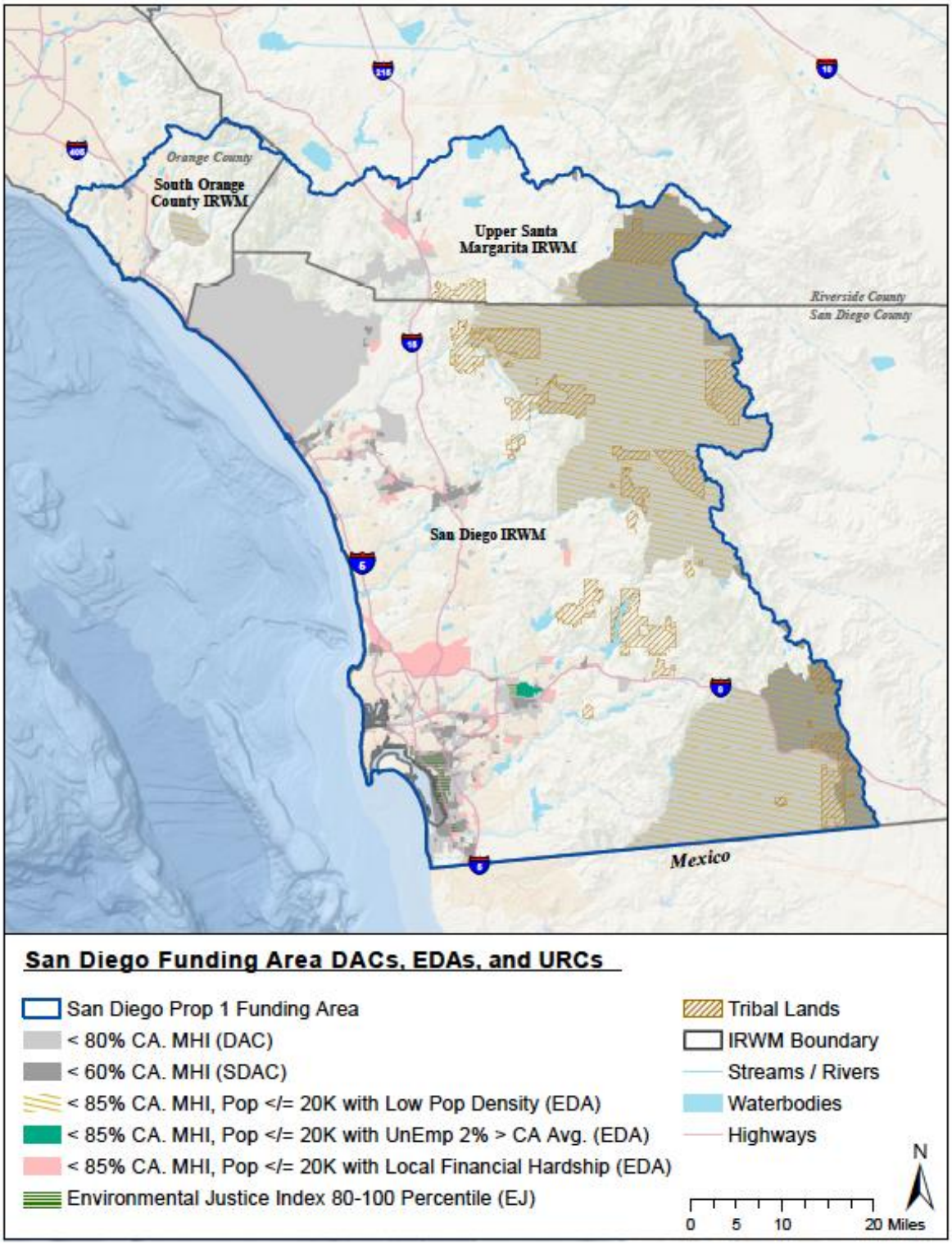
- Lake Forest
- Mission Viejo
- Rancho Santa Margarita
- Laguna Niguel
- Dana Point
- San Juan Capistrano
- San Clemente
- Unincorporated Area

2.3 Identification of Additional DAC Communities

Not all communities are easily or holistically mapped using the above mapping techniques. Acknowledging this fact, the Tri-County FACC undertook an additional effort to identify communities in the SDFA that had not previously been acknowledged or had no or limited previous participation in IRWM.

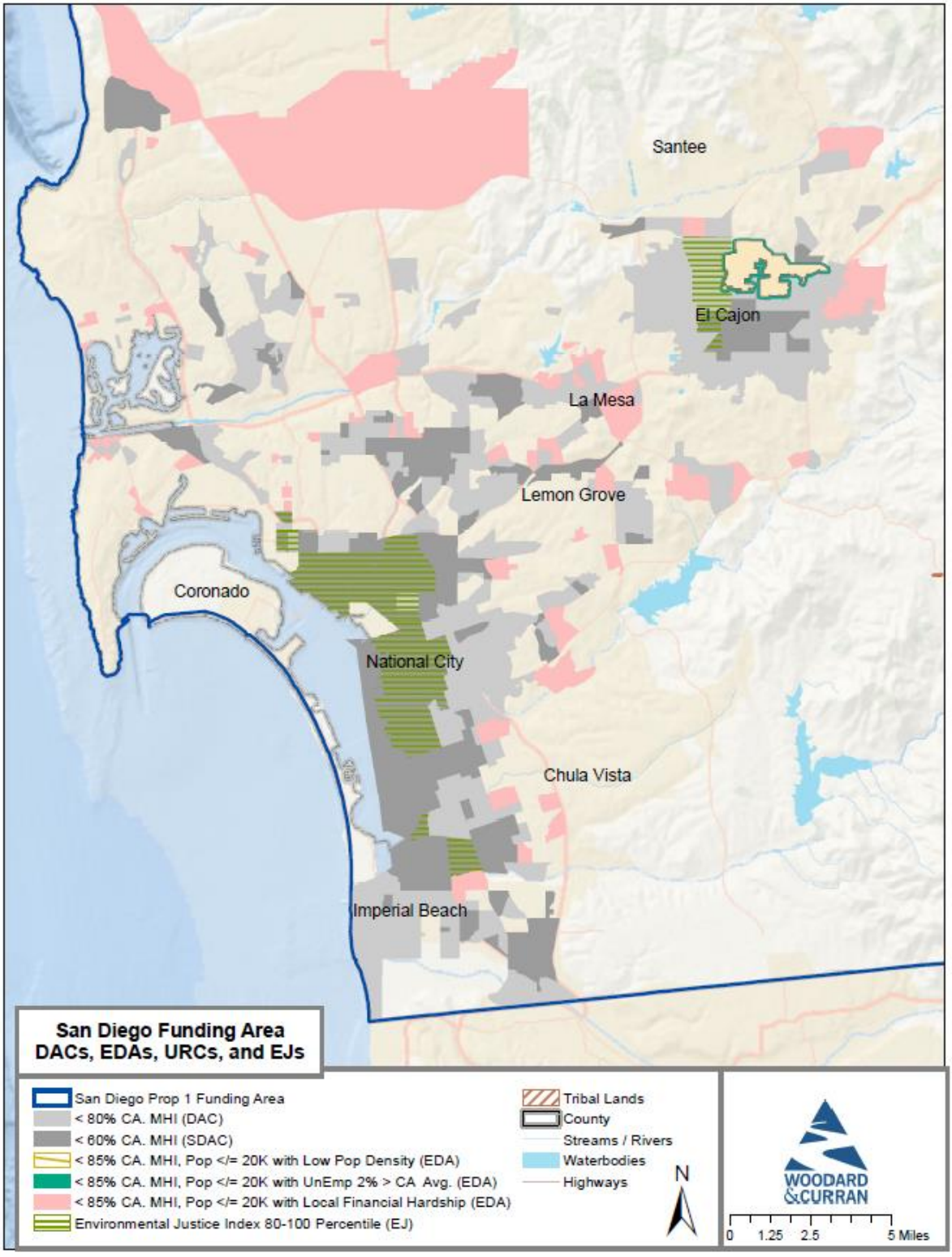
In March 2018, the Tri-County FACC presented a list of 140 individual stakeholders representing DACs to NGO partners based on previous engagement and outreach efforts, coupled with preliminary DAC mapping results. This list was then updated based on historic knowledge within the Water Needs Assessment team, as well as through targeted outreach to some stakeholders already on the list who were asked to recommend additional contacts. 253 stakeholders, 14 of which were tribal stakeholders, were added to the list through this process. The final outreach list included 393 stakeholders representing 196 tribal stakeholders, municipalities, water districts, water companies, and community-based organizations.

Figure 2: DACs, SDACs, EDAs, and EJs within the San Diego Funding Area



Note: The location of DACs is based on 2016 Census data and may not reflect current land use.

Figure 3: Location of EJs in the San Diego IRWM Region



3 Existing Understanding of DAC Needs

While this Water Needs Assessment focuses on stakeholder feedback received, it is supported and framed within the context of knowledge provided by existing plans and previous outreach.

Targeted outreach to DACs has been undertaken by all members of the Tri-County FACC in recent years, beginning with the first grant program under Proposition 50 in order to understand the specific needs and water management challenges of DAC communities. Under the Proposition 1 DACI Program, all three RWMGs in the SDFA issued a call for projects in 2016. Across the SDFA, 23 applications were received, 22 within the San Diego IRWM region and one within the Upper Santa Margarita Watershed IRWM region. The primary themes illustrated in the 23 project proposals submitted from throughout the SDFA under the DACI Program were as follows:

- 8 projects addressed flooding,
- 9 addressed surface water quality,
- 10 addressed groundwater quality,
- 7 addressed safe and reliable drinking water,
- 5 addressed infrastructure upgrades or new infrastructure,
- 6 addressed trash in watersheds,
- 1 addressed a mosquito problem, and
- 1 is a groundwater study of the Cahuilla Valley Groundwater Basin.

Nine DACI Program projects were funded in the SDFA, five of which were from new applicants not previously involved in an IRWM grant program. When combined with DAC projects that have been funded by the three IRWM regions in Proposition 50 and Proposition 84, more than $19 million has been awarded to DACs:

- San Diego IRWM has awarded approximately $14 million, constituting 15% of all available funding, to DAC projects since 2008.
- Upper Santa Margarita Watershed IRWM has awarded $1.1 million, constituting 12% of all available funding, to DAC projects since 2008.
- South Orange County IRWM has awarded $4.6 million, constituting 12% of all available funding, to DAC projects since 2008.

Notable projects located in DACs in the SDFA that have been recently funded are described in callout boxes below in addition to a background summary of regional needs and DAC needs.

3.1 Needs Identified by the IRWM Plans

In addition to needs identified through outreach for the Water Needs Assessment, this document also summarizes regional water challenges identified through each Region's IRWM Plan: the 2019 San Diego IRWM Plan Update, the 2014 Upper Santa Margarita Watershed IRWM Plan, and the 2018 IRWM Plan for South Orange County. Each Region developed goals in their respective IRWM plans to address the water management challenges listed below. These regional issues encompass both DAC and non-DAC needs and issues.

3.1.1 San Diego IRWM Region

The San Diego IRWM Program broadly distinguishes DACs as either urban or rural. Urban communities are those that lie within water and wastewater agency service areas. Because of this, their water resource needs are generally centered on community development and surface water quality issues. While some communities may have rural characteristics, if they are served by a water or wastewater agency, their needs generally align more with urban DACs, and are therefore considered urban DACs under the San Diego IRWM Program. Rural DACs are located outside the jurisdictional boundaries of the region's water and wastewater agencies and may have difficulty meeting drinking water needs with a safe and reliable source due to infrastructure, source water quality, and other issues. Additional water-related priorities and challenges pertaining to either urban and rural DACs identified in the 2019 San Diego IRWM Plan are further outlined in Table 2.

The San Diego Regional Advisory Committee, the region's stakeholder advisory group, includes one representative of urban DACs and one of rural DACs.

Additionally, the San Diego Planning Region is home to 18 tribes. The San Diego RWMG has included a tribal seat on its Regional Advisory Committee since 2013. This number was expanded to three tribal seats, constituting a tribal caucus, in 2019. The caucus allows for additional representation on various San Diego IRWM workgroups.

Project Highlight: Conservation Home Makeover Project in Chollas Creek Watershed

The Conservation Home Makeover engaged 50 low-income families within a disadvantaged community of San Diego to mitigate drought impacts by installing greywater systems, rain barrels, low-water-use plumbing fixtures and water-wise landscaping and fruit trees, thus providing a number of water conservation, water supply, food resource, and educational benefits to a community in need.

Photo credit: Loisa Burton, SDCWA

Table 2: Urban and Rural Water-Related Priorities and Challenges in San Diego IRWM Region DACs

Urban Priorities and Challenges	Rural Priorities and Challenges
• Community development • Surface water quality • Flooding • Illegal dumping and trash • Bay and lagoon contamination • Food security • Increased paved surfaces • Water costs • Public safety • Peer initiated outreach and education • Balancing projects & economic growth • Rehabilitating urban streams • Capacity, including for O&M • Health of coastal resources • Sea level rise	• Source water quality • Safe and reliable drinking water • Drinking water regulation compliance • Wastewater intrusion • Inadequate or failing infrastructure • Flood and droughts • Effects of climate change • Wildfires • Poor economies • Small financial base • Cost of supplemental treatment • Capacity to apply for and manage grants • Groundwater contamination • Inadequate wastewater treatment

In addition to characterizing the urban and rural water challenges of DAC communities, the 2019 San Diego IRWM Plan Update included a list of major water issues and conflicts for the entire Region including:

- **Flood control** – Difficulty in permitting invasive species removal and limitations on geographic or seasonal access to channels in addition or zoning or land use restrictions increases the difficulty of flood control management. More reliable funding sources for flood control projects are needed.
- **Stormwater** – Diverting noncompliant stormwater to groundwater recharge or habitat improvement areas may conflict with surface water protection goals. The economic feasibility of stormwater capture and use is constrained by local conditions in the San Diego Region and may reduce flows available to downstream beneficial uses.
- **Water supply** – Local supplies are limited and more costly than imported water supplies.
- **Water quality standards** – The need to meet water quality concentration limits may result in reduced discharges or flows required to support downstream beneficial uses. The 303(d) listing/TMDL process may prevent the implementation of water quality improvement projects that do not directly result in attainment of water quality goals.
- **Institutional Issues** – Inter-border jurisdictional issues, political conflicts, and staffing needs may result in impacts to water resources.
- **Salinity/Brine Management** – Brine discharges to sewer may conflict with water reuse needs while brine discharges to the ocean may conflict with environmental protection needs. Water conservation measures may lead to increased wastewater salinity.
- **Recreation** – Recreational use of water bodies may impact the water quality standards implemented to support recreational use.
- **Climate change** – Water supply availability may be affected due to droughts, seawater intrusion, changes in precipitation volumes and timings, altered fire and weather regimes, and potential changes in the availability of imported water supplies.

- **Wastewater** – Cost drivers associated with wastewater systems including treatment plant upgrades, ongoing treatment and operations, and infrastructure maintenance.
- **DAC Water Systems** – A lack of municipal water and wastewater service in many rural DACs, managing water infrastructure costs including O&M, and lack of TMF (technical, managerial, financial) capacity of DAC water system operators.

The San Diego IRWM Region is large and contains 11 watersheds, 22 separate groundwater basins, and over 200 streams and creeks which converge into five primary rivers. Local water supplies (groundwater, local surface water, and recycled water) account for approximately 15% of the region's current water demands. Imported water is supplied by SDCWA to 24 member agencies within the Region. Imported water is integrated with desalinated water into treated water in addition to existing drinking water supplies for regional distribution (2019 San Diego IRWM Plan).

Rural residents that live outside the SDCWA service area are entirely dependent on groundwater resources and rely exclusively on individual groundwater wells or community water wells operated by small community water systems or private water companies. The availability of groundwater in these areas is limited by (1) available precipitation recharge, (2) recharge infiltration limitations, (3) low aquifer yields, and (4) limited groundwater storage capacity (2019 San Diego IRWM Plan).

3.1.2 Upper Santa Margarita Watershed IRWM Region

The Upper Santa Margarita Watershed IRWM Region has several communities and areas that have been identified as DACs, including the communities of Anza and Aguanga and portions of the cities of Murrieta and Temecula. In the development of the 2007 IRWM Plan, representatives formed the Anza Valley Municipal Advisory Council, which has evolved into the Anza Groundwater Association and meets bi-monthly to expand and share knowledge relating to the quality and quantity of groundwater in the Anza area.

The 2014 IRWM Plan Update included additional outreach to tribal communities and DACs to encourage participation in the update process. Representatives are included on the Upper Santa Margarita Watershed IRWM Distribution List and receive all stakeholder communication, primarily through email. DAC and tribal representatives also participate in stakeholder advisory committee (SAC) meetings in the Upper Santa Margarita Watershed IRWM Program to have a voice in the planning process, which includes submitting goals, priorities, and projects.

Project Highlight: Groundwater Study in Anza

The study was completed in July 2014 by the Ramona Band of Cahuilla Indians with assistance from the U.S. Geological Survey and Santa Margarita River Watershed Watermaster. It aimed to better define the groundwater basin and collect new data on groundwater levels and quality and recommended continued monitoring of groundwater levels and quality.

This area depends on the Cahuilla Valley Groundwater Basin for its water supply; obtaining imported water is infeasible. It also lacks flood control and is subject to frequent rural flooding, and has issues with water quality, particularly high nitrate levels and naturally occurring constituents that exceed limits.

Photo credit: Nicolette Jonkhoff, Ramona Band of Cahuilla Indians

The Upper Santa Margarita Watershed IRWM Plan Update in 2014 identified a number of IRWM goals to address the following regional issues:

- **Imported water dependence** – High dependence on imported water makes the region vulnerable from imported water supply issues. These sources are susceptible to interruption during catastrophic conditions such as earthquakes and drought and may be further strained during climate change. The quality of imported water can vary depending on source and the cost of imported water is expected to increase in the future.
- **Groundwater supply** – In order to reduce reliance on imported supplies, groundwater resources must be maximized in the Temecula Valley and Cahuilla Valley Groundwater Basins.
- **Surface water quality** – Several stream reaches within the Region are on the Regional Control Board's 2010 303(d) listing for water quality impairments including nutrients, bacteria, metals, pesticides, sulfates, TDS, and toxicity.
- **Flood management** – Flood hazards caused by historic development in floodplains has caused tens of millions of dollars in damage, especially in Old Town Temecula along Murrieta Creek.
- **Aquatic/riparian habitat** – Pressure from development can cause habitat degradation and lead to the establishment of invasive species which adversely impact the habitat diversity, hydrology, and ecological function of the river.
- **Climate change** – Disadvantaged communities are more vulnerable to water supply and water quality issues due to limited resources, which will become more vulnerable as a result of climate change.

According to the IRWM Plan Update, over 50% of the water demands in the Upper Santa Margarita Watershed IRWM Region are met by treated and untreated surface water imported from the Metropolitan Water District of Southern California (MWD). Other major supply sources include surface, ground, and recycled water. Water received from MWD can be unreliable due to water allotment reduction during droughts as other states increase their diversions in accord with their authorized entitlements, leading to the goal to diversify the water supply portfolio in the Region (2014 Upper Santa Margarita IRWM Plan Update).

Surface water and groundwater supporting surface water in the Santa Margarita River Watershed have been under some form of court jurisdiction since 1928. A Watermaster has been assigned by the U.S. District Court for the Southern District of California to oversee all water uses within the Santa Margarita River Watershed. Local surface water sources include Seven Oaks Reservoir, Vail Lake, and Railroad Canyon Reservoir (Canyon Lake). Canyon lake contains significant levels of disinfection byproducts possibly related to imported water while Vail Lake and Seven Oaks Reservoir do not currently have water quality concerns (2014 Upper Santa Margarita IRWM Plan Update). Groundwater supplies in the Region are pumped from two groundwater basins: the Temecula Valley Groundwater Basin (also known as the Murrieta-Temecula Groundwater Basin) and the Cahuilla Valley Groundwater Basin. The largest concern within these groundwater basins include the decline in water levels in the Cahuilla Valley Groundwater Basin.

The DACs in the eastern portion of the Region, particularly in the Anza area, are reliant on the Cahuilla Valley Groundwater Basin for its water supply and is subject to frequent rural flooding. Water quality issues, particularly high nitrate levels and naturally occurring constituents that exceed water quality limits, are of concern (2014 Upper Santa Margarita IRWM Plan Update).

3.1.3 South Orange County

Historically, DAC engagement in the South Orange County IRWM Region has consisted of implementing projects and programs aimed at protecting the population as a whole, including residents who represent the disadvantaged population of the area. The South Orange County IRWM Plan outreach included collaboration with the Juaneño Band of Mission Indians and Hispanic community groups. Native American Tribes and other stakeholders are encouraged to participate in the IRWM Program although there is no tribal land located within the Region (IRWM Plan for South Orange County, 2018).

According to the IRWM Plan for South Orange County, all DACs in South Orange County are located within defined water agency service areas providing safe drinking water through service connections. As a result, water resources needs are generally centered on community development and surface water quality issues, rather than drinking water quality or drinking water supply issues. Surface water quality problems include water pollution for beaches within the area.

In 2018, the South Orange County Watershed Management Area (SOCWMA) stakeholders updated the IRWM Plan for South Orange County. The following water management challenges were identified:

Project Highlight: El Toro Water District Water Recycling Plant Project

The El Toro Water District increased the treatment and delivery of recycled water through a new tertiary treatment facility and distribution system in Laguna Woods, increasing water supply reliability in a DAC community. The new recycled water distribution system included 100,000 feet of recycled water pipelines beneath the roadways in portions of Laguna Woods and the northwest portion of Laguna Hills for irrigation purposes and is separate from the drinking water distribution system. The tertiary treatment plant produces as much as 3.7 million gallons per day of water, the maximum amount of raw wastewater entering the plant.

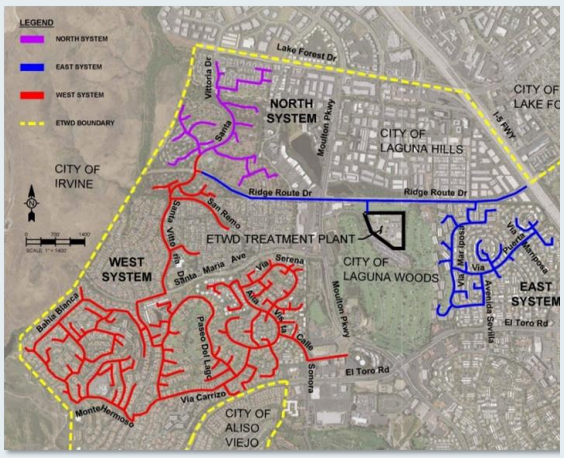


Photo credit: El Toro Water District

- **Adequate, reliable water supply** – North and Central Orange County obtains one-third of its water from imported sources while South Orange County obtains 97% of its water from imported sources despite some local groundwater resources. Environmental constraints such as drought and Delta pumping restrictions are affecting the reliability of imported water supply. Therefore, one objective of the SOCWMA stakeholders is to increase local water supply, sustainably manage groundwater resources, and maximize water use efficiency.
- **Growth, economic sustainability, recreation** – Population growth in the County leads to greater demand for potable water, a greater amount of generated wastewater, and a greater demand on recreational resources.
- **Water quality standards** – Water quality standards are becoming increasingly stringent and local agencies are challenged to meet regulatory water quality standards in a cost-effective manner.
- **Ecosystem impacts** – Urbanization increases imperviousness, thus modifying natural hydrology to produce flashier wet weather flows and increased dry weather runoff, which

can carry pollutants and lead to erosion and habitat degradation. The 2018 IRWM Plan identifies natural resource protection and restoration as a primary goal and efforts are underway by several stakeholders to address habitat degradation.

- **Climate change** – Climate change will influence water resources, water supply availability, and habitat.
- **Flood Risk Management**: it is anticipated that climate change will result in less frequent, warmer, and flashier precipitation events. The 2018 IRWM Plan identifies the need to remove floodplain in South Orange County from FEMA designated flood risk areas to prepare for larger storm flows. Additionally, the Water Quality Improvement Plan cited in the IRWM Plan places an emphasis on addressing impacts from hydromodification during wet weather flows.

South Orange County relies on imported water from the Metropolitan Water District of Southern California (MET) and the Municipal Water District of Orange County (MWDOC), the regional wholesaler in the County, for 97 percent of its total potable water demand. Users in some unincorporated areas utilize private groundwater wells. The major groundwater basin in the County, the Orange County Groundwater Basin, is located in the North/Central IRWM Region. The San Juan and San Mateo Groundwater Basins are located in South Orange County. The San Juan Groundwater basin cannot utilize its full capacity and contains TDS that is too high for domestic water use without treatment (IRWM Plan for South Orange County, 2018). Water from the basin is treated by the San Juan Basin Desalter and faces the threats of sea water intrusion and increasingly poor water quality. Despite the reliance of South Orange County on imported water, the IRWM Plan and DAC communities emphasized the importance of local water sources; indeed, the South OC IRWM Plan identified an adequate, reliable water supply as a top concern, making water supply efficiency and reliability one of the four main IRWM Goals.

3.2 DAC Understanding from Literature Review

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. A summary of additional literature review is presented here for broader context of the SDFA's DACs. A detailed summary of the literature review and characterization of DAC needs is provided in Appendix A.

3.2.1 San Diego IRWM Region

San Diego County is characterized by urban DACs that generally receive water service from their respective municipal water supplies, the largest of which (and serving the largest urban DAC population) is the City of San Diego, as well as rural DACs that rely on groundwater as their sole supply of potable water. In general, the urban DAC issues and needs in the City of San Diego are considered representative of typical urban DAC issues and needs in the San Diego IRWM region and represent 97% of DAC communities. Not all urban DAC concerns in the City of San Diego apply to all urban DACs in other municipalities, and some urban DACs in other municipalities may have additional needs not described here.

The City of San Diego is one of 24-member agencies that receives its water from SDCWA, which includes a mix of imported water, surface water, and desalinated seawater. Additionally, the City of San Diego has recycled water, surface water, and groundwater, and is in the process of pursuing potable reuse for future supply. According to the City's 2015 UWMP, water quality issues associated with imported water include high salinity levels, uranium, and perchlorate in Colorado River

Aqueduct (CRA) supplies and high levels of bromide and total organic carbon in State Water Project (SWP) supplies. Several water treatment plants have been upgraded to use ozone as a primary disinfectant to treat SWP water. Groundwater basins within the City of San Diego's service area are predominantly brackish and contain levels of TDS, chloride, and sodium (City of San Diego UWMP, 2015). The UWMP's projected climate change impacts on water demands predict a shift in timing of precipitation events, with a greater proportion of annual precipitation occurring in winter, and a smaller proportion of annual precipitation occurring in the spring and the fall as compared to historical precipitation patterns. These climate change impacts have been incorporated into water supply planning in the Region.

According to municipal websites and community plan updates, DAC communities within the City of San Diego use a combination of septic and sewer systems which are impacted by aging infrastructure and infrastructure failure. The Greater North Park Community Plan cited an urgent need to replace 100-year-old cast iron water mains. Issues of aging water infrastructure, insufficient capacity, and outmoded design are cited in many of the City's 19 DAC Community Plans. The Barrio Logan Community Plan discussed major flooding in streets caused by water main breaks. This sentiment is echoed by other DAC communities within the Chollas Creek sub-watershed as the creek feeds directly into the San Diego Bay and infrastructure is needed to capture, minimize, and prevent pollutants in urban areas. Many planning areas are implementing Low Impact Development strategies to meet MS4 permit requirements. Other DAC communities within city limits cited issues with canyon flooding causing erosion or localized flooding along roads resulting in temporary street closures.

Subregional Plans or Community Plans for CPAs for unincorporated communities in the County of San Diego also identify rural community water and wastewater infrastructure and related concerns. Some of these CPAs are partially served by a municipal water agency, but typically, these rural communities rely solely on local groundwater supplies for potable water. The Central Mountain CPA is unlikely to ever find imported water to be a feasible supply, and their community is 100% reliant on groundwater resources (Central Mountain Subregional Plan, 2016). While heavily reliant on groundwater, the groundwater may be high in nitrate or at risk of contamination from aging septic systems. Due to the distance from water and wastewater agencies, the availability of services is a major concern to many rural communities and may impact land use decisions. The North Mountain CPA Subregional Plan in 2016 stated that the cost to extend sewer services to backcountry does not outweigh low population and lack of demand, resulting in reliance on septic systems and leach fields. In the Ramona CPA, land restrictions only allow sewer service to 40% of the population (Ramona Community Plan, 2011). Future growth in some communities is restricted due to the limited hookups of groundwater to conserve supply (Pine Valley CPA Community Plan, 2016). Some unincorporated rural areas also contain unique biological resources and may be home to various types of conserved land, such as the Cuyamaca CPA, 75% of which is public property (Central Mountain Subregional Plan, 2016). Many plans cite concern over the protection of these biological resources in the face of climate change and the threat of wildfire. Climate change is also a concern for these communities due to the threat to limited water supply during drought.

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

3.2.2 Upper Santa Margarita Watershed IRWM Region

The rural community of Anza in the Upper Santa Margarita Watershed conducted a Groundwater Management Planning report in 2011 to understand their groundwater and plan for sustainable groundwater management. This report concluded that significant gaps in areal and temporal water

information exist and little is known about many of the well's condition or status. Additional efforts are needed to understand contaminant sources and control options which includes a better understanding of septic tanks as a potential source of groundwater contamination and further coordinated planning and data collection should be a priority to assess current trends in water levels and quality.

Needs for the other groundwater basin in the Upper Santa Margarita Watershed IRWM Region are summarized in the Temecula Valley Salt and Nutrient Management Plan written in 2014. This basin serves the cities of Temecula, Murrieta, and Wildomar as well as agricultural and rural residential users on the periphery of these urban areas including the Pechanga Band of Luiseno Mission Indians. The groundwater largely complies with Basin Plan groundwater quality objectives for TDS while shallow wells occasionally do not meet objectives. There has been a gradual historic trend in increasing TDS in the Basin which is expected to continue without implementation of salt management strategies. Septic tank discharges and turf grass fertilization represents the dominant sources (over 60 percent) of nitrate loads to the groundwater basin.

Rancho California Water District's 2015 Urban Water Management Plan states that 25-40% of its water comes from the Temecula Valley Groundwater Basin, 6% from recycled water, and the rest from imported water. There are no known water quality concerns that will significantly impact water supply reliability although constituents of concern include TDS, nitrate, VOCs, perchlorate, arsenic, fluoride, and manganese. Two wells were removed from production due to violating the MCL for arsenic and three other wells are on state-approved blending plans for exceeding the primary MCL for arsenic. The UWMP creates a contingency plan in the face of climate change which predicts increased frequency of severe weather patterns which may result in reductions of imported water supplies. Supplies were reduced by 15% in July 2015 due to an unprecedented 4-year drought.

The additional small, rural DACs in Riverside County include Aguanga and Lake Riverside Estates. These communities have limited services and utilities and declining groundwater levels. Cannibas farms are prevalent which have an unknown effect on water quality in the area. There is a potential for flash flooding during storm events and floods cause the release of excess sediment into Cahuilla Creek.

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

3.2.3 South Orange County

The regional water wholesaler in Orange County is the Municipal Water District of Orange County (MWDOC), which manages the imported water supply to more than 2.3 million residents and 28 water retail agencies. Almost all of South Orange County's potable water supply consists of imported water (97%) from the CRA and SWP, which is treated and distributed by MWDOC. According to MWDOC's 2015 UWMP, CRA sources contain higher TDS and SWP contains higher levels of organic matter, leading to the formation of disinfection byproducts and requiring ozone treatment processes. One large issue of concern is the invasive Quagga mussels found in CRA water, which has eliminated deliveries of CRA water into Diamond Valley Lake to keep the reservoir free from Quagga mussels. Climate change is also anticipated to affect future supply and demand on CRA water, exacerbating imbalances between increasing demands from rapid growth and decreasing supplies.

In addition to MWDOC supplies, water agencies supplement their water supply with recycled water or water from the Capistrano Beach groundwater recovery facility. According to the South Coast Water District UWMP, the San Juan Valley Groundwater Basin contains high TDS and all 4 tested wells

exceeded secondary MCL for TDS. All DACs in South Orange County are served by the South Orange County Wastewater Authority, which is a joint powers authority that manages the collection, transmission, treatment and disposal of wastewater. SOCWA produces recycled water for irrigation and commercial uses and also helps its member agencies meet the requirements of applicable National Pollutant Discharge Elimination System (NPDES) permits.

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

4 Community Outreach and Engagement

Input was solicited for the Water Needs Assessment through a variety of methods described in the following sections. A total of 96 individuals representing 69 organizations engaged with this Water Needs Assessment in some form, representing approximately 35% of organizations on the contact list. Figure 4 illustrates the composition of DAC respondents who participated in this Water Needs Assessment. 11 contacts are considered 'newly engaged' because they were both added to the contact list and actively engaged with the process through the course of the Water Needs Assessment.

Figure 5 (on the following page) shows the level of engagement across the SDFA, the locations of community workshops, and general locations of engaged individuals. These locations are summarized to keep the exact identity of participants anonymous. Engagement opportunities are described in more detail below.

Figure 4: IRWM Outreach Results

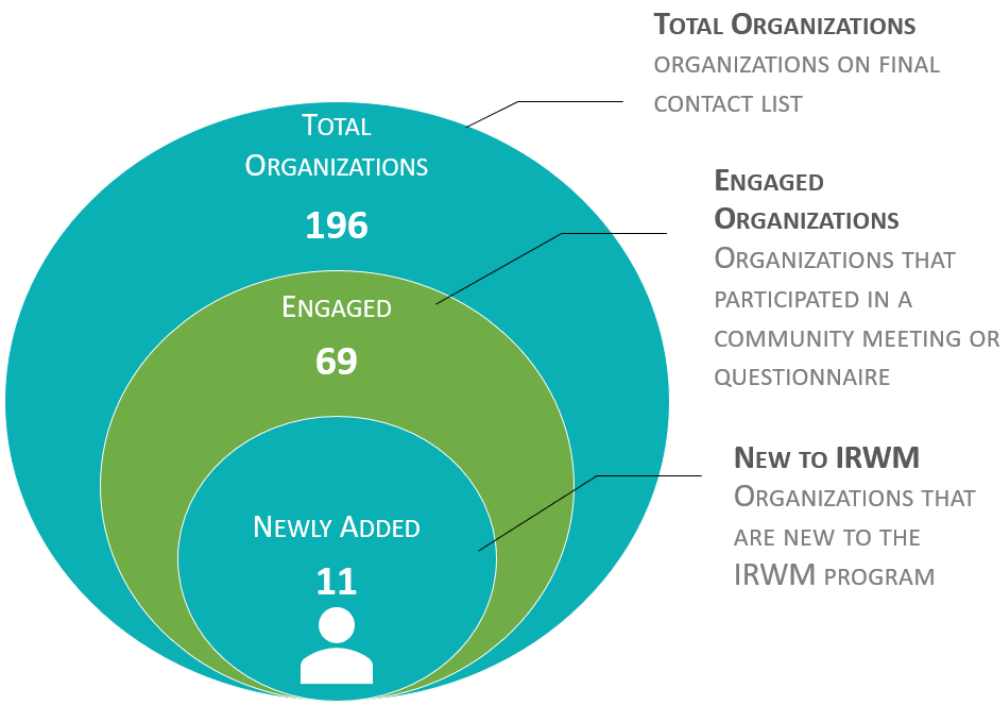
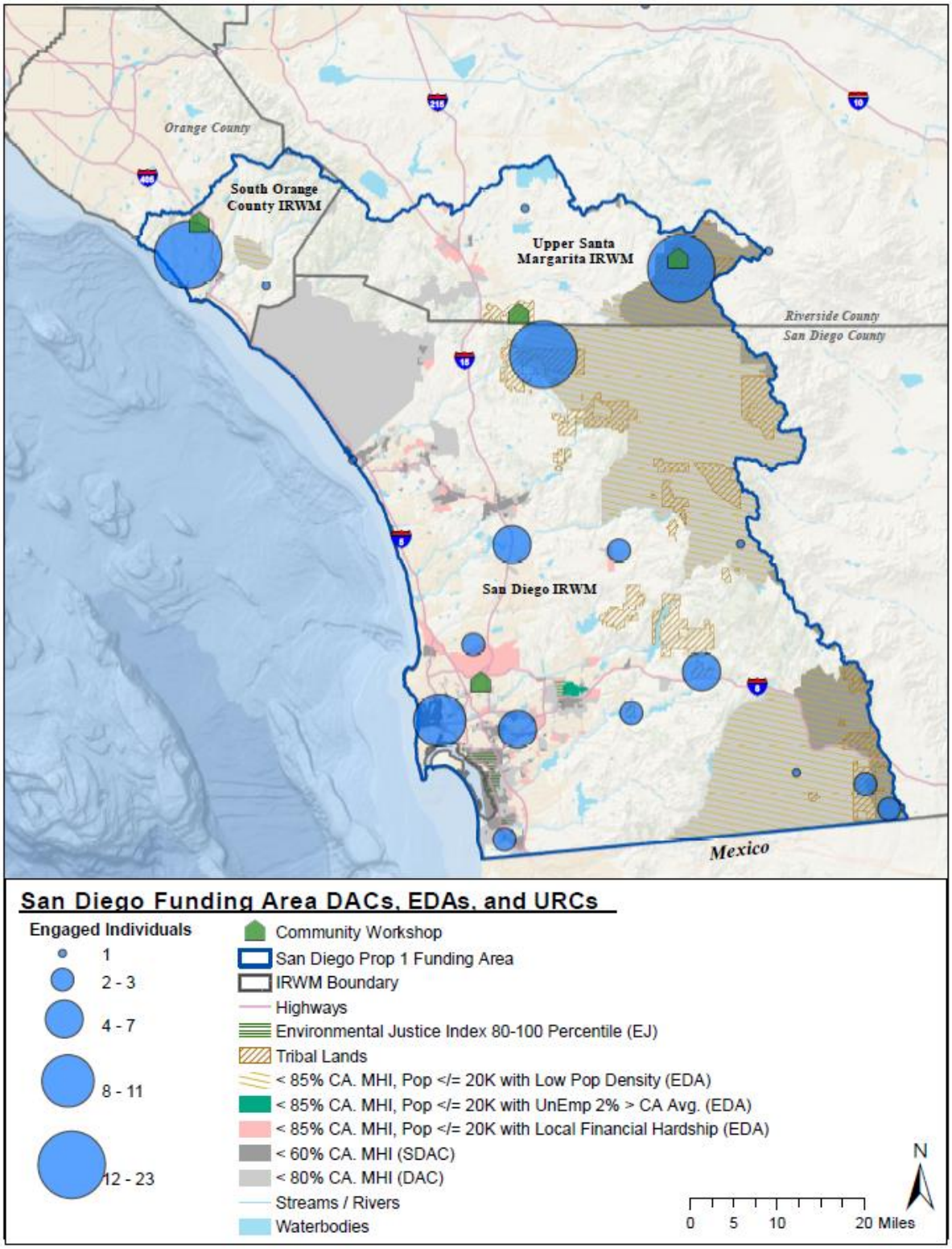


Figure 5: Distribution of Stakeholders Engaged in the 2019 Water Needs Assessment



4.1 Community Water Needs Questionnaire

The outreach strategy included developing a water needs questionnaire to help collect the data requested by DWR as part of the Water Needs Assessment. Project partners adapted the DWR data table (provided in DWR's DACI Program Request for Proposal) to a questionnaire format and added questions based on additional interest about potential regional water management concerns or needs. For instance, a question about whether respondents consider climate change of significant concern to their water resources was added to the questionnaire.

Questionnaire responses have been summarized for each IRWM region for the purpose of anonymity and can be found in Appendix B. This table is provided in DWR's DACI Program template. A copy of the distributed questionnaire can be found in Appendix C.

Community meetings distributed the Water Needs Questionnaire and included a short presentation and guided discussion.

Photo credit: Nicole Poletto, Woodard & Curran

Once the questionnaire was refined by the Tri-County FACC and its consultant and NGO team, it was converted into an online survey that was emailed to the DAC contact list described above. Hard copies of the questionnaire were also made available to stakeholders.

The questionnaire was also used to guide community meeting discussions, where 30 minutes of a 90-minute session were allotted for participants to answer the questionnaire and ask questions of IRWM representatives. In most cases, this allotted time evolved into a dialogue, where participants were more interested in a live discussion of their community concerns. Participants commonly requested the option to solicit feedback from colleagues to provide formal answers to the questionnaire. Some participants chose to answer the questionnaire after the meeting by using the online survey provided in a follow-up email.

In total, 43 questionnaires were completed and submitted, with online responses representing the majority of responses. Questionnaires were received from stakeholders in each of the three IRWM regions in the SDFA:

- 24 respondents from San Diego
- 10 respondents from the Upper Santa Margarita Watershed
- 9 respondents from South Orange County

Six of these respondents directly represented tribes, which were split evenly between the Upper Santa Margarita Watershed and San Diego IRWM regions; other community groups also represented tribal interests. Additional tribal input was collected during a community meeting held in the Upper Santa Margarita Watershed IRWM region for tribes from throughout the SDFA, although an official questionnaire was not completed.

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

- 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?
- Is drinking water accessible for the community?
- Is drinking water considered affordable for the community?
- What conditions (i.e., drought, flooding) have impacted drinking water quality and supply reliability? Are certain conditions of concern in the future?
- What conditions (i.e., drought, flooding, infrastructure failure) have impacted wastewater system operations or reliability? Are certain conditions of concern in the future?
- Who or what is most impacted by urban runoff in this community?
- Who or what is most impacted by stormwater flooding in this community?
- What conditions (i.e. drought, rain events, infrastructure failure) have resulted in stormwater or flood problems in your community? Are certain conditions of concern in the future?
- Has your community experienced any specific public health or safety issues caused by stormwater?
- 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)

A general "additional needs and challenges" question was also included for further responses.

4.2 Community Meetings

Project partners further engaged community members from the San Diego, Upper Santa Margarita Watershed, and South Orange County IRWM regions through a series of community meetings held in a central location within each community. At each of the meetings, an IRWM Program representative typically provided a presentation on the regional history and goals pertaining to DAC involvement, as well as details pertaining to the Water Needs Assessment and upcoming Proposition 1 funding opportunities. Several handouts were distributed to support and supplement the information provided at the community meetings, including the DAC definitions and SDFA DAC Map, a Proposition 1 Funding How-To Guide, and a copy of the questionnaire. A copy of the presentation and 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. Four in-person community meetings were held throughout the course of the project period. The meetings engaged a total of 61 participants representing 46 organizations involved with DAC communities.

The number of community meeting attendees from each IRWM region included:

- 28 attendees from San Diego
- 23 attendees from the Upper Santa Margarita
- 10 attendees from South Orange County
- 19 of the above attendees represented tribes

At the community meetings, one of the NGO partners led an open discussion to help understand how the IRWM program may better engage with DACs and support the community's water management

needs. Notes were taken on a flip chart to facilitate the discussion when appropriate. The following questions prompted each discussion topic:

- How can IRWM support your water management needs?
- How can IRWM better engage with your community?
- Are there challenges to your participation in IRWM?
- What are your water-related issues and concerns?
- What can we advocate for from your perspective?

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.

Meeting #1: Anza Community Meeting - August 15, 2018

The first community meeting was held at the Ramona Band Tribal Library in the Anza Community of the Upper Santa Margarita Watershed. Project partners provided information and facilitated an interactive discussion to solicit input on water-related issues and needs. Seventeen participants representing various community groups, water companies, and government representatives were present. The meeting was well attended, and the presentation was live-streamed to a local radio station by one of the participants. The Anza High County Journal was also in attendance and enthusiastic about the meeting; they shared the upcoming webinar opportunity with their Facebook followers.

The meeting in Anza brought the community together to discuss water needs, concerns, and potential projects.

Photo credit: Nicole Poletto, Woodard & Curran

The Anza High Country Journal advertised the August webinar on Facebook.

The Upper Santa Margarita Watershed IRWM region includes large portions of rural unincorporated Riverside County, where residents rely on groundwater to meet water demands. The conversation at the community workshop largely centered on interest in assistance with capital infrastructure and consolidation, especially to construct a potable water pipeline which is needed to share water resources, ensure supply reliability, and allow for construction of a nitrate treatment facility to address nitrate exceedance compliance issues as the community continues to grow.

Meeting #2: Urban San Diego Community Meeting - September 9, 2018

A second workshop took place at SDCWA, within the City of San Diego. Six participants attended, representing two

community-based organizations and two cities, all of which are in urban areas. Participants focused mostly on urban water needs and priorities, with the discussion centered on problems pertaining to aging infrastructure, declining watershed health due to stormwater runoff, and landscape rehabilitation. One community group highlighted the Tijuana River watershed as severely impacted by cross-border debris and trash flows originating in Tijuana, Mexico, as well as flooding during large storms. Participants also mentioned the need for education and outreach in local communities to educate stakeholders on water quality and runoff.

Meeting #3: Orange County North/Central & South OC IRWM Workshop - September 10, 2018

A third workshop was held for Orange County at the Laguna Hills Community Center. Ten representatives from local cities, water districts, and other community groups within the South Orange County IRWM region were present. This conversation focused on a presentation of IRWM's mapping analysis of DACs, and feedback was received on how to improve the mapping assessments which resulted in the update of the EDAs portrayed by the map. Beneficial projects were also discussed, where participants expressed an interest in recycled water projects in particular.

The Orange County Workshop brought together representatives from South Orange County and North/Central Orange County to discuss DAC outreach and mapping needs.

Photo credit: Nicole Poletto, Woodard & Curran

Meeting #4: Native American Water Master Association Meeting - October 24, 2018

A fourth workshop was held at the Native American Water Master Association Meeting (NAWMA) at the Pechanga Government Center in Temecula. Eighteen tribal members attended from ten tribes and organizations in both the San Diego and Upper Santa Margarita Watershed IRWM regions. This presentation provided a platform for tribes to express their water-related concerns and needs as well as collaborate for potential future projects. The conversation focused broadly on sustainable development, land use planning, drought, and wastewater management. Concerns were raised about a lack of water supply and poor water quality, especially groundwater quality. Strong sentiments were expressed concerning climate change and the potential impacts of drought, declining well water, fires, and water quality, as well as about water policy and its impact on tribal water rights. Some tribal representatives mentioned that community growth management would be important as population continues to grow, and backcountry traffic increases.

Mark Stadler, SDCWA, and Jennifer Hazard, RCAC, led the NAWMA meeting presentation and discussion.

Photo credit: Nicole Poletto, Woodard & Curran

4.3 Webinars

The Water Needs Assessment community outreach strategy also included testing a webinar format to reach communities that were more remote or had more limited availability for an in-person meeting. The webinar presentation was identical to the community meeting presentation and encouraged participation through open discussion or commenting in the chat box. 12 participants attended via webinar, one of which was offered jointly with the third community meeting (in South Orange County).

Project partners concluded that the webinar format made it difficult to engage with participants and solicit feedback, although four webinar participants followed up with more in-depth questionnaire responses.

Webinar #1: Urban San Diego Community Meeting - August 22, 2018

The first webinar was held to discuss the Water Needs Assessment effort and to solicit input about participants' water needs. The webinar was advertised two weeks in advance to stakeholder contacts throughout the SDFA. Nine individuals representing eight organizations attended remotely. Participants in the webinar focused on a continued need for understanding and addressing DAC community water needs, as well as an interest in cross-community collaboration for water quality management.

Webinar #2: Orange County Workshop - September 10, 2018

The South Orange County Community Workshop on September 10 was also live-streamed as a webinar and recorded to provide Orange County residents an opportunity to learn about the Water Needs Assessment remotely. One participant logged into the webinar version to participate remotely, while twenty-one other participants attended the meeting in person.

4.4 Outreach Results

Five separate presentations were held, either in person or via webinar. The consulting team and partners reached out to participants via email and answered questions via phone to encourage participation in the Water Needs Assessment. A complete breakdown of outreach activities is seen to the right.

Table 3 below illustrates the composition of respondents who were engaged in a qualitative way throughout the process, either through a community meeting or webinar or via the questionnaire. Community meetings represented the greatest number of stakeholders, although the questionnaire involved relatively close to the same amount, as well as the ability to produce a quantitative assessment of responses (due to all questionnaires including the same set of questions).

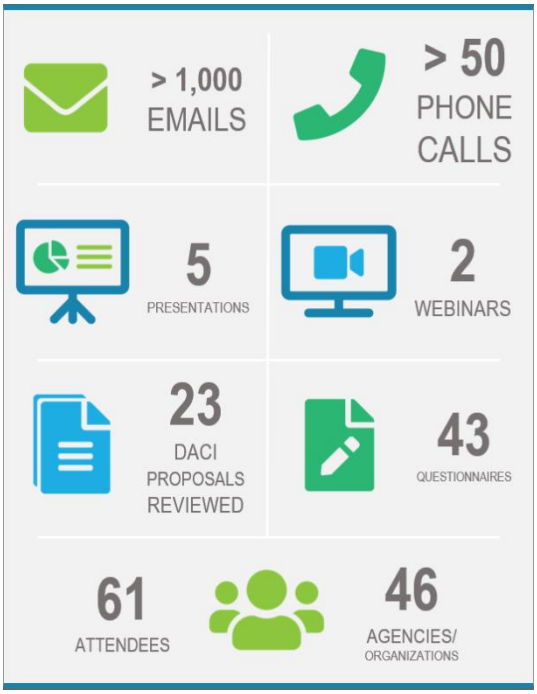
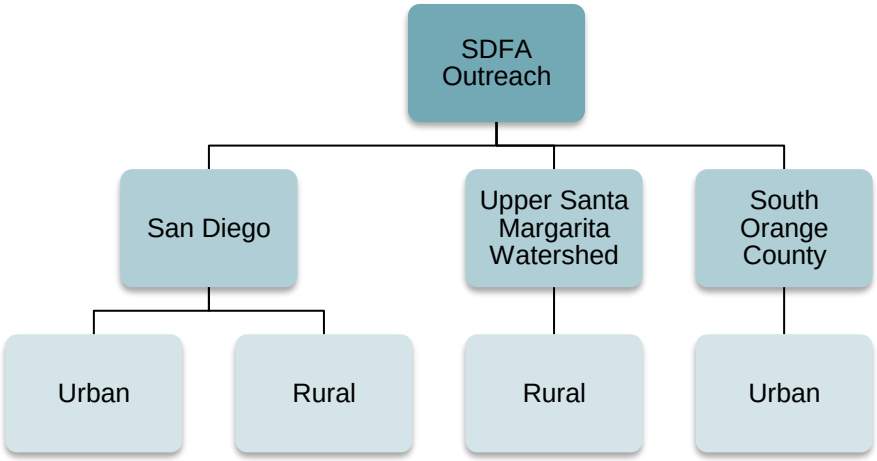


Table 3: Composition of Individuals Engaged by the Water Needs Assessment Process

Respondent	Community Workshop	Questionnaire	Webinar
Water district, system, utility, or company	11	9	5
City or County	7	13	0
Community-based organization	3	13	4
Community Member	5	3	0
Tribal Community Representative	19	5	3
Total Individuals (96)	45	43	12

Tribal communities were strongly represented at a community meeting held in Temecula, within driving distance for tribes in the Upper Santa Margarita Watershed and San Diego IRWM regions. The South Orange County meeting and webinar comprised mainly water district and utilities. Cities, especially within the San Diego IRWM region, generally engaged through the questionnaire as opposed to in-person workshop attendance.

In order to characterize the responses received, stakeholders were stratified into groups, as seen on the right. The San Diego IRWM Region is composed of both urban and rural stakeholders. All DACs in South Orange County are located within defined water agency service areas and are characterized are therefore characterized as urban. The DAC population in the Upper Santa Margarita Watershed IRWM Region is rural because they are located outside the jurisdictional boundaries of the region's water and wastewater agencies. Table 4 lists how these populations are represented in each IRWM Region.



There are approximately 4.2 million people living in the SDFA, 22% of which reside in a DAC. Of these identified DAC communities, 96% of DACs are considered urban because they are located within the service area of a water or wastewater agency. It is important to note that all households may not be served by these agencies but are still considered urban for the purpose of this Assessment. While 96% of SDFA DACs by population are considered urban, rural DAC communities occupy more than three times as much land as urban DAC communities within the Funding Area (1,300 square miles vs. 460 square miles, respectively.

As seen in Table 4, 47% of questionnaire respondents represented rural DAC communities, although they only make up 4% of the population in the SDFA.

Table 4: Survey Respondents by IRWM Region

IRWM Region	Total Population	Total DAC Population			% of DAC Population		Total Questionnaire Respondents			% Respondents	
		Total	Urban	Rural	Urban	Rural	Total	Urban	Rural	Urban	Rural
San Diego	3,253,356	876,660	849,962	26,698	97% 454 sq. miles	3% 1,157 sq. miles	24	14	10	58%	42%
Upper Santa Margarita	374,964	7,186	0	7,186	0% 0 sq. miles	100% 129 sq. miles	10	0	10	0%	100%
South Orange County	596,040	37,679	37,679	0	100% 7 sq. miles	0% 0 sq. miles	9	9	0	100%	0%
SDFA Total	4,224,360	921,525	887,641	33,884	96%	4%	43	23	20	53%	47%

5 Evaluation of Process and Engagement

The Water Needs Assessment consisted of a strategic effort aimed at identifying and reaching out to DACs that have either not been engaged with IRWM in the past or were previously unidentified. Many of these communities face capacity barriers and, in some cases, lacked access to the internet, making follow-up to initial outreach efforts difficult.

Several outreach strategies that had been successful in past DAC outreach efforts were utilized such as email, phone calls, and in-person meetings. Partnering with NGOs proved an effective way to engage with communities that already have established relationships with those organizations, such as RCAC (this method was used in the Coachella Valley Disadvantaged Communities Program, 2014). Additional strategies of webinars and questionnaires were experimented with to evaluate the success of each strategy in terms of effectively engaging DAC stakeholders and representatives. However, 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 then participate in a community meeting or complete a questionnaire. For example, some tribes did not receive permission to participate in the Water Needs Questionnaire. These respondents were not included in the number of organizations engaged in this assessment.

The questionnaire was valuable as a tool for prompting discussion at the community meetings, as well as an effective tool for collecting input across a broader geographic area for this assessment. The online version of the questionnaire reached more stakeholders than any of the other strategies and received an approximately 22% response rate to the questionnaire from organizations, a response rate that is higher than the average external survey response rate.

Community meetings were effective in soliciting strong qualitative feedback from specific individuals, as discussions tended towards specific topics of interest to the participants such as the need for stormwater runoff education or an interest in water recycling projects. 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.

Although the webinars were broadly advertised throughout the SDFA, with at least two weeks advanced notice to participants, participation remained low and it was concluded that the webinar format was not a successful way of engaging with participants.

To overcome some of these limitations and collect background context for certain issues and priorities, this Water Needs Assessment references applications to the Proposition 1 DACI Program received in early 2016. As part of the project submittal process, applicants were asked to provide a description of broad community needs to characterize the value of their proposed projects. 23 applications from throughout the SDFA were reviewed and provided a broad view of DAC community needs and water challenges throughout the various project areas, but was most illuminating in the San Diego IRWM region, which included 22 of the 23 submitted projects. This information is recorded in *Section 6: Summary of Water Management Needs and Issues from Survey Respondents*.

As identified in *Section 1.3: Water Needs Assessment*, the outcomes of this Water Needs Assessment were dependent on the responses of participants. To fully determine effective ways to address the identified issues and needs, additional funding from DWR would be necessary to better understand why these issues were reported.

6 Summary of Water Management Needs and Issues from Survey Respondents

Water management needs and issues identified though this Water Needs Assessment are presented in the following sections. Where responses from participants and source information allow, needs and issues are presented by planning region. Where identified needs and issues were generally consistent across the SDFA or where lack of response data did not allow for separation into planning region, identified needs and issues are presented more generally. As noted in *Section 1.3: Water Needs Assessment*, these responses reflect the perspectives of the participants in the community meetings, questionnaire, and DAC Involvement grant. DAC stakeholders in the SDFA are encouraged to identify other needs and issues as appropriate during planning activities and grant cycles.

6.1 Water Challenges for the San Diego Funding Area

6.1.1 Themes of DAC Water-Related Needs and Issues

Overall, the water challenges described by DACs in the SDFA are generally consistent with the known water needs across the SDFA and maintain characteristics identifiable as either urban or rural. A summary of key challenges voiced by surveyed DACs in the SDFA is provided in Table 5 and more detailed information regarding these challenges is provided in *Section 6.1.2 Key Water Challenges by IRWM Region.* Information gathered through literature is not included in Table 5. Survey responses are displayed by community in Appendix A while information gathered through literature review is indicated by italics.

In general, participants noted a reliance on groundwater, and expressed concern about potential impacts of climate change. Despite the fact that groundwater is a small percentage of overall water supply in the SDFA (<3% of supplies in South Orange County IRWM region, 26% of supplies in Upper

Santa Margarita Watershed IRWM region, and supply for only 2.4% of residents in the San Diego IRWM region), 52% of questionnaire participants identified groundwater as their community's major or only source of drinking water. The geographical representation of survey respondents does not necessarily reflect population distribution in the IRWM region, as noted in Table 4 above. Rural DACs make up 47% of the questionnaire respondents which represents 4% of the DAC population. Notably, 82% (18 out of 22) of these participants also expressed concern about climate change due to its potential ability to lower the groundwater table, affect groundwater quality (via natural processes like erosion or saltwater intrusion), and precipitate drought, which can render some wells terminally defunct. In Figure 6, respondents who noted that groundwater constituted a significant portion of water supplies are identified by a blue raindrop. A red raindrop indicates that this community identified a risk associated with groundwater, which in most cases was related to a concern about the impact climate change would have related to drought, combined with a concern about rising demand Additionally, stakeholders across the SDFA 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 operation and maintenance (O&M) funding to maintain that infrastructure once it is implemented.

Community-based organizations representing DACs also emphasized a need for outreach to and education in these communities to better understand and support water management best practices. In particular, these organizations encouraged expanding youth education, especially within tribal communities.

Tribal stakeholders in the SDFA were specifically concerned about water rights, and what is perceived as a "race to the bottom," or lowering of the groundwater table, due to recent groundwater management policies from the Sustainable Groundwater Management Act. Their most pressing water challenges included groundwater quality and quantity, in addition to a general low water supply. Tribal stakeholders also were strongly concerned about climate change and its potential impacts which would compound water-related challenges. Tribal stakeholders cited an interest in learning more about sustainable development options which will positively impact flooding, water quality, and water supply. Another pressing water challenge for tribal communities is wastewater management. One potential project discussed at the NAWMA meeting was the construction of a shared wastewater treatment plant system for local tribes to promote integrated waste management and water recycling.

Figure 6: Reliance on Groundwater and Perceived Risk of Groundwater Supply

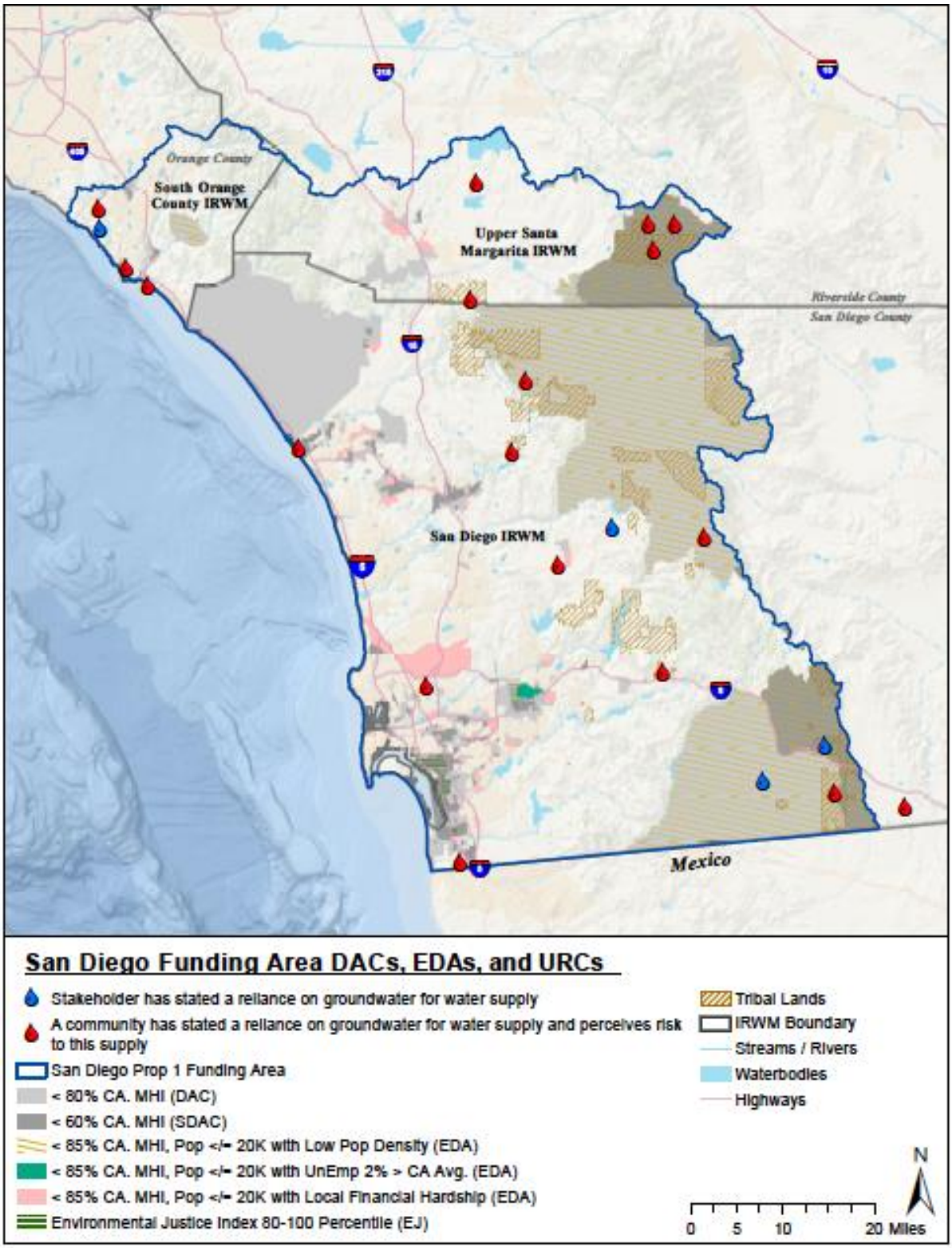


Table 5: Summary of Key Water Challenges in Urban and Rural Communities Identified by Survey Participants

Identified Water Challenge	San Diego IRWM Region		Upper Santa Margarita Watershed IRWM Region (Rural)	South Orange County IRWM Region (Urban)
	Urban	Rural		
Water Quality	• Cross-border water quality contamination causes public health and ecosystem problems • Sea level rise and storm surge beginning to flood coastal wastewater and stormwater infrastructure	• Aging infrastructure affects quality of water supply • Issues with nitrate and uranium in some communities' groundwater supply • Infrastructure failure or distrust in infrastructure leads to a reliance on bottled water for emergency drinking supply	• Lack of confidence in quality of water supply • Issues with nitrates and sulfur in specific areas in groundwater	• Beach water quality from stormwater runoff. • Need for more holistic management of water; including the capture and use of stormwater • Groundwater quality protection and remediation • Assistance needed to address municipal MS4 permit activities and compliance with water quality regulations
Water Supply	• Cost is unaffordable in some cases • Some lack of confidence about the quality of imported supply	• Expectation that drought and other climate change factors will affect localized supply • Concern that larger urban areas will tap into supply • Old reservoir tanks for drinking water causing contamination issues • Runoff pollutants affect supply in some cases • Concern for tribal groundwater rights due to recent change in water management policies	• Concern for tribal groundwater rights due to recent change in water management policies • Water litigation and quantification issues stymie commercial development • Insufficient water storage • Drought lowers groundwater levels relied upon for supply • Need O&M funding and capacity to maintain wells • Insufficient water supplies for fire suppression	• Not enough locally sourced water • Old infrastructure unable to support expansion of local water supply • Address the rising cost of water supply and imported water • Climate change conditions of drought and earthquake may impact water supply

Identified Water Challenge	San Diego IRWM Region		Upper Santa Margarita Watershed IRWM Region (Rural)	South Orange County IRWM Region (Urban)
	Urban	Rural		
Flooding	• Some issues with flooding, especially in canyons • Major flooding in streets caused by water main breaks	• Lack of infrastructure leads to flash flooding	• Erosion impacts evacuation routes during storms • Major concentrated flood events	• Beach water quality from stormwater runoff • Urban development and impermeable surfaces exacerbate runoff issues • Flooding of surface streets may affect transportation • Although uncommon, flooding may be caused by sewer system surcharge
Wastewater	• Less flows resulting in higher concentration, need for O&M • Infrastructure failure due to drought, and flooding; lack of funding for improvements	• Population growth and economic development means less land for septic systems • Tribal need for wastewater management infrastructure	• Failing septic systems • Tribal need for wastewater management infrastructure	• Increased wastewater infrastructure issues due to climate change causing sea level rise and increased storm strength

6.1.2 Key Water Challenges by IRWM Region

6.1.2.1 San Diego IRWM Region Key Challenges

Stakeholders in the San Diego IRWM region generally expressed concerns about water quality and water supply, including issues related to wastewater system failures and the need for infrastructure to ensure water supply in the face of extreme events, such as earthquakes or drought. Stakeholders also affirmed the need identified in the 2019 San Diego IRWM Plan for additional funding for capital infrastructure and O&M. A review of the 22 DACI Program grant proposals from the San Diego region also pointed toward the area's overall issues with water quality and water supply.

In the San Diego IRWM region's urban communities, concern was expressed about the public health and ecosystem implications of stormwater runoff in specific locations – notably stormwater pollution in the Tijuana River Watershed and coastal waters near the U.S.-Mexico border and downstream of homeless encampments. A few stakeholders expressed an interest in green infrastructure and community outreach that emphasizes holistic stormwater solutions to provide multiple capture and filtration benefits for communities. Although flooding was mentioned several times as a major concern, it was generally not elaborated upon, with the exception of a few comments about its impact on public safety and infrastructure in urban areas, mostly near the international border.

In some specific urban areas, there was concern about the affordability of water, as well as concern that water conservation measures were contributing to higher waste concentrations in wastewater treatment infrastructure, which is causing a need for greater funding to address associated water quality and pollution issues.

The largest concern in the San Diego IRWM region's rural communities was continued access to safe drinking water, which most respondents cited as coming from local sources of groundwater. Some communities cited the quality of the water is being impacted by specific contaminants such as uranium, nitrates and sulfur; there is apprehension about the availability of supply given threats from climate change, population growth, and potential demand from urban areas. Some rural communities stated that actual infrastructure failure or distrust in infrastructure leads to a reliance on bottled water as an emergency drinking supply. Infrastructure-related needs included the need for consolidated water systems to support growing communities, the need to maintain and repair wells, and the need to maintain and repair septic systems.

6.1.2.2 Upper Santa Margarita Watershed IRWM Region Key Challenges

Upper Santa Margarita Watershed IRWM stakeholders are all considered rural residents for the purposes of this Water Needs Assessment. Stakeholders in the Upper Santa Margarita Watershed region were most concerned with water supply and the potential future impacts of climate change on the supply. Related water policies that impact reliance on localized sources of groundwater were also of concern. Some communities in this area are experiencing rapid rates of development and expressed concern about ensuring supply for a growing population when water supplies are already at risk from drought. Stakeholders also expressed interest in water supply infrastructure that better connects communities with areas that have potential for economic development.

Due to a lack of funding for capital projects and O&M, many of these communities are struggling to meet drinking water standards because of unsafe levels of contaminants in the primary water supply. A lack of infrastructure in these areas also contributes to flash floods that in some cases affect roads and emergency evacuation routes. Fire has been a problem in this region in the past, and there was a noted distress about lack of water supply for fire suppression. Cited wastewater concerns in this

region were the need for land for septic tanks and contamination of groundwater supplies from septic tanks. Similar to rural communities in the San Diego IRWM region, 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.

A review of the single DACI Program grant proposal from the Upper Santa Margarita Watershed region reflected the concerns associated with reliance on groundwater.

6.1.2.3 South Orange County IRWM Region Key Challenges

South Orange County IRWM stakeholders largely represented water systems and water districts in urban areas as well as one urban community-based organization. The primary concern for these stakeholders was the reliance on imported water supplies, especially in light of climate change concerns, as well as some of the negative impacts of importing so much water. For instance, the long distance that water has to travel is purported to have a negative impact on local agriculture due to excess saline concentrations. Respondents noted the pressure on existing water supplies is exacerbated by an increase in development and population growth. Imported water prices continue to rise and many municipalities are looking to create a domestic water supply to keep the cost of water steady. Over 50% of respondents noted extreme events, such as drought and earthquake, can continue to create pressure on existing water supplies.

Flooding and urban runoff impacts on beach water quality was a large concern raised by half of South Orange County questionnaire respondents. Beach water quality declines during high stormwater flow.

Stakeholders representing water systems and districts noted that aging infrastructure is a major problem that affects drinking water quality and supply. Wastewater system failure is also a problem that has caused contamination to local beaches and at least one estuary. Impacts of extreme events on infrastructure, such as earthquakes or drought, were also of concern. Aging infrastructure and funding to address CIP projects was the most mentioned concern of stakeholders in this region. Funding for capital infrastructure and O&M activities were identified by stakeholders as a need, consistent with the 2018 IRWM Plan for South Orange County.

No DACI Program grant proposals were received from the South Orange County region, because the priorities of providing safe, reliable drinking water for DACs does not apply for South Orange County, as DACs in the region are served by local agencies. Local agencies implement water resource projects that benefit their larger service areas rather than only their pockets of DACs.

6.1.3 Water Quality

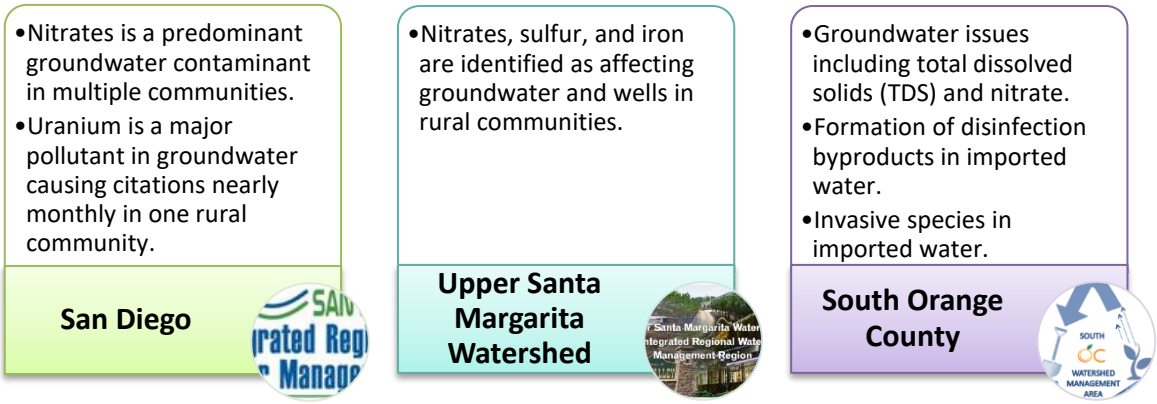
Water quality is a major issue for many DACs, both now and in the past. It was a theme of many conversations in the community meetings, and just over half of questionnaire respondents cited water quality in characterizing their community's greatest water challenges. Rural community stakeholders generally expressed concerns about the quality of their drinking water, while urban community stakeholders generally cited compliance, public health, and ecosystem concerns related to stormwater runoff. Community-based organizations expressed a concern about a lack of education about stormwater runoff and water quality more generally.

6.1.3.1 Drinking Water Quality

Responses regarding drinking water quality issues were almost entirely applicable to rural communities. 52% percent of questionnaire respondents rely on drinking water from a well and 82% of this group expressed concern about the quality of that water. Multiple communities cite nitrates as a major groundwater quality issue, noting that runoff from nearby agriculture, septic fields, and brine waste can seep into groundwater supplies. In multiple rural communities, bottled water is relied upon in some scenarios due to a lack of confidence in drinking water quality. The Rancho California Water Districts 2015 UWSMP cites constituents of concern in the Temecula Valley Groundwater basin including TDS, nitrate, VOCs, perchlorate, arsenic, fluoride, and manganese.

In urban communities, there is some concern about the quality of regional imported water supplies and groundwater contamination. The City of San Diego's 2015 UWMP cited water quality issues associated with imported water including high levels of bromide and total organic carbon in SWP supplies and high salinity levels, uranium, and perchlorate in CRA supplies. In MWDOC's 2015 UWMP, South Orange County cited concern for higher total organic carbon in imported water, requiring ozone treatment from the formation of disinfection byproducts. The invasive Quagga mussel has also caused the elimination of deliveries of CRA water into Diamond Valley Lake to keep the reservoir free of the invasive species.

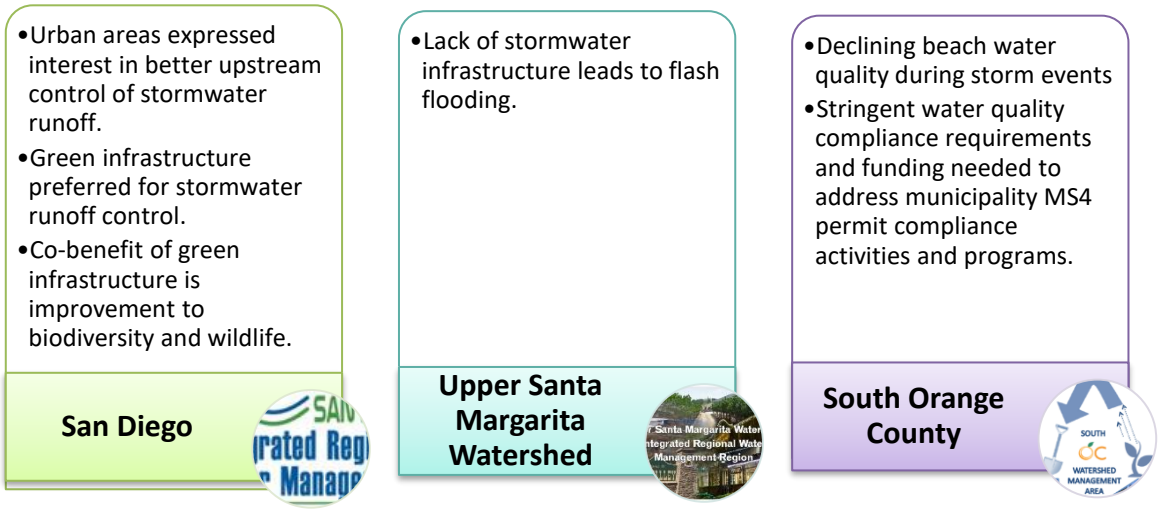
Drinking Water Quality Issues Identified by Water Needs Assessment Participants



6.1.3.2 Stormwater Runoff

Other water quality issues were attributed largely to stormwater runoff or wastewater infrastructure failure (see *Section 6.1.6: Wastewater*). A few respondents mentioned safety and water quality concerns related to homeless encampments. Bacteria is considered generally of concern throughout the SDFA's urban areas due to its implications for wildlife and public health. Rural residents cited stormwater as an issue due to the potential for flash flooding. Municipalities in urban areas of South Orange County cited concern about increasingly stringent water quality compliance requirements; limited resources for code enforcement compounds the funding need for MS4 compliance activities, as well as declined beach water quality during storm events.

Stormwater Issues Identified by Water Needs Assessment Participants



6.1.4 Water Storage/Supply

As with many areas of California, communities in the SDFA have experienced water supply issues during times of drought. As mentioned above, 52% of questionnaire respondents stated a community reliance on groundwater from a well (Figure 6). Rural residents outside the SDCWA service area in the Cahuilla Valley Groundwater Basin region in Upper Santa Margarita are entirely dependent on groundwater resources for potable water supply.

Climate Concerns

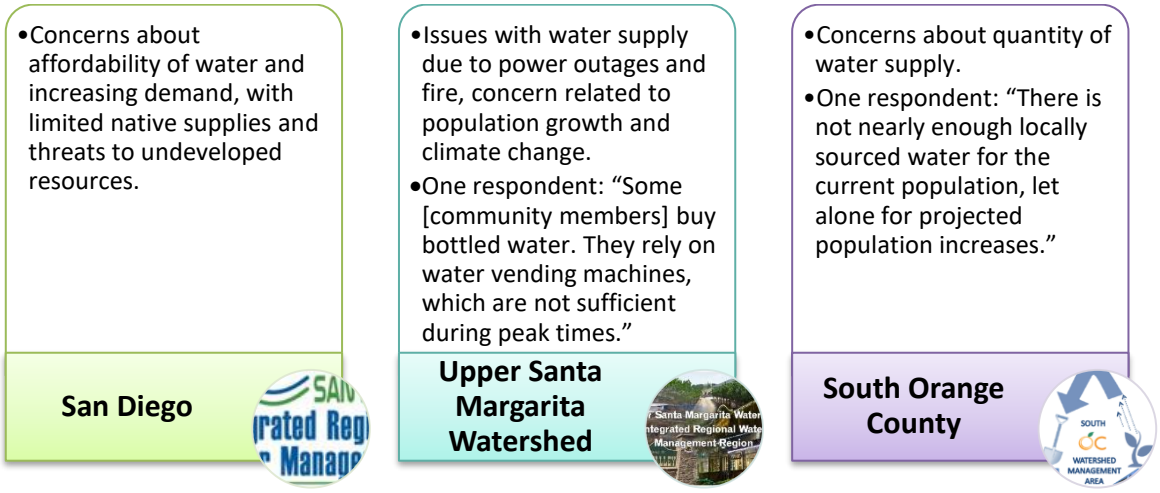
Engaged stakeholders expressed a significant concern about climate change within their communities. In response to the question "Do you consider climate change to be a threat to your community's water supply?," 93% of questionnaire respondents answered 'yes,' or 'maybe' with 66% answering 'yes.'

The top identified concern was the impact of climate change on groundwater availability, with numerous respondents anticipating a lowered groundwater table. Drought in general was cited often in reference to its potential to strain or reduce both regional and imported water supplies. Other climate related concerns expressed included: heat and fire, extreme seasonality, and shifts in weather, rainfall, and snowfall. One questionnaire respondent expressed concern about water scarcity leading to higher costs. Additionally, multiple stakeholders paired a concern for reduced water supplies with concern about increasing demand and use of water.

Significant concern about future water supply challenges associated with drought and groundwater is also discussed in the 'Climate Concerns' callout box to the right. Rural communities expressed concern regarding water supply availability issues, though water quality was identified as being a more urgent need. Participants identified a number of scenarios where water supply would be affected, including power outages from natural disaster (power is lost to individuals without generators), wells drying up, and contamination caused by nitrate, uranium, or other water quality issues. A lack of community water systems or consistent supply was stated as prohibitive to potential economic development in certain areas. In one rural community, there was strong interest in establishing a potable water system to replace old wells. Among the larger water providers, there was a stated interest in diversifying water supplies and an expressed concern about growing demands associated with population growth. A number of respondents throughout urban and rural communities expressed a general concern about storage. Some

respondents from rural communities described insufficient water storage capacity as a pressing issue, while municipal water providers expressed a less urgent interest in expanding storage opportunities.

Water Supply and Storage Issues Identified by Water Needs Assessment Participants



6.1.5 Flooding

Flooding across the SDFA was noted as a challenge by multiple participants. This is likely due to a short but intense rainy season from November through February and some extreme storms which are known to cause localized flooding that impacts roads, businesses, coastal zones, and watersheds. Some rural communities noted that they lack major flood control infrastructure, whereas cities and drinking water providers expressed a need for additional or appropriately sized detention facilities in urban watersheds. Tribal partners expressed that poor urban planning has resulted in scattered homes and flooding of infrastructure. Additionally, the landscape of reservations often has poor drainage, compounding flooding issues. A few tribes noted the poor management of highway runoff that affects reservations in eastern San Diego County. While flooding was mentioned as an issue throughout the assessment, it was not often elaborated upon. The project team concluded that this is likely because flooding issues tend to be localized and generally well understood. Community plans in urban areas in San Diego County cited the issue of major flooding in streets caused by water main breaks and urgent needs to replace 100-year old cast iron water mains.

Flooding Issues Identified by Water Needs Assessment Participants

San Diego	Upper Santa Margarita Watershed	South Orange County
•Flooding in canyons. •Roadway flooding from aging infrastructure. •Flash flooding risk in rural communities with limited infrastructure.	•Concerns regarding erosion which can impact evacuation routes during storms and concentrated flood events.	•Known issues with urban development and impermeable surfaces exacerbating runoff issues. •Beach water quality during storm evetns.

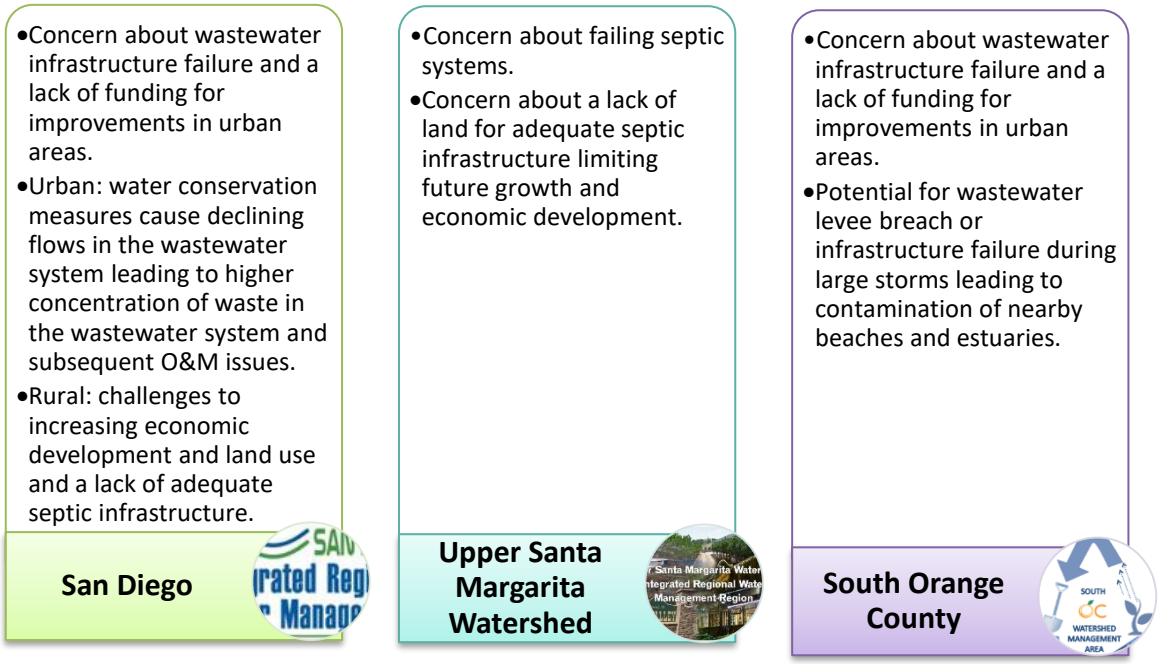
6.1.6 Wastewater

Wastewater issues are typically identified when wastewater infrastructure has an impact on either drinking water or other water uses. Infrastructure failure can represent an urgent public health threat (e.g., the failure of a major wastewater plant near a recreational coastal area), or a longer-term risk (e.g., a lack of information about leaks that may be impacting downstream surface water quality). In both the San Diego and South Orange County IRWM regions, wastewater treatment plant failure has led to the contamination of estuaries and beaches, especially after flooding. In Capistrano Beach, the local sewer plant was built next to San Juan Creek and heavy storm events have the potential to breach the levee and flood the plant or break some of the pipes that bring effluent under the creekbed. This is not an issue that has occurred in recent years. In the southernmost part of the San Diego IRWM region, trash and wastewater from a treatment plant near the border are seen as a pressing public health and safety issue, especially when wet weather drives runoff and sewage throughout the nearby canyons and to communities near the coast.

As is true in many other areas, drought conservation in this region has led to higher concentrations of waste in wastewater systems, which will require greater O&M funding due to corrosion issues and blockages. Representatives of rural areas, which are more reliant on septic systems, stated a need for more land to accommodate new systems. The lack of septic infrastructure has limited future growth in some communities.

Tribal representatives expressed frustration that their wastewater system is not recognized by the state, limiting their ability to get quality operators. Tribal participants indicated that viable land for septic systems is running low and the physical topography makes installation difficult. Population growth will require the construction of wastewater treatment plants, which will be both expensive and difficult. San Diego tribes suggested constructing a shared treatment plant as a potential IRWM Project to increase their economy of scale as wastewater treatment is both a tribal and rural community issue.

Wastewater Issues Identified by Water Needs Assessment Participants



6.2 Input on Most Pressing Needs and Concerns

In addition to answering questions about overall water needs and challenges, Water Needs Assessment participants were also asked to identify their most pressing water needs (i.e. what immediate needs IRWM may help with). Although these needs may already be identified, they have been classified as a high priority by DAC stakeholders. Common themes and key funding needs are highlighted below by IRWM region:

San Diego IRWM Region

- Funding to replace and upgrade aging water supply and wastewater infrastructure.
- Funding to diversify water supply sources and keep the cost of drinking water affordable.
- Further develop local water supplies to decrease reliance on imported water.
- Funding to improve and maintain wastewater treatment plants to deal with higher concentrations of wastewater and pollutants, especially dry weather flow diversion.
- New source wells in rural areas.
- Infrastructure that supports residential conservation or economic development.
- Funding and policies to support holistic green infrastructure and recycling projects that address flooding, water supply, and water quality issues.
- Need to address tribal groundwater rights and the perceived "race to the bottom."
- Promote sustainable development options which will positively impact flooding, water quality, and water supply issues.
- Need for a shared tribal/rural wastewater treatment plant system.

- Infrastructure improvements along the coast where stormwater pipes are vulnerable to back-ups during coastal storms.
- Improved data and technology for monitoring infrastructure leaks and failures.
- Uranium treatment plant to treat brine waste impacting the groundwater drinking water supply

Upper Santa Margarita IRWM Region

- Funding to support water supply and wastewater infrastructure for increasing development in rural and agricultural areas.
- Funding to support new source wells and to address contamination issues in existing wells.
- Need to address tribal groundwater rights and the perceived "race to the bottom.".
- Promote sustainable development options which will positively impact flooding, water quality, and water supply issues.
- Need for a shared tribal/rural wastewater treatment plant system.
- Funding and policies to preserve local groundwater sources for sustainable use, especially as communities that rely on these sources face future drought.
- Education and other opportunities to improve asset management and support consolidation in rural areas.

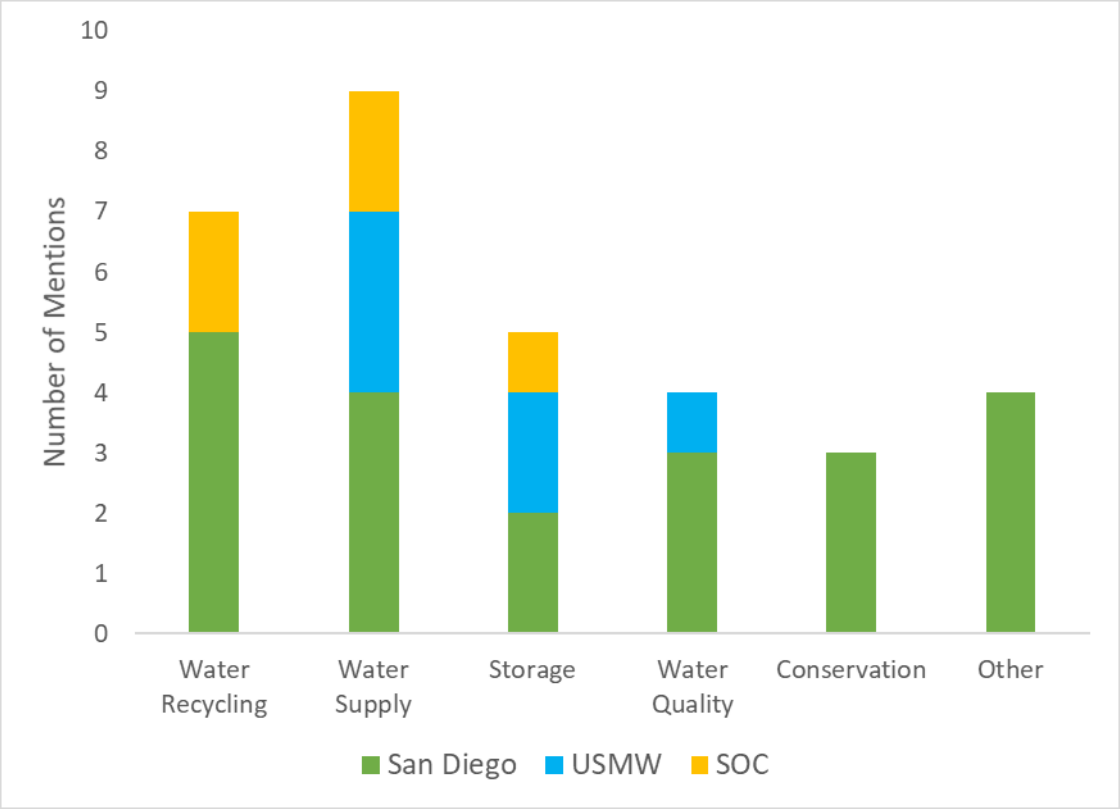
South Orange County IRWM Region

- Funding to replace and upgrade aging water supply and wastewater infrastructure along with funding for O&M.
- Funding to further develop localized water supplies to decrease reliance on imported water
- Infrastructure improvements and policies that support water recycling (such as purple pipe systems), increase residential efficiency (such as proactive greywater systems), and support a diversification of supplies.
- Funding for compliance with regulatory requirements and water quality improvements.

6.3 Beneficial Projects

During meeting discussions and in the questionnaire, participants were asked to identify particularly beneficial projects in their communities. The primary intention or benefit of the identified projects varied but almost all were capital infrastructure projects. Figure 7 shows the composition of identified projects, where each project was assigned a single primary benefit. Projects aimed at water supply were most commonly cited, along with water recycling and water storage projects, indicating that water supply reliability is a top concern for participating DACs. Other identified projects not included in this graph concerned watershed planning studies, stormwater education efforts, and, in one instance, an example of a best management practice, which was explained as "balancing agriculture with suburbanization."

Figure 7: Beneficial Projects Identified by Engaged Stakeholders by IRWM Region



7 Barriers to DAC Involvement in IRWM

One of the goals of the DACI Program is to help IRWM regions better engage with DACs. At the community meetings, participants were asked "How can IRWM better engage with your community?" and "Are there challenges to your participation in IRWM?" Input provided in these discussions helped to identify opportunities for the statewide IRWM Program and the IRWM Programs of the SDFA to expand existing DAC engagement efforts and better understand how to best communicate IRWM activities and opportunities to DAC stakeholders. Barriers to participation included from lack of representation, the cost and capacity of participation, limited capacity to pursue project funding, restrictions on funding available for planning and design, cash flow and reimbursement process challenges, and barriers to participation inherent in the bonds themselves. Barriers below are organized below as barriers that may exist for a DAC participant and barriers that may exist to the IRWM program to increase engagement.

7.1 Participant Barriers

7.1.1 Lack of Representation

Feedback from throughout this assessment, especially from the community meetings, indicated that DACs often do not have proportionate representation in broader regional forums, especially where funding is concerned. Direct representation from individual DAC stakeholders may be needed to provide input on community needs. However, this can be challenging to implement because these stakeholders often have limited capacity to attend meetings and forums. Supporting this theme, community organizations that represent DACs also expressed the continued need for direct outreach to their communities to better understand their water needs and challenges, and to promote water management best practices. Additional feedback received included the dislike for using the term DAC to refer to disadvantaged communities.

7.1.2 Limited Capacity to Pursue Project Funding

Pursuing project 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. Some stakeholders that represent DACs have not traditionally been engaged in the IRWM Program due to capacity constraints. Many of these DAC representatives have limited time to participate in IRWM activities on a voluntary basis, as their time must be focused on their organization's mission. For these stakeholders, lack of participation in the IRWM Program may make it more difficult to stay informed about upcoming funding opportunities and learn more about funding programs that could help them to craft a more competitive application.

Additional DAC participation challenges include the level of effort required for grant participation (from the grant application through the implementation phases). DACs often lack sufficient resources for preparation of materials for grant applications, especially as quantification of project benefits has risen in priority for funding agencies. Non-profits serving DACs may also struggle with grant agreement compliance during implementation (e.g., quarterly reports, quarterly invoices, accountability reports, CEQA documentation, and post-performance monitoring) due to lack of staff resources able to manage the substantial and complex grant requirements.

7.1.3 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 to the region's grant administrator. A non-profit with limited cash flow may be forced to wait for an invoice payment before continuing implementation, halting any work or public support momentum and jeopardizing their ability to complete their contracted work plan and delivering stated benefits to the community. The addition of the 50% Advanced Payment option does not fully address the problem faced by small DACs and non-profits, since many of the cash-flow challenges still occur during the second half of the project, and additional reporting and compliance measures may be required. Many stakeholders noted that even if IRWM funding covered the initial capital cost, there is a severe lack of funding for O&M, which deters community leadership implementing the project.

7.2 Institutional Barriers

7.2.1 Cost and Capacity to Reach Rural Areas

Because of the geographic scale of the three planning regions in the SDFA, the cost of and capacity for reaching out to communities across each region is also a barrier for IRWM staff and representatives that may want to use a "go to them" outreach approach. Additionally, many DACs do not use, or have limited access to, modern technology, so webinars and online information about IRWM funding and grants does not reach these audiences. Community workshops in targeted areas appear to be the best strategy for developing a water needs dialogue; however, these types of outreach activities need substantial funding and staffing investments. This additional effort by the State is encouraged.

7.2.2 Inability to Fund Planning and Design

Limited funding for project development activities, such as feasibility studies and preliminary design is another substantial barrier to participation by DACs. Although planning and engineering activities are often eligible costs under implementation rounds, DACs generally have limited cash flow to develop preliminary design materials that will justify a project's construction. Without funding for planning and design, changes to the work plan are often needed after funding for a DAC project is granted. However, these changes frequently require lengthy approval processes causing delays to the project and overruns to the budget. It is not uncommon for an amendment to take so long to be processed that another amendment is required just as the first one is approved. DAC representatives have indicated that greater flexibility is needed from DWR (or other contracting entities) for work plans for IRWM projects in order to support timely completion of projects.

7.2.3 Programmatic and Regulatory Barriers

Some of the barriers to participation in funding opportunities are inherent in the bond language or in DWR's interpretation of regulations and guidelines. Historically, DWR has generally followed a conservative approach in interpreting bond and regulatory language, such as with the Advanced Payment option. While the Advanced Payment option was intended to help address known challenges to DAC participation related to cash flow, there is no option for advanced payment of the second 50% of the funding, meaning many of the cash flow challenges still occur, only later in the project. Tribes have expressed concerns about standard contracting language and may need to find a partner willing to be the primary project sponsor or that can assist with compliance with state requirements such as California Environmental Quality Act (CEQA).

Under Proposition 1 – Round 1 Implementation Grant's Draft Proposal Solicitation Package (released October 2018), CEQA and permitting required to begin construction must be completed within six months of final award, with exceptions for DACs and tribes. Although the exception does support areas that are 100% DAC or tribal projects, it continues to be a significant barrier for projects that contain DACs but are not considered 100% DAC.

Although we have included and considered URCs as DACs within this Water Needs Assessment, they are not eligible for DAC funding under the Proposition 1 guidelines. There is some concern that URCs have been recognized as requiring special consideration only to not provide the accommodations such consideration warrants. The ability to access funding is a strong motivator for initial interest and participation in the IRWM programs, and URCs may not feel encouraged to step into a new program that puts them at the same level are larger organizations that may have more experience or capacity to compete for funding.

Other barriers to participation related to implementation of the statewide IRWM Program include the lengthy time required for grant application review and contracting that affects when project sponsors receive the funds they have been awarded, which can lead to the need for additional project amendments that then take months to be approved.

8 Opportunities to Address Barriers to Participation and DAC Needs

Based on the results and experience of conducting the Water Needs Assessment, the Tri-County FACC has identified a number of opportunities to learn more about DACs, expand their engagement with IRWM, and overcome some of 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. Identify ways for the three planning regions in the Tri-County FACC to leverage the updated list of DAC stakeholders to continue and expand ongoing DAC involvement and engagement. For example, the three RWMGs may send email invitations to IRWM meetings and activities and conduct targeted follow-up as appropriate.
2. Continue to use targeted outreach to notify communities with self-identified needs when funding is available to help them.
3. Continue to implement technical support training for the IRWM grant process.
4. 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, extending CEQA compliance timelines, and contracting changes to address tribal and DAC needs.
5. Obtain assistance to explore alternative ways to reach and support communities that have limited access to web-based resources.
6. Continue to follow up with stakeholders on challenges and pressing needs in specific communities. These conversations will be initiated through community workshops scheduled in the Spring of 2019 in support of this Water Needs Assessment. Additional funding from the State may be required to address these needs.
7. Communicate pressing needs to DWR as priorities for these communities.
8. Encourage future IRWM project applications that follow up on project ideas from community meetings. These include the shared wastewater treatment system for tribes in the San Diego IRWM Region and Anza's potable water pipeline in the Upper Santa Margarita IRWM Region.
9. Continue to actively seek DAC representation on the leading committees of each IRWM program's stakeholder group.
10. Continue to outreach to and encourage engagement by tribal communities in IRWM stakeholder groups.
11. Continue to serve as a forum for communication within the SDFA. Advertise technical trainings and support provided by NGO partners.

APPENDIX A: SUMMARY OF DAC NEEDS IDENTIFIED THROUGH LITERATURE REVIEW

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
San Diego IRWM Region																					
Alpine CPA	Unincorporated San Diego County	Yes, climate change would impact the unique biological resources in the Alpine Planning Area	MHI: $63,438, Pop: 1,175	Unknown	SDCWA water, groundwater	SDCWA Service Area partially served by Padre Dam MWD	Unknown	4	Municipal treatment plant	Not always	No	High nitrate in groundwater. SDCWA water high salinity in imported water as well as uranium and perchlorate contamination.	Sewer, Septic	Alpine Sanitation Maintenance District merged to San Diego County Sanitation District	A significant portion of the lands within the boundaries of the Sanitation District are not currently being served, although property owners have paid annexation fees and taxes. Sewer system expansion is necessary.	Often has flooding issues	None identified	Land Use and population density impacts on water quality and supply. Water quality and availability is a major concern to the community. Areas dependent on groundwater are significantly impacted by climatic and geological conditions	Padre Dam MWD Rate Structure when applicable		**1. Alpine Community Plan 2015:** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Alpine_CP.pdf **2. Alpine and Lakeside Sewer Service Areas Sewer Master Plan 2011:** https://www.sandiegocounty.gov/content/dam/sdc/dpw/SAN_DIEGO_COUNTY_SANITATION_DISTRICT/Sewer%20Master%20Plan/Alpine%20Lakeside%20Sewer%20Master%20Plan%2001%2012%2012.pdf **3. Padre Dam Municipal Water District 2015 Urban Water Management Plan** http://www.padredam.org/DocumentCenter/View/2320/PadreDamUWMP_2016Draft?bidId=
Bostonia County/Lakeside CPA	Unincorporated San Diego County	NA	MHI: $48,995, Pop: 15,379 Contains more industrial land uses than any other CPA. The district area is 95% built out and little aditional growth is predicted.	Previous Involvement	SDCA water and approximately 25% local wells.	Lakeside Water District	Unknown	20	Municipal Treatment Plant. Vine Street well field has dual media package treatment plant for iron and manganese. Riverview well field has an aeration treatment plant to remove MTBE	Yes	NA	Basin not adjudicated and no groundwater management plan. Does not exceed MCLs. The District's well fields are sensitive to drought conditions and contamination from local runoff, MTBE, nitrates, and total dissolved solids.	Sewer	Lakeside Sanitation District merged with San Diego County Sanitation district	Increased growth, system expansions, and aging infrastructure			Area is 95% developed.	Lakeside Water District Rate Structure		**1. Lakeside Community Plan: San Diego County General Plan:** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Lakeside_CP.pdf **2. Lakeside Water District 2015 UWMP:** https://lakesidewater.org/2015%20UWMP%20LWD.pdf
Central Mountain CPA	Unincorporated San Diego County	Yes, groundwater recession, decreased precipitation, and insect infestations are causing habitat stress and increases the threat of wildfire	Includes Subregional Planning Areas ● Cuyamaca (DAC) ● Descanso ● Guatay ● Pine Valley (DAC) ● Mount Laguna	Unknown	Groundwater, wells Cuyamaca Lake and the tip of El Capitan Reservoir	Small community water districts	25	10	Chlorination injection from Cuyamaca Water District (population served = 125)	Limited availability	NA	●No imported water will ever be feasible ●100% dependent on depleting groundwater resources. ● Limited hookups due to groundwater reliance	Septic (some Sewer)		● High water table. Potential for the loss of groundwater recharge resulting from the conversion of septic tanks ● 90-99 percent of leachate from leach fields will eventually reach the water table ● Rehabilitation and repair of sewer pipelines needed	● Runoff contamination Flash flooding potential	● Nitrate detected above MCL ● 2 wells inactive due to MTBE leak from obsolete underground fuel tanks. Well in Guatay exceeds MCL limits for uranium.	● 90% burned in 2003 Cedar Fire. ● Groundwater availability is the most limiting factor for development ● Uncertain groundwater resources and drought will not support future development	Flat rate or flat fee or Uniform Volumetric Rate depending on location		**1. Pine Valley Community Plan:** https://www.sandiegocounty.gov/content/dam/sdc/pds/gpupdate/PINE-VALLEY-12-14-16.pdf **2. Pine Valley Sewer Service Area Sewer Master Plan 2013** https://www.sandiegocounty.gov/content/dam/sdc/dpw/SAN_DIEGO_COUNTY_SANITATION_DISTRICT/Sewer%20Master%20Plan/!Pine%20Valley%20Sewer%20MP%2001%2031%2013.pdf **3. Cuyamaca Water District:** http://www.cuyamacawaterdistrict.org/ **4. Central Mountain Subregional Plan 2011:** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Central_MT_CP.pdf **5. Cuyama Subregion:** https://www.sandiegocounty.gov/content/sdc/pds/gpupdate/comm/cuyamaca.html

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
City of El Cajon	San Diego County	Imported supply comes from snowmelt, which is climate sensitive.	Defined as an underrepresented community by the State of California; MHI: $49,445, Pop: 99,478	Previous Involvement	SDCWA Water & treated recycled water	SDCWA Service Area served by Padre Dam MWD	0	1	Municipal Treatment Plant	Yes	Yes	SDCWA water high salinity in imported water as well as uranium and perchlorate contamination.	Septic, sewer		●Drought, flooding, and infrastructure failure have impacted system operations and relaibility. ●During drought, water reduction causes buildup in the sewer, requiring more frequent O&M. ●During flood events, sewers become inundated.	Runoff affects downstream communities water quality.		●Drought, rain events, and infrastructure failure are all detrimental for stormwater and flooding. ●Pollution to local surface waters cause public health and safety issues.	Block or tiered rate .		**1. Padre Dam Municipal Water District 2015 Urban Water Management Plan** http://www.padredam.org/DocumentCenter/View/2320/PadreDamUWMP_2016Draft?bidId=
City of Imperial Beach	San Diego County	Drought can result in a reductin of imported water supply.	Shares a border with Mexico, most southwesterly city in the U.S., MHI: $49,950, Pop: 26,324	Previous Involvement	SDCWA water	SDCWA Service Area served by City of San Diego	NA	NA	Municipal Treatment Plant (Alvarado, Miramar, and/or Lower Otay)	Yes	Yes	SDCWA water high salinity in imported water as well as uranium and perchlorate contamination.	Sewer	City of Imperial Beach	●Sea level rise presents a new challenge to modify or relocate wastewater infrastructure in low laying areas. ●Infiltration in the sewer pipes is a significant problem.	●There is localized flooding along roads and low laying properties, this results in temporary street closures. ●The Tijuana River is subject to flooding in Imperial Beach due to it being the largest drainage way for some of the watersheds in San Diego County.	●Poor water quality from the Tijuana River/Mexico affects water quality, there are regulation issues over the binational Tijuana River Watershed. ●Factors that contribute to this are runoff from construction sites, and commercial and munipal facilities.	●Drought impacts water supply and statewide water regulations. ●Higher sea levels and high tides are impacting existing storm water conveyance systems and outfalls. ●High intensity rain storms from thunderstorms have the most significant impact on localized flooding.	Water district rate structure	●Less flows in wastewater system result in higher concentration of waste, requiring additional O&M. ●Stormwater infrastructure affected by high tides as a result of large storms and sea level rise need to be relocated.	**1. Tijuana River Watershed Management Area Water Quality Improvement Plan** http://www.projectcleanwater.org/download/tijuana-river-tjr-water-quality-improvement-plan-wqip/ **2. 2015 City of San Diego Urban Water Management Plan:** https://www.sandiego.gov/sites/default/files/2015_uwmp_report.pdf **3. City of Imperial Beach General Plan and Local Coastal Plan - Updated 2015** https://www.imperialbeachca.gov/vertical/sites/%7B6283CA4C-E2BD-4DFA-A7F7-8D4ECD543E0F%7D/uploads/General_Plan_LCP_Updated_2015(1).pdf
City of National City	San Diego County	Potential impacts of climate change on imported water supply	MHI: $43,168, Pop: 58,582	Previous Involvement	SDCWA Water, surface runoff from the Sweetwater River watershed, the National City well field, and the Richard A. Reynolds desalination facility.	SDCWA Service Area served by Sweetwater Authority	Unknown	3	Municipal Treatment Plant (Perdue) using flocculation and dissolved air floatation basins. Desal facility uses RO technology.	Yes	NA	SDCWA water high salinity in imported water as well as uranium and perchlorate contamination. Surface water supplies directly affected by land use. MTBE in groundwater.	Sewer	Indvidual collection systems that connect to the City of San Diego's Metropolitan Wastewater System.			2013 MS4 permit	Drought	Sweetwater Authority Rate Structure		**1. City of National City Stormwater** http://www.nationalcityca.gov/government/engineering-public-works/engineering-division/storm-water-program **2. Sweetwater Authority 2015 UWMP:** https://www.sweetwater.org/DocumentCenter/View/84/2015-Urban-Water-Management-Plan-PDF

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
City of San Diego	San Diego	Yes. Threat to imported water supply	MHI: $71,535 Pop: 1,307,402	Previous Inolvement	SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Manages 5 groundwater basins in the City's service area	Municipal Treatment Plant. Water purification project uses two membrane treatment processes, along with UV and advanced oxidation	Yes	NA	Predominantly brackish water quality in groundwater basins along with TDS, chloride, and sodium. SDCWA water high salinity in imported water as well as uranium and perchlorate contamination.	Septic, Sewer	City of San Diego PUD	●Aging infrastructure and infrastructure failure are issues. ●In particular the aging infrastructure of this system leads to bacteria issues. ●Decreased flows to the sewer system leads to a need for more O&M. ●Potential impacts to the system from storm events and flooding. ●Infiltration issues have been an issue with flooding as well.	●Flooding, erosion, coastal pollution from contaminated urban runoff, nutrient loading. ●Pollution affects inland and coastal ecosystems.	●Stormwater/sewer augmentation regulations, poor water quality in the Tijuana River, reservoir augmentation regulations, recreational permits for reservoirs. ●Westward draining watersheds means runoff flows to beaches with high recreational activity as well as wetlands and coastal lagoons with high ecological significance.	Climate change, drought, wildfire	City of San Diego Rate Structure: Block or Tiered Rate	Need to upgrade many aging assets, including relinng sewer systems and infrastructure rehablitation.	**1. 2015 City of San Diego Urban Water Management Plan:** https://www.sandiego.gov/sites/default/files/2015_uwmp_report.pdf **2. Annual Drinking Water Quality Report 2016:** https://www.sandiego.gov/sites/default/files/2016_annual_drinking_water_quality_report.pdf
City of San Diego: Barrio Logan CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402, Incompatible land uses often found adjacent to eachother	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	Smells from Kelco Corporation sewage pumping station adjacent to Perkins Elementary School	Water Main breaks cause major flooding in streets. Install infrastructure that includes components to capture, minimize, and add/or prevent pollutants in urban runoff from reaching San Diego Bay and Las Chollas Creek.	None identified	Tijuana river pollution in San Diego bay	City of San Diego Rate Structure: Block or Tiered Rate		**1. Barrio Logan Community Plan and Local Coastal Program Draft 2018.** https://www.sandiego.gov/sites/default/files/legacy/planning/community/cpu/barriologan/pdf/barrio_logan_cpu_full_090313.pdf
City of San Diego: City Heights CPA	San Diego County	Yes	The average yearly income for a family of four is between $19,393 and $24,400, within the range of the federal poverty level of $22,050. Unemployment in City Heights is 20.5 percent, roughly twice the County of San Diego average of 11 percent. Diverse community	None	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant (Alvarado, Miramar, and/or Lower Otay)	Yes	No	Served by City of San Diego.	Sewer	City of San Diego PUD	Aging Infrastructure and potential impacts from storms	The number of pollutants sent into the watershed from runoff in this community is the top concern, especially in the Chollas Creek sub-watershed, which feeds directly into San Diego Bay.	None identified		City of San Diego Rate Structure: Block or Tiered Rate		**1. Mid-City Communities Plan:** https://www.sandiego.gov/sites/default/files/midcity.pdf **2. California Endowment: City Heights** https://www.calendow.org/places/city-heights/

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
City of San Diego: Clairemont Mesa CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	Aging Infrastructure and potential impacts from storms		None identified		City of San Diego Rate Structure: Block or Tiered Rate		**1. Clairemont Mesa Community Plan:** https://www.sandiego.gov/sites/default/files/legacy/planning/community/profiles/clairemontmesa/pdf/clairemontmesa042611c.pdf
City of San Diego: College Area CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	Aging Infrastructure and potential impacts from storms		None identified		City of San Diego Rate Structure: Block or Tiered Rate		**1. College Area Community Plan 1989:** https://www.sandiego.gov/sites/default/files/legacy//planning/community/profiles/collegearea/pdf/cacpfullversion.pdf
City of San Diego: Eastern Area CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.		City of San Diego PUD	Aging Infrastructure and potential impacts from storms		None identified		City of San Diego Rate Structure: Block or Tiered Rate		**1. Mid-City Communities Plan:** https://www.sandiego.gov/sites/default/files/midcity.pdf
City of San Diego: Encanto CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Previous Involvement	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	0	0	Chemical treatment, filtration, and ozone (Alvarado Water Treatment Plant)	Yes	NA	Served by City of San Diego.	Sewer, septic	City of San Diego PUD	Aging Infrastructure and potential impacts from storms		None identified		City of San Diego Rate Structure: Block or Tiered Rate		**1. Encanto Neighborhoods Community Plan:** https://www.sandiego.gov/sites/default/files/encanto_community_plan-revised_lu_maps-reduced_6-20-16.pdf **2. Encanto Neighborhoods Existing Conditions Report** https://www.sandiego.gov/sites/default/files/legacy/planning/community/cpu/encanto/pdf/encanto-existing_conditions_report.pdf
City of San Diego: Greater Golden Hill CPA	San Diego County	Yes	MHI: $46,000, over 45% of residents are Hispanic compared to 29% city-wide	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	Aging Infrastructure and potential impacts from storms	Flooding will occur during heavy rain and discharges into canyon areas causing erosion. Urban runoff contamination. Encourages green street design.	None identified	Air pollution	City of San Diego Rate Structure: Block or Tiered Rate	Aging Infrastructure, insufficient capacity, and outmoded design	**1. Golden Hill Community Plan** https://www.sandiego.gov/sites/default/files/golden_hill_community_plan_2016_-_reduced_file_size.pdf

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
City of San Diego: Greater North Park CPA	San Diego County	*Yes*	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	0	0	Municipal Treatment Plant	Yes	NA	Served by City of San Diego Urgent need to replace 100 year old cast iron water mains	Sewer	City of San Diego PUD	Urgent need to replace 100 year old concrete wastewater systems infrastructure	Flooding will occur during heavy rain and discharges into canyon areas causing erosion. Urban runoff contamination	None identified		City of San Diego Rate Structure: Block or Tiered Rate	Aging Infrastructure, insufficient capacity, and outmoded design	**1. North Park Community Plan** https://www.sandiego.gov/sites/default/files/north_park_community_plan_full_document.pdf
City of San Diego: Kensington - Talmadge CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	0	0	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	Aging Infrastructure and potential impacts from storms		None identified		City of San Diego Rate Structure: Block or Tiered Rate	Aging infrastructure. Main replacement program underway	**1. Mid-City Communities Plan:** https://www.sandiego.gov/sites/default/files/midcity.pdf
City of San Diego: Midway CPA	San Diego County	Yes. High water table and vulerability to sea level rise	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	0	0	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	Aging Infrastructure and potential impacts from storms	Sea level rise adaptation in stormwater facilities for flooded San Diego Bay or San Diego River outfalls	None identified	Sea level rise impacts on water and wastewater infrastructure	City of San Diego Rate Structure: Block or Tiered Rate		**1. Midway-Pacific Highway Community Plan** https://www.sandiego.gov/sites/default/files/midway_-_pacific_highway_community_plan_sept_2018_0.pdf
City of San Diego: Normal Heights CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	0	0	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	Aging Infrastructure and potential impacts from storms		None identified		City of San Diego Rate Structure: Block or Tiered Rate	Aging infrastructure. Main replacement program underway	**1. Mid-City Communities Plan:** https://www.sandiego.gov/sites/default/files/midcity.pdf
City of San Diego: Ocean Beach CPA	San Diego County	Yes, coastal community impacts from sea level rise	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	0	0	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	Aging Infrastructure and potential impacts from storms	Prioritized replacement of stormwater infrastructure. Storm water runoff contributes to bluff erosion and impacts ocean water quality	None identified	Sea level rise and erosion	City of San Diego Rate Structure: Block or Tiered Rate	Upgrade infrastructure	**1. Ocean Beach Community Plan and Local Coastal Program:** https://www.sandiego.gov/sites/default/files/ocean_beach_community_plan-final_document_reduced_0.pdf

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
City of San Diego: Old San Diego CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local	SDCWA Service Area served by City of San Diego	0	0	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	Canyon Sewer Program. Existing sewer main crosses southern prtion of MHPA within Presidio Park.	Located at the base of three watersheds. Significant storm water flows along Juan Street and flooding at the base of hills	None identified	Incorporate LID stormwater management facilities	City of San Diego Rate Structure: Block or Tiered Rate	Upgrade infrastructure	**1. Old Town San Diego Community Plan** https://www.sandiego.gov/sites/default/files/old_town_san_diego_community_plan.pdf
City of San Diego: Otay Mesa-Nestor CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	0	0	Municipal Treatment Plant	Yes	NA	Served by City of San Diego.	Sewer	City of San Diego PUD	40% of the City's mobile homes	Steep slopes and mesas	None identified	Sensitive habitat areas of salt evaporation ponds	City of San Diego Rate Structure: Block or Tiered Rate		**1. Otay Mesa-Nestor Community Plan** https://www.sandiego.gov/sites/default/files/omnfull.pdf **2. Otay Mesa- Mesa de Otay Binational Corridor Strategic Plan 2007** https://www.sandag.org/uploads/publicationid/publicationid_1257_5883.pdf
City of San Diego: San Ysidro CPA	San Diego County	Yes, susceptible to sea level rise. The Community Plan encourages water recycling, conservation, and alternative energy generation	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA	Served by C Water mains are being replaced	Sewer	City of San Diego PUD	Concrete sewer mains are being replaced	Located in Tijuana River Valley Watershed - reduction of pollutants in stormwater	None identified	Green streets recommended to address areas where stormwater infrasturcutre can improve water quality	City of San Diego Rate Structure: Block or Tiered Rate		**1. San Ysidro Community Plan and Local Coastal Program Land Use Plan** https://www.sandiego.gov/sites/default/files/final_sycpu_jan_2018-1.pdf
City of San Diego: Skyline-Paradise Hills CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Previous Involvement	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA		Sewer	City of San Diego PUD	Processed at Point Loma Treatment Plant	Encourages sustainable development and LID to reduce runoff	None identified		City of San Diego Rate Structure: Block or Tiered Rate		**1. Skyline-Paradise Hills Community Plan** https://www.sandiego.gov/sites/default/files/legacy//planning/community/profiles/skylineparadisehills/pdf/sphccfv.pdf
City of San Diego: Southeastern San Diego CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA		Sewer	City of San Diego PUD	Ongiong replacement and maintenance of wastewater pipes. Adeqaute sewer capacity needed.	Comprehensive Load Reduction Program (CLRB) prepared for the Chollas watershed and MS4 permit	Implement LID strategies to meet MS4 permit requirements		City of San Diego Rate Structure: Block or Tiered Rate		**1. Southeastern San Diego Community Plan** https://www.sandiego.gov/sites/default/files/sesd_community_plan_3.pdf

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
City of San Diego: University CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Unknown	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA		Sewer	City of San Diego PUD	Aging Infrastructure and potential impacts from storms	Stormwater management plan recommended	None identified		City of San Diego Rate Structure: Block or Tiered Rate		**1. University Community Plan** https://www.sandiego.gov/sites/default/files/university_cp_02-03-17_0.pdf
City of San Diego: Uptown CPA	San Diego County	Yes	MHI: $71,535 Pop: 1,307,402	Previous Involvement	City of San Diego: SDCWA water, capture of local runoff from rainfall, recycled water for non-potable use, and limited local groundwater	SDCWA Service Area served by City of San Diego	Unknown	Unknown	Municipal Treatment Plant	Yes	NA	Water mains are being replaced	Sewer	City of San Diego PUD	Concrete sewer mains are being replaced	Erosion in canyons. Flooding possible during storm events.	Implement LID strategies to meet MS4 permit requirements		City of San Diego Rate Structure: Block or Tiered Rate	Infrastructure updates	**1. Uptown Community Plan** https://www.sandiego.gov/sites/default/files/uptown_community_plan_full_version.pdf
Fallbrook CPA	Unincorporated San Diego County	Drought and climate change could result in reduction of imported water supply.	MHI: $56,468 Pop: 30,534	Previous Involvement	SDCWA Water only.	Fallbrook PUD and Rainbow Water District (unincorporated Fallbrook)	Unknown	1	Municipal Treatment Plant	Yes	Rising cost of water an issue for avocado farmers	SDCWA water high salinity in imported water as well as uranium and perchlorate contamination.	Sewer, Septic	Fallbrook PUD and Rainbow Water District	No current issues. The wastewater treatment plant was recently entirely upgraded	Potential flooding from the Santa Margarita River	None	Heavy agricultural area. Water supply reliability needed.	Water district rate structure		**1. Fallbrook Community Plan:** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Fallbrook_CP.pdf **2. FPUD Sewer System Management Plan** https://www.fpud.com/sewer-system-management-plan **3. FPUD Consumer Confident Report Water Quality 2018** https://www.fpud.com/consumer-confidence-report **4. FPUD 2015 UWMP** https://www.fpud.com/files/d5469aa45/CurrentUWMP.pdf **5. Rainbow Municipal Water District 2015 UWMP** https://www.rainbowmwd.com/files/3182e1d20/Rainbow+Final+UWMP+0701201
Julian CPA	Unincorporated San Diego County	NA	MHI: $66,250 Pop: 1,502	Unknown	Groundwater: dependent on wells	Small water districts: Julian Community Services District, North Peak Mutual Water Company - electrically off grid and uses diesel generators	Unknown	4	Filtration system to remove iron and mangense and inacive VOC removal treatment plant	Yes	NA	Out of date MCL testing Unknown groundwater availability of long-term drought	Sewer, Septic	San Diego Sanitation District	If septic tank failure becomes common, groundwater can be contaminated	Rugged terrain makes flood an unlikely threat. Floodplains have been identified along major creek beds but are generally less than 300 foot wide bottoms of steep canyons	DDW 2015 Citations for unpermitted well, inorganic chemical monitoring violations, nitrate/nitrite, perchlorate, radionuclide, VOC, syntheic organic chemicals, and secondary standard monitoring violations	Sensitive to "relative safety rating" of the long-term groundwater requirements of an average sing-family house. A safe lot size level is five acres can sustain 45 years or more of reserve capacity.	Rate structure when applicable		**1. Julian Community Plan** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Julian_CP.pdf **2. Water Resource Control Board Division of Drinking Water Citation No. 05-14-15C-003 (2015) to Julian Community Services District** https://www.waterboards.ca.gov/drinking_water/programs/documents/ddwem/dwp%20enforcement%20actions/San%20Diego/2015/05-14-15C-003-3700909-03.pdf

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
Mountain Empire CPA	Unincorporated San Diego County	Threat of drought	Includes Subregional Planning Areas ● Tecate ● Potrero ● Lake Morena/Campo (DAC) ● Boulevard ● Jacumba (DAC)	Some subregional planning areas have been previously involved in IRWM	Groundwater	Small community water districts including Lake Morena Views Mutual Water Company	Unknown	40	NA	Yes (Jacumba)	Yes (Jacumba) No (Campo)	Population completely reliant on groundwater. Surface runoff is meager due to drought and climate	Septic	NA	NA	Runoff may cause well contamination	Exceeds MCL for Nitrate, Uranium and total coliform	Some agriculture however, since located outside SDCWA with limited groundwater supply boundary it is not a prominent use	Block or tiered rate	Infrastructure replacement needs	**1. Mountain Empire Subregional Plan** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/MTN_Empire_CP.pdf **2. Campo/Lake Morena Community Plan** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Campo-LM-CP.pdf **3. Jacumba** https://www.sandiegocounty.gov/content/sdc/pds/gpupdate/comm/jacumba.html
North County Metro CPA	Unincorporated San Diego County	NA	Includes Subregional Planning Areas ● Twin Oaks ● Hidden Meadows	Some subregional planning areas have been previously involved in IRWM	Surface water, SDCWA Water	Vista Irrigation District, Rincon del Diablo MWD, Valledictos Water District	NA	NA	Escondido-Vista Water Treatment plant: coagulation, sedimentation, filtration through Anthracite coal and sand supported by graded rock.	NA	NA	High rates of septic tank failure	Sewer, Septic	Vista Sanitation District	Need to convert to sewer system in SDCWA boundary is especially critical in the finge areas around Escondido and Vista due to cumulative impact of residential development				Block or tiered rate		**1. North County Metropolitan Subregional Plan** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/NC_Metro_CP.pdf **2. Twin Oaks Valley** https://www.sandiegocounty.gov/content/sdc/pds/gpupdate/comm/twinoaks.html **3. Twin Oaks Valley Water Treatment Plant** https://sdcwa.org/twin-oaks-valley-water-treatment-plant
North Mountain County CPA	Unincorporated San Diego County	NA		Unknown	Groundwater	Palomar Mountain Mutual Water Company, Baily Mutual Water Company, Los Tules Mutual Water Company	Unknown	3	NA	Finite groundwater resource - no imported water	NA	Groundwater contamination from leaking underground storage tanks. Lack of imported water and irrigation facilities.	Septic	NA	Cost to extend sewer services to backcounty does not outweight low population and lack of demand	Possibility of mudslides in severe weather		Water supply availability. Companies export spring water from Palomar mountain as regulations do not apply to private extraction of spring mountain - potential for groundwater overdraft	Water district rate structure when applicable		**1. North Mountain Subregional plan:** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/N_MTN_PALOMAR_CP.pdf
Pala/Pauma CPA	Unincorporated San Diego County	Yes, susceptible to drought		Previous Involvement	Groundwater, SDCWA Water	Rancho Pauma Mutual Water Company and Yuima Municipal Water District	Unknown	Unknown	Municipal treatment plant	Yes	Yes	Declining groundwater levels	Septic	NA	Need to extend sewer services	Flash flooding potential		Drought and rising water supply pricing	Uniform volumetric rate	Infrastructure upgrades and replacement	**1. Pala/Pauma Subregional Plan** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Pala_Pauma_CP.pdf
Pendleton-DeLuz CPA	Unincorporated San Diego County	NA	90% of the plan area is comprised of the Marino Core Base Camp Pendleton and Cleveland National Forest	Previous Involvement	Groundwater	Self - Marine Corps	NA	33	Chlorine disinfection and iron and manganese filtration	NA	NA	Previous issues with coliform bacteria contamination	Sewer	Camp Pendleton		Periods of heavy rain can cause flash flooding	2017 EPA violations estimating approximately $1M needed to bring groundwater into compliance		Camp Pendleton Water rate structure		**1.2016 Annual Water Quality Report Marine Corps Base Camp Pendleton** https://www.pendleton.marines.mil/Portals/98/Docs/Environmental/CCR/2016_CONSUMER_CONFIDENCE_REPORT.pdf?ver=2017-06-23-123107-480 **2. Marine Corps Base About Facilities** https://www.pendleton.marines.mil/About/Facilities/ **3. Camp Pendleton Weather and Traffic Advisory** https://www.pendleton.marines.mil/About/Base-Information/Weather-Advisory/

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
Ramona CPA	Unincorporated San Diego County	Drought and climate change could result in reduction of imported water supply.	MHI: $68,485 Pop: 20,292	Unknown	99% reliant on SDCWA water. Treated water pumped to Mt. Woodson and West end reservoirs. SDCWA untreated water pumped to Lake Ramona for agricultural use	Located within SDCWA Service Boundary, served by Ramona Municipal Water District, Rancho Santa Teresa Mutual Water Company	16	3	Municipal treatment plant.	Yes	Yes	RMWD's three wells are unusable due to high nitrate levels. Still used privately for agriculture. SDCWA water high salinity in imported water as well as uranium and perchlorate contamination.	Sewer, Septic	Ramona Municipal Water District - 90%	Land restrictions only allow sewer service to 40% of population		High nitrate levels make groundwater source unusable in all three public wells that service the community	Growing population requires more water and new wells	Block or tiered rate	Groundwater quality treatment plant	**1. County of San Diego General Plan Update Ramona Community Plan:** https://www.sandiegocounty.gov/pds/gpupdate/docs/BOS_Aug2011/C.2_16_RAMONA_08_03_11.pdf **2. Ramona Municipal Water District 2010 UWMP:** http://www.rmwd.org/files/PDF/District%20Documents/20120131-Final_2010UWMP.pdf
Spring Valley CPA	Unincorporated San Diego County	Changes in weather patterns could significantly affect water supply planning.	Unincorporated community east of San Diego	Unknown	SDCWA Water. <1% groundwater	SDCWA Service Area served by Helix Water District and Otay Water District	Unknown	1	R.W. Chapman Water Recycling Facility	NA	NA	Otay Water District uses large capacity water tanks on hilltops and gravity feeds SDCWA water to customers. SDCWA water high salinity in imported water as well as uranium and perchlorate contamination.	Sewer/Septic – Most of Spring Valley is on the County sewer system with pockets of septic systems, mostly in the hill areas around Lamar / Austin Drive, Montemar Drive and Helix Street areas	San Diego County Sanitation District	None identified.	Flood hazards and flash flooding possibility		Many people who live on the valley rims just dump their trash and garbage over the side, especially in the Montemar Drive area. This may cause a serious health hazard in the future	Water district rate structure		**1. Spring Valley Community Plan** https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Spring_Valley_CP.pdf **2. Helix Water District UWMP** https://hwd.com/wp-content/uploads/2016/05/2015-HWD-UWMP_Adopted-1.pdf **3. Otay Water District UWMP** https://otaywater.gov/wp-content/uploads/files/Publications/OWD%202015%20UWMP%20FINAL%20w-appendices.pdf
Upper Santa Margarita Watershed IRWM Region																					
Aguanga	Riverside County	NA	MHI: $58,125 Pop: 1,128 Gateway between the back country of Riverside and San Diego Counties.	None	Groundwater	NA	Unknown	Unknown	NA	NA	NA	Limited services and utilities	NA	NA	Limited services and utilities	Potential for flash flooding		● Cannibas farms, ● Earthquake prone - Aguanga fault	NA	NA	**1. Riverside Extended Mountain Area Plan** https://planning.rctlma.org/Portals/0/genplan/content/ap2/remap.html
Anza	Riverside County	NA	MHI: $42,023 Pop: 3,014	Previous Involvement	Groundwater	Small mutual water systems	Large number of wells in the Anza area and there is little known about their condition or status	Unknown	NA	Need groundwater well	NA	High levels of nitrates and TDS	Septic	NA	Potential for septic system leaks to contaminate groundwater	Flash flooding potential	Rising nitrate levels in some wells.	● Drought ● Declining groundwater levels ● "Anza gap" - a relatively inactive segment of the San Andreas Fault can cause earthqakes	NA	Coordinated planning and data collection to assess current trends in water levels and quality	**1. Anza Area Groundwater Management Report (2011):** https://water.ca.gov/LegacyFiles/lgagrant/docs/applications/Elsinore-Murrieta-Anza%20Resource%20Conservation%20District%20(201209870014)/Att03_LGA12_EMARCD_GWMP_2of2.pdf **2. Earthquake risk elevated with detection of spontaneous tectonic tremor in Anza Gap:** https://ucrtoday.ucr.edu/49602 **3. Upper Santa Margarita Watershed IRWM Plan Update (2014):** https://www.ranchowater.com/256/2014-USMW-IRWM-Plan-Update
Lake Riverside	Riverside County	NA	2010 census 1,173 people. Located outside Cahuilla Reservation. Gated, rural community with lots for single family homes	*Unknown*	Lake Riverside, Groundwater	NA	Unknown	Unknown	NA	NA	NA	Limited services and utilities	Septic		Limited services and utilities	Issue with flooding and sediment flows into Cahuilla Creek		● Major groundwater user to recharge Lake Riverside. ● Declining groundwater levels	NA		**1. US Army Corps of Engineers:** https://www.spl.usace.army.mil/Portals/17/Users/056/92/1592/SPL-2017-00196-PJB_LakeRiverside_PN.pdf?ver=2018-02-02-100249-687 **2. Upper Santa Margarita Watershed IRWM Plan Update (2014):** https://www.ranchowater.com/256/2014-USMW-IRWM-Plan-Update

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
Temecula	Riverside County	Yes, increased frequency of severe weather patterns which may result in reductions of imported water supplies. Supplies were reduced by 15% in July 2015 due to an unprecedented 4-year drought	MHI: $87,115 Pop: 100,097	*Previous Involvement*	Groundwater from a well, Purchased water already treated, Recycled water	Rancho California Water District	Unknown	Unknown	Municipal treatment plant	Yes	NA	Groundwater largely complies with Basin Plan groundwater quality objectives for TDS while shallow wells occasionally do not meet objectives	Sewer	Rancho California Water District		Flood hazards caused by historic development in floodplains has caused tens of millions of dollars in damage, especially in Old Town Temecula along Murrieta Creek, MS4 permit compliance	There are no known water quality concerns that will significantly impact water supply reliability although constituents of concern include TDS, nitrate, VOCs, perchlorate, arsenic, fluoride, and manganese.	Drought	Water district rate structure	NA	**1. Temecula Valley Salt and Nutrient Management Plan (2014):** https://www.ranchowater.com/DocumentCenter/View/1132/Temecula-Valley-Salt-Nutritent-Management-Plan_Final-3-13-2014?bidId= **2. Rancho California Water District UWMP:** https://www.ranchowater.com/DocumentCenter/View/2023/2015-UWMP---June-2016?bidId= **3. Upper Santa Margarita Watershed IRWM Plan Update (2014):** https://www.ranchowater.com/256/2014-USMW-IRWM-Plan-Update **4. Temecula Jurisdictional Runoff Management Program:** https://temeculaca.gov/DocumentCenter/View/903/City-of-Temecula-Jurisdictional-Runoff-Management-Plan-2018JRMP-PDF?bidId=
South Orange County IRWM Region																					
Dana Point	South Orange County	Yes, the South Coast Water District states water supply reliability is threatened by future droughts, possible climate change, limited storage, uncertain imported water, lack of robust groundwater aquifer in SOC, risk of natural disasters and impacts	MHI: $90,310, Pop: 33,351, Seasonal population	Previous Involvement	Imported water from MWDOC, 20% from groundwater recovery facility and recycled water. South Coast Water District owns and operates the Capistrano Beach Desalter, treats water pumped brackish groundwater from San Juan Basin.	South Coast Water District and Moulton Niguel Water District	Unknown	4	MWDOC treatment facility in Yorba Linda. Ozone treatment process	Yes	Yes	High TDS in western portion of San Juan Valley Groundwater Basin. All 4 tested wells exceeded secondary MCL for TDS. Metropolitan's primary water sources of imported water: CRA water source contains higher TDS and the SWP contains higher levels of organic matter, lending to the formation of disinfection byproducts leading to Metro blending water and adding ozone treatment	Sewer	SOCWA	Orange County wastewater systems received a C- from the ASCE 5-year report: replacing and repairing infrastructure is needed	Beach water quality during storm events	Future regulations expected for regulating pharmaceuticals in wastewater will be a burden	Drought and population growth impacts	South Coast Water District Rate Structure		**1. San Juan Valley Groundwater Basin:** https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-B118-Basin-Descriptions/B118-Basin-Boundary-Description-2003---9_001.pdf **2. South Coast Water District Water Supply Reliability:** https://www.danapoint.org/home/showdocument?id=24313 **3. South Coast Water District 2015 UWMP:** https://www.scwd.org/civicax/filebank/blobdload.aspx?blobid=5658 **4. Salt and Nutrient Management Plan for the South Orange County Aliso Creek, San Juan Creek, and Portions of Other Basins:** https://www.socwa.com/wp-content/uploads/2016/05/SNMPReport_Final.pdf **5. SOCWA Strategic Plan 2015:** https://www.socwa.com/wp-content/uploads/2016/05/StrategicPlan2015.pdf
Laguna Hills	South Orange County	Climate change could impact water supply	MHI: $99,797, Pop: 30,344, 8.5% of 7,937 pop below poverty line	Previous Involvement	MWDOC water and recycled water	Majority Moulton Niguel Water District, also El Toro Water District	Unknown	Groundwater not part of the water supply source	MWDOC treatment facility in Yorba Linda and Baker Water Treatment Plant in Lake Forest	Yes	NA	Increasing salinity in imported water. No MCL violations recorded from MNWD	Sewer	SOCWA	Recycled water through SOCWA JPA	Largest source of water pollution is urban runoff		Drought Quagga mussel concern	Block or tiered rate		**1. City of Laguna Hills Water Quality:** https://www.ci.laguna-hills.ca.us/229/Water-Quality **2. Moulton Niguel Water District 2015 UWMP** https://www.mnwd.com/app/uploads/2015/11/16002-Attach-2-2015-UWMP-June-Final-Document-Part-1.pdf
Laguna Niguel	South Orange County	Climate change could impact water supply	MHI: $99,206, Pop: 62,979	Previous Involvement	MWDOC water and recycled water	Moulton Niguel Water District	Unknown	Groundwater not part of the water supply source	MWDOC treatment facility in Yorba Linda and Baker Water Treatment Plant in Lake Forest	Yes	NA	Increasing salinity in imported water. No MCL violations recorded from MNWD	Sewer	SOCWA	Recycled water through SOCWA JPA	Urban runoff		Quagga mussel concern	Block or tiered rate		**1. Moulton Niguel Water District 2015 UWMP** https://www.mnwd.com/app/uploads/2015/11/16002-Attach-2-2015-UWMP-June-Final-Document-Part-1.pdf

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
Laguna Woods	South Orange County	Impacts of climate change may include increased intensity and frequency of extreme weather events, sea level rise, seawater intrusion, and potential cutbacks on imported water supply	MHI: $40,837, Pop: 16,192, 10.3% of 16,406 below poverty line	Previous Involvement	MWDOC water and recycled water	El Toro Water District	Unknown	Groundwater not part of the water supply source	MWDOC treatment facility in Yorba Linda	Yes	NA	TDS and disinfection byproducts in MWDOC water requiring ozone treatment.	Sewer	SOCWA	Recycled water through SOCWA JPA	Urban runoff	NPDES Permit compliance. BMPs in place.	Drought Quagga mussel concern	El Toro Water District rate structure		**1. El Toro Water District 2015 UWMP:** https://etwd.com/wp-content/uploads/2014/12/FINAL-El-Toro-WD-UWMP-May-2016.pdf **2. City of Laguna Woods Water Quality (Stormwater)** https://www.cityoflagunawoods.org/water-quality-stormwater/
Lake Forest	South Orange County	Impacts of climate change may include increased intensity and frequency of extreme weather events, sea level rise, seawater intrusion, and potential cutbacks on imported water supply	MHI: $96,963, Pop: 77,264, 7.4% of 192,455 pop below poverty line	Previous Involvement	MWDOC water and recycled water. IRWD 27% MWDOC water as well as recycled water, untreated imported water, surface water, and non-potable groundwater	El Toro Water District and Irvine Ranch Water District	Unknown	Unknown	MWDOC treatment facility in Yorba Linda	Yes	NA	TDS and disinfection byproducts in MWDOC water requiring ozone treatment. No water quality supply restraints from IRWD.	Sewer	SOCWA	Recycled water through SOCWA JPA	Urban runoff. Currently no stormwater recovery ststems in place.	NPDES Permit compliance. BMPs in place.	Drought Quagga mussel concern	El Toro Water District rate structure or Irvine Ranch Water District rate structure, when applicable		**1. El Toro Water District 2015 UWMP:** https://etwd.com/wp-content/uploads/2014/12/FINAL-El-Toro-WD-UWMP-May-2016.pdf **2. Irvine Ranch Water District 2015 UWMP:** https://www.irwd.com/images/pdf/doing-business/environmental-documents/UWMP/IRWD_UWMP_2015_rev_01-03-17_FINAL.pdf
Mission Viejo	South Orange County	Impacts of climate change may include increased intensity and frequency of extreme weather events, sea level rise, seawater intrusion, and potential cutbacks on imported water supply	MHI: $107,988 Pop: 93,305	Previous Involvement	MWDOC water, recycled water, urban runoff, purchased groundwater.	El Toro Water District, Moulton Niguel Water District, Santa Margarita Water District	Unknown	Unknown	MWDOC treatment facility in Yorba Linda and Baker Water Treatment Plant in Lake Forest	Yes	NA	Increasing salinity in imported water. No MCL violations recorded from MNWD. TDS and disinfection byproducts in MWDOC water requiring ozone treatment.	Sewer	SOCWA	Recycled water through SOCWA JPA	Urban runoff	NPDES Permit compliance. Stormwater Program Local Implementation Plan in place	Drought	Block or tiered rate		**1. City of Mission Viejo Pollution Prevention** https://cityofmissionviejo.org/departments/public-works/environmental-programs/pollution-prevention **2. Stormwater Program Local Implementation Plan** https://cityofmissionviejo.org/sites/default/files/lip-mv-01-14-2019.pdf **3. Mission Viejo Water Quality Ordinance 10-285** https://cityofmissionviejo.org/sites/default/files/Documents/water-quality-ordinance-10-285.pdf 4**. Moulton Niguel Water District 2015 UWMP** https://www.mnwd.com/app/uploads/2015/11/16002-Attach-2-2015-UWMP-June-Final-Document-Part-1.pdf **5. Santa Margarita Water District 2015 UWMP:** https://www.smwd.com/DocumentCenter/View/1823/2015-Urban-Water-Management-Plan
Rancho Santa Margarita	South Orange County	Impact precipitation patterns and water supply.	MHI: $106,939 Pop: 47,853	Previous Involvement	MWDOC water, recycled water, urban runoff, purchased groundwater.	Santa Margarita Water District	Unknown	Unknown	MWDOC treatment facility in Yorba Linda and Baker Water Treatment Plant in Lake Forest	Yes	NA	Constituents of concern within the San Juan Basin include TDS, nitrate nitrogen, manganese, and iron. Increasing salinity in imported water.	Sewer	SOCWA	Recycled water through SOCWA JPA	Urban runoff utilized as a supply source	NPDES Permit compliance. Stormwater Program Local Implementation Plan in place	Water delivery system vulnerable to damage from earthquakes and other disasters	Santa Margarita Water District rate structure		**1. Santa Margarita Water District 2015 UWMP:** https://www.smwd.com/DocumentCenter/View/1823/2015-Urban-Water-Management-Plan **2. Rancho Santa Margarita Stormwater Program:** https://www.cityofrsm.org/370/Stormwater-Program

San Diego Funding Area
IRWM Water Needs Assessment
DAC Needs Based on Literature Review

City or Community	Community Characteristics				Drinking Water								Wastewater			Stormwater	Other		System Financing		Sources
	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Water Service Agency	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	Identify any drinking water system issues	Type of system	Sanitation District	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)"	
San Clemente	South Orange County	Impact precipitation patterns and water supply.	MHI: $101,843 Pop: 63,522	Previous Involvement	MWDOC water, groundwater extracted by the City of San Clemente, and recycled water	City of San Clemente. Small northern portion of the City is serviced by South Coast Water District and the inland community of Talega is serviced by Santa Margarita Water District	Unknown	2 operating wells in nn-adjudicated San Clemente Sub-Basin	MWDOC treatment facility in Yorba Linda	Yes	NA	Increasing salinity in imported water and salinity issues in groundwater due to seawater intrusion.	Sewer	SOCWA	Recycled water through SOCWA JPA and the City of San Clemente	City's Stormwater Runoff Control Ordinance	NPDES Permit compliance. Stormwater Program Local Implementation Plan in place	Quagga mussel concern	City of San Clemente rate structure		**1. City of San Clemente 2015 UWMP:** http://www.san-clemente.org/home/showdocument?id=28734
San Juan Capistrano	South Orange County	Yes, the South Coast Water District states water supply reliability is threatened by future droughts, possible climate change, limited storage, uncertain imported water, lack of robust groundwater aquifer in SOC, risk of natural disasters and impacts	MHI: $81,730 Pop: 34,593	Previous Involvement	Imported water from MWDOC, 20% from groundwater recovery facility and recycled water. South Coast Water District owns and operates the Capistrano Beach Desalter, treats water pumped brackish groundwater from San Juan Basin.	Moulton Niguel Water District, partially served by South Coast Water District	Unknown	4	MWDOC treatment facility in Yorba Linda. Ozone treatment process	Yes	NA	High TDS in western portion of San Juan Valley Groundwater Basin. All 4 tested wells exceeded secondary MCL for TDS. Increasing salinity in groundwater basin	Sewer	SOCWA	Recycled water through SOCWA JPA	Urban runoff	NPDES Permit compliance. BMPs in place.		Moulton Niguel Water District rate structure or South Coast Water District rate structure, when applicable		**1. South Coast Water District 2015 UWMP:** https://www.scwd.org/civicax/filebank/blobdload.aspx?blobid=5658 **2. Moulton Niguel Water District 2015 UWMP** https://www.mnwd.com/app/uploads/2015/11/16002-Attach-2-2015-UWMP-June-Final-Document-Part-1.pdf **3. San Juan Capistrano Water Quality:** http://sanjuancapistrano.org/Departments/Public-Works/NPDES

APPENDIX B: SUMMARY OF QUESTIONNAIRE RESPONSES

This page has been left blank.

San Diego Funding Area
IRWM Water Needs Assessment
Summary of Water Challenges Identified by Survey Participants
March 2019

Community	Questionnaire Respondents	Community Characteristics: County	Community Characteristics: Is climate change considered a threat to the community's water supply?	Community Characteristics: "Describe community characteristics (i.e. MHI, population, or other DAC indicators)"	Community Characteristics: Describe involvement with local IRWM Governance (Involvement described as Previous Involvement, None, or Unknown)	Drinking Water: Source(s) of water	Drinking Water: Estimate number of private wells	Drinking Water: Estimate number of public wells	Drinking Water: Water supply treatment (i.e. carbon, RO, etc)	Drinking Water: Accessible for community (y/n)	Drinking Water: Affordable for community (y/n)	Drinking Water: Identify any drinking water system issues	Wastewater: Type of system	Wastewater: Describe any insufficient wastewater system issues	Stormwater: Identify stormwater/ urban water runoff/ flood management issues	Other: Identify drinking water, wastewater, or stormwater regulatory/ compliance issues	Other: Identify other conditions/ issues (drought, etc)	System Financing: "Identify the rate structure (i.e. block, tiered)"	System Financing: "Describe system financing needs (i.e. operation and maintenance costs)"
San Diego IRWM Region																				
Urban	● Center for Employment Opportunities ● Casa Familiar ● City of El Cajon ● City of Escondido ● City of Imperial Beach ● City of La Mesa ● City of Oceanside Water Utilities ● City of San Diego ● City of San Diego: City Heights ● Escondido Creek Conservancy ● San Diego Coastkeeper ● San Diego Housing Commission ● South Bay Area (Alter Terra)	San Diego	Yes (72%) ● Less rainfall ● Concerned about drought, flooding, and infrastructure failures ● Limit water availability and increase cost ● Water supply sources Maybe (14%) ● Drought and less rainfall could affect the allotment of imported water supplies. ● Concerned about drought, flooding, and infrastructure failures ● Limit water availability and increase cost	● This community is the most ethnically and racially diverse community in the City of San Diego. It is home to a large number of immigrants and refugees, with over 30 languages spoken in this community. ● Defined as an underrepresented community ● Shares a border with Mexico, most southwesterly city in the U.S., ● The percentage of foreign-born persons is 26.5% or more than double the national average of 13.2% ● Migrants, single mothers, below $20k per year income, 50% renters, 25% of community members living in multi-family dwellings	● Previous Involvement (72%) ● None (14%) ● Blank (14%)	● SDCWA Water ● Local supply of surface water and recycled water ● Groundwater		11 in one community	Municipal Treatment Plants including Alvarado, Miramar, Lower Otay, Escondido-Vista, Levy, and/or Olivenhain	● Yes (72%) ● Blank (28%)	● Yes (31%) ● No (14%) ● Blank (55%)	Lack of confidence in drinking water means people buy bottled water.	● Sewer (100%) ● Septic (72%)	● Flooding, and infrastructure failure have impacted system operations and relaibility (x2) ● During drought, water reduction causes buildup in the sewer, requiring more frequent O&M. (x4) ● Aging infrastructure (x4) ● Treatment costs are affecting customers ● Sea level rise presents a new challenge to modify or relocate wastewater infrastructure in low laying areas. ● There is some concern for future recyled water production and indirect potable reuse due to increased treatment costs to address higher TDS source water. ●High cost to maintain sewer system.	● Rain events cause flooding issues, runoff eventually reaches San Diego Bay. Runoff affects Forester Creek and Broadway Channel areas, as well as San Diego River. ● Wildlife and fisheries are impacted by pollution, including heat associated with a flood control channel that reduces biodiversity and overall ecological health of tthe watershed. ● Storm drains are undersized and haven't kept up with population growth. ● Localized flooding along roads and low laying properties results in temporary street closures. ● Flooding/Runoff impacts residents living near conveyance system and in canyons ● Flooding, erosion, coastal pollution from contaminated urban runoff, nutrient loading ● Infrastructure failure leads to flooding and watershed pollution in the form of fecal coliform and other pollutants.	● Poor water quality from the Tijuana River/Mexico affects water quality, there are regulation issues over the binational Tijuana River Watershed. ● Homless population leads to watershed issues with trash ● Complaince undertainties with bateria TMDLs ● Stormwater/sewer augmentation regulations, reservoir augmentation regulations, and recreational permits for reservoirs. ● Westward draining watersheds means runoff flows to beaches with high recreational activity as well as wetlands and coastal lagoons with high ecological significance.	● Drought impacts water supply (x4) ● Rain events, and infrastructure failure are all detrimental for stormwater and flooding. ● Homeless encampments and the impacts of trash and human excrement to stormwater cause public health and safety issues. ● Drought affects water supply, pollution impacts wildlife and biodiversity ● Higher sea levels and high tides are impacting existing storm water conveyance systems and outfalls. ● High intensity rain storms from thunderstorms have the most significant impact on localized flooding. ● El Nino storms require more appropriately sized runoff detention facilities in urban stream watersheds. ● Climate change, drought, wildfires, urbanization, eutrophication, erosion, invasive species introduction.	Uniform volumetric rate, where applicable Block or tiered rate, when applicable	● Need funding for dry weather flow diversion and for wastewater infrastructure improvements. City's current rate structure does not support needed infrastructure. ● Want more holistic infrastructure; need to recreate a large concrete stormwater channel and storm drain system so that it can provide co-benefits (ie recreational opportunities, cooling in the city, and habitat for wildlife.) ● Need to educate public on pollution prevention. ● Want to keep cost of water affordable for ratepayers - funding is always needed for capital infrastructure. ● Less flows in wastewater system result in higher concentration of waste, requiring additional O&M. ● Stormwater infrastructure affected by high tides as a result of large storms and sea level rise need to be relocated. ● Flood infrastructure ● Upgrading aging wastewater ● Need to upgrade many aging assets, need to prepare for changed climate and altered reliability of water supplies. system ● Need upgraded meter system and overall improvements to infrastructure.
Rural	● Campo Band of Mission Indians ● Jacumba CSD ● Lake Morena Views Mutual Water Company ● North Peak Mutual Water Company ● Rancho Santa Teresa Mutual Water Company ● Rural Community Assistance Corporation ● San Pasqual Band of Mission Indians ● Southern California Tribal Utilities ● Western Water Conservation ● Yuima Municipal Water District		Yes (40%) ● Drought (x2) ● Need to recharge groundwater basins and declining groundwater levels (x2) ●Fire ● Water supply (x2) Maybe (50%) ● This area is desertous, a lack of rain means no recharge of the groundwater supply.	● Productive agricultural area, anticipating growth and economic viabilityfamily dwellings. ● Growing population ● Tribe with growing population	● Previous Involvement (70%) ● None (20%) ● Blank (10%)	● Groundwater ● Purchased water already treated	~206 from responde nts	~124 from responden ts	Water treatment plant when applicable	● Yes (80%) ● Blank (20%)	● Yes (50%) ● Blank (30%) ● No (20%)	● Drought has caused nitrate levels to escalate as groundwater levels decline ● Systems may be contaminated in certain instances due to broken lines and contaminated water entering the systems ● Uranium and nitrates (x2) contaminants ● Limited or no options for brine disposal ● Need funding for new uranium ion exchange plant ● Long-term concern about the increasing use of water and new wells being drilled that will need O&M. ● Nitrates from septic field ● Low public confidence in water quality ● Water system is aging and expensive to maintain. There is no full- time certified water operator due to basic expense issues exceeding system income.	Septic	● Sewering will be needed if agricultural use areas are converted to higher density domestic usage. ● Running out of suitable land for septic sytems (x2), area is higher density as the population increases, lots of clay and rock that makes this difficult. ● Scada systems are driving up O&M costs so it cannot run as designed.	● Intensive rain events have been and continue to be the cause of "flashy" flood problems in the area. ● Runoff from the main street drains just ten feet from the main source well, causing contamination. ● Roads are sometimes flooded. ● Erosion is a cause of concern every rainy season because it washes out one of two evacuation routes for the reservation.	● High TDS, bacteriological issues in some small private systems due to inadequate facilities such as uncovered reservoirs. ● Difficulty implementing the Sustainable Groundwater Management Act. ● Issues with uranium in drinking water and obtaining a permit for the existing treatment plant to remove uranium ● Out of compliance for uranium and nitrates in varying degrees from all three public wells that service the community. Coliform tests (infrequently) return positive for nonpotable water. ● SGMA has launched a "race to the bottom' that disproportionately affects tribes. ● Does not want to consolidate but needs a regional water district.	● Drought ● Anticipated difficulty in balancing continued economic viaiblity in light of rising water supply pricing. ● Drought affects water reliability and supply. Concern for increasing costs and future development prompting a need for more water. ● Growing population means increasing use of water and new wells being drilled (x2) ● Irrigation is needed for landscaping. ● Earthquakes impact surface and groundwater hydrology. ● Drought and fires require conservation efforts. ● Certification issues of troba; operators not recognized by the state. ● Poor nearby transportation planning by the state, where a nearby freeway causes runoff issues to local ecosystems. ● Need to protect tribal water rights.	Uniform volumetric rate, where applicable Block or tiered rate, when applicable Flat rate or flat fee, when applicable	● Need infrastructure upgrades, replacement, and up-sizing to accomdate future needs ● Need to replace approximately 3,000 ft of asbestos croncrete pipe on East side of town ● Rates charged do not support the O&M needs of the drinking water system. ● Reservoir tanks are aging and causing issues. ● Need a permit so treatment plant can remove uranium in drinking water. ● Need to purchase, install, and operate a urianium ion exchange plant ● Need funding to support Water Master to address current and future O&M needs (x2) of drinking water system; including lab analysis, maintenance, and parts. ● Need capital infrastructure funding. Need a water treatment plant and to dig up more groundwater wells ● Need assistance with determining rate structures. ● Need to add cultural use of water to broader plans. ● Need to balance community growth management with sustainable development.

San Diego Funding Area
IRWM Water Needs Assessment
Summary of Water Challenges Identified by Survey Participants
March 2019

		Community Characteristics				Drinking Water							Wastewater		Stormwater	Other		System Financing	
Community	Questionnaire Respondents	County	Is climate change considered a threat to the community's water supply?	"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)	Source(s) of water	Estimate number of private wells	Estimate number of public wells	Water supply treatment (i.e. carbon, RO, etc)	Accessible for community (y/n)	Affordable for community (y/n)	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)"
Upper Santa Margarita Watershed IRWM Region																			
Rural	●Anza Community Hall System #3301797 Transient Water System ● Anza Business Owner, Developer, Member of AQWA and AACWR ● Anza Community Member ● Anza Mutual Water Company ● Anza Pines Mobile Home Park #3301018 ● County of Riverside ● Country Corners Transient Water System (Anza) ● Pechanga Band of Luiseño IndiansTribal Government ● Ramona Band of Cahuilla ● South Coast Water District	Riverside County	Yes (70%) ● Reudction in precipitation (x3) has resulted in lowering of groundwater table (x2) ● Extreme seasonality drives need for more sustainable resources ● Changing weather and rain water ● Prolonged drought ● Increased heat events Maybe (10%) ● Weather, rainfall, and snowfall changes ● Drought may affect water supply No (20%) ● Needs to be monitored	● Seasonal population ● Large acreage rural town ● Tribes, 20-25% living in multi-family dwellings ● Reservation developed entirely off-grid	● Previous Involvement (40%) ● None (60%)	● Groundwater ● Imported water requiring treatment in the County	Many	28	Municipal treatment plant for County imported water	● Yes (60%) ● Don't know (10%) ● No (10%) ● If a well is drilled (10%) Wells are the water source. Some stakeholders drink and don't test the water, other buy bottled water or rely upon water vending machines which are not sufficient during peak times.	● Yes (70%) ● Blank (10%) ● No (10%) ● If a well is drilled (10%)	● Community water system is needed and could support economic development and fire suppression but there are difficulties with water litication (adjudication/quantification) ● Drinking water has high levels of nitrates, iron, sulfur, and radium. ● Want leak detection program to reduce well demand ● Nitrates from septic fields ● Nitrates, radionuclindes, and iron issues are exacerbated by general lack of homeowner testing or knowledge. ● Low public confidence in water quality	● Septic (100%)	● Overuse, septic systems have not been properly maintained ● Aging infrastructure ● Increase of homes on the reservation leads to less land available for septic tanks. ● Not a lot of viable land for septic systems	● Dirt roads and schools affected by flooding ● Unknown impacts of Cannabis runoff ● Infrastructure failure due to flooding, damage to raods and river crossings, washing out of roadways (x2) ● Runoff affects downstream communities on well systems ● Heavy rains from large storms flood downtown area. ● Flash flooding potential	● Rising nitrate levels in some wells ● Pending alternative TMDL for nutrient ● Compliance issues with SDWA, CWA, and EPA Stormwater Runoff Programs.	● Drought impacts water supply (x3) ● Increased consumption ● Lowering water table	Flat rate or flee where applicable	● Need public water (specifically formation of a regional water district and extension of conveyance systems) for commercial development to serve basic community needs ● Need funding for storage, permits, easements, legal fees, construction, and small wells. ● Need water catchment for groundwater recharge ● Need source of emergency water supply ● Continued need for funding of basin research ● Some communities lack any major flood control infrastructure. ● Need funding for water storage and other large capital expenditures. ● Need funding for regular maintenance of wastewater system. ● Need to replace aging infrastructure (x2) ● Need for planning to diversify imported water sources (x2) ● Funding needed for both capital and operations
South Orange County IRWM Region																			
Urban	● Capistrano Beach ● City of Dana Point ● City of Laguna Beach ● City of Laguna Hills ● City of Laguna Niguel ● Laguna Beach County Water District ● Moulton Niguel Water District ● Pacific Marine Mammal Center ● South Coast Water District	South Orange County	Yes (89%) ● Less winter snow in the Sierra, so less snowmelt. Instead, more winter rain is runoff instead of being stored. (x2) ● Water supply reliability (x2) ● Community relies on imported water and there is competition for these resources (x2). This can make the supplies less available and/or more costly. ● Repetitive drought conditions ● Need to enhance local supplies Maybe (11%)	● Seasonal population, vacation town ● During summer months, population of day trip visitors and vacationers goes in the millions. ● Pacific Marine Mammal Center education center for DAC communities	● Previous Involvement (89%) ● None (11%)	● MWD Water (imported) ● Local supply of surface water ● Recycled water ● Groundwater Recovery Facility ● Groundwater from a well	None identified	1 high capacity public well in South Coast Water District	Municipial Treatment Plant	Yes (100%)	● Yes (78%) ● Blank (22%)	● Pressure on water supplies expected to worsen ● Imported water need to travel a long distance making everything in its path very salty (negative impact on agriculture) ● Historic drought conditions have been a concern for supply ● Aging infrastructure ● High TDS in local groundwater	● Sewer (100%) ● Septic (11%)	● Heavy storm events may cause damage to sewage plant and contaminate nearby estuary and ocean with sewage. ● During drought, water reduction causes buildup in the sewer, requiring more frequent O&M. ● High I and I in SOC	● First flush of the season consistently washes high levels of pollutants into recreational beaches. ● Beach water quality is an issue due to runoff (x3) ● Large storms can affect creeks and bank erosion ● Flooding has impacted sewer system. ● Heavy rains from large storms flood downtown area. ● Significant past rain events have caused flooding. This remains a concern in the future.	● Outdated regulations	● Drought impacts water supply (x3) ● Earthquake would disrupt supply for unknown amounts of time. (x2) ● Threat of no potable water during extended catastrophic emergencies - conservationa nd existing local supplies will not meet needs ● 5 faults between MWD treatment plant and South Coast Water District service area ● Sea level rise	Water Agency Rate Structure: Block or tiered rate	● Need to better understand recycled water use effects on urban runoff quality. Ned more runoff monitoring and treatment. ● Need to replace aging infrastructure (x2) ● Need for planning to diversify imported water sources (x2) ● Funding needed for both capital and operations

APPENDIX C: QUESTIONNAIRE

Water Needs Assessment Questionnaire 2018

San Diego 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. Any information you can provide related to your water needs and systems is helpful.

If you need any assistance while completing the form, or would prefer to speak to a program representative over the phone, please contact your region representative below.

- *San Diego: Mark Stadler (mstadler@sdcwa.org)*
- *South Orange County: Jenna Voss (jenna.voss@ocpw.ocgov.com)*
- *Upper Santa Margarita: Justin Haessly (haesslyj@ranchowater.com)*

What is the name of your community or, if you are a water/wastewater organization, the name of your system?

_____

County: _____

Median Household Income of Community Population (if known): _____

Is your community's population generally stable (year-round) or does it fluctuate (seasonal)?

- ☐ Stable
- ☐ Seasonal

Approximate percentage of community members who are renters (versus home owners):

_____%

Approximate percentage of community members who live in multi-family dwellings: _____%

Have you ever been engaged in an Integrated Watershed Management program or public project?

- ☐ Yes
- ☐ No

Water Needs Assessment Questionnaire 2018

San Diego Funding Area

What IRWM Region are you located in? (Please pick one)

- ☐ San Diego
- ☐ South Orange County
- ☐ Upper Santa Margarita

(Optional) What is your community's cultural/ethnic composition? _____

_____

_____

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

_____

_____

_____

Water Needs Assessment Questionnaire 2018

San Diego Funding Area

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 you answered yes to the question above, please describe how you think climate change may affect your community's water supply:

Name 1 or 2 particularly beneficial holistic/big-picture water projects/programs in your community:

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 (ie 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:

_____

_____

_____

List any other 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 (ie drought, flooding, infrastructure failure) have impacted wastewater system operations or reliability? Are certain conditions of concern in the future?

_____

_____

_____

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.

Who or what is most impacted by urban runoff in this community? (Urban runoff may be stormwater flows or runoff from irrigation, washing cars, and other outdoor uses.)

Who or what is most impacted by stormwater flooding in this community?

What conditions (ie drought, rain events, infrastructure failure) have resulted in stormwater or flood problems in your community? Are certain conditions of concern in the future?

Has your community experienced any specific public health or safety issues caused by stormwater?

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

Financing

What type of rate structure for water does your community use?

- ☐ Flat Rate or Flat Fee: each customer pays the same price regardless of water use
- ☐ Uniform Volumetric Rate: each customer pays for the volume of water that they use according to a fixed amount per unit of water consumed
- ☐ Block or Tiered Rate: The unit price of water changes according to the level of consumption. Customers that use above average volumes of water are charged a higher rate per unit of water.

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

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 name, location, water source, or other helpful information:

Would this community benefit from strengthened communication with other water communities and stakeholders in the County?

- ☐ Yes
- ☐ No
- ☐ Maybe
- ☐ 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.

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:

If you require additional space to answer the questions above, please use the space provided below.

APPENDIX D: MEETING MATERIALS

San Diego Funding Area
Water Needs Assessment

Presentation to the Community of Anza

Wednesday, August 15th, 2018
6:00 – 7:30 p.m.

Meeting Objective

Solicit input from local organizations and residents on:

- their water-related issues and concerns
- the condition of current water and wastewater infrastructure systems
- how Integrated Regional Water Management (IRWM) Programs can best engage with their community

Agenda

A. Welcome and Introductions

B. What is IRWM?

1. Benefits of IRWM

C. Water Needs Assessment

1. Purpose and Goals
2. Future Use of Water Needs Assessment

D. Community Engagement

1. Funding Opportunities
2. Discussion of Engagement and Barriers

E. Identifying Water Needs

1. Discussion of Water Needs

F. Complete Questionnaire

IRWM Glossary

- DWR – California Department of Water Resources
- IRWM – Integrated Regional Water Management
- SDFA – San Diego Funding Area
- SDIRWM – San Diego IRWM
- USMW – Upper Santa Margarita Watershed
- SOC – South Orange County
- DAC – Disadvantaged Community
- EDA – Economically Distressed Area
- URC – Underrepresented Community
- EJ – Environmental Justice

San Diego Funding Area Water Needs Assessment

Master Presentation to be adapted to each IRWM Region

2018

1

Agenda

- Welcome and Introductions
- What is IRWM
- Water Needs Assessment
- Community Engagement
- Identifying Water Needs
- Next Steps

2

Agenda

- Welcome and Introductions
- What is IRWM
- Water Needs Assessment
- Community Engagement
- Identifying Water Needs
- Next Steps

3

3

Why Are We Here?

IRWM Program Goal

Improve water management throughout the region

- To better understand the water needs in your community
- Voluntary program – allows you to be eligible for State funding for water projects
- We have ~$43 million available for grants
- Disadvantaged community projects
  - $5.3 million awarded to date through Prop 1
  - Another ~$5.2 million remains to be awarded over next three years

4

4

Agenda

- Welcome and Introductions
- What is IRWM
- Water Needs Assessment
- Community Engagement
- Identifying Water Needs
- Next Steps

5

5

What is Integrated Regional Water Management (IRWM) Planning?

6

6

IRWM Program Purpose

"Collaborative effort to identify and implement water management solutions that increase regional self-reliance, reduce conflict, and manage water to concurrently achieve social, environmental, and economic objectives"

-DWR

7

7

Statewide IRWM Program

- Funded through voter-approved bonds
- Managed by CA Department of Water Resources (DWR)
  - Mission: to manage and protect California's water resources
  - Manages imported water system (State Water Project)
  - Distributes grants for water projects to local IRWM Programs
  - IRWM must meet DWR requirements to receive funding

State requirements will be discussed throughout this presentation

8

8

Two Major Components of IRWM

Benefits of Each Component

Grant Funding

- Fund projects
- Meet water and watershed needs
- Reduce community costs
- Position for other grants

Water Planning

- Facilitate partnerships
- Identify and prioritize needs
- Strategic regional planning
- Build additional support

9

9

What Can IRWM Do?

What IRWM Program Can Address	How Have We Addressed These?
• Lack of infrastructure • Water quality • Water supply • Capacity building	• Legislation & advocacy • Community partnerships • Funding for priority projects

10

10

San Diego Funding Area

- 3 Regions:
  - San Diego
  - South Orange County
  - Upper Santa Margarita
- Coordinate on joint projects
- Historically allocated over $90M in funds

Tri-County Funding Area Coordinating Committee (FACC) Boundaries

11

11

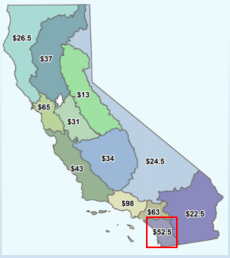
Who is Leading the Programs?

San Diego	SOC	USMW
• City of San Diego • County of San Diego • San Diego County Water Authority	• County of Orange • Municipal Water District of Orange County • South Orange County Wastewater Authority	• Rancho California Water District • Riverside County Flood Control and Water Conservation District • County of Riverside

12

12

Why Does This Matter?



Proposition 1 Funding Allocations (in $millions)

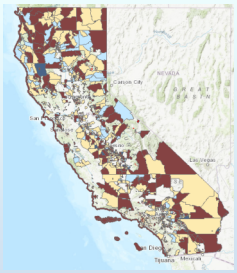
- IRWM defines and prioritizes Region's needs
- Assessment is required to remain eligible for funding
- **$52 million** for our area
  - 20% reserved for disadvantaged communities
  - $43 million remaining
  - $5.2 million (minimum) remaining for disadvantaged community projects

13

13

DWR Requirements

- DWR requires identification of disadvantaged and under-represented communities their needs, and their participation in IRWM
- DWR defines disadvantaged and under-represented communities



DWR's DAC Mapping Tool

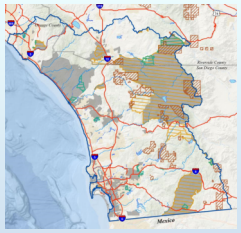
See handout!

14

14

Definitions

- **DAC:** Disadvantaged Community
- **EDA:** Economically Distressed Area
- **URC:** Underrepresented Community
- **EJ:** Environmental Justice Community



Disadvantaged and underrepresented communities in our area

See handout!

15

15

Outcomes: Disadvantaged and Tribal Funding in San Diego

Over the last 10 years:

17 disadvantaged community projects

$13.7 M to disadvantaged communities

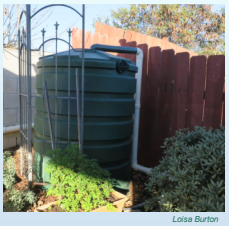
***15%** of all available funding!*

16

16

Example Project: Conservation Home Makeover in Chollas Creek

- *Groundwork San Diego*
- Installed greywater systems, rain barrels, and low flow fixtures in homes
- Water-wise landscape, fruit trees
- 8.5 acre-feet/year of supply/reuse
- Total Cost: $542,000
  - 100% grant-funded
- Project Benefits: Water conservation, food security, and resident's cost savings



Loisa Burton

17

17

Example Project: San Pasqual Water Reclamation Project

- *San Pasqual Band of Mission Indians*
  - Assisted by Rural Community Assistance Corporation
- Installed recycled water pipelines to serve tribal needs
- Total Cost: $350,300
  - 100% grant-funded
- Project Benefits: Water supply and tribal community

18

18

Outcomes: Disadvantaged and Tribal Funding in the Upper Santa Margarita watershed

Over the last 10 years:

2 disadvantaged community projects

$1.1M to disadvantaged communities

12% *of all available funding*

19

19

Example Project: Agricultural Irrigation Efficiency Program

- *Rancho California Water District*
- Conducted agricultural irrigation system evaluations, provided rebates for irrigation system retrofits
- 2,115 acre-feet/year of supply
- Total Cost: $1,289,760
  - 41% grant-funded
- Project Benefits: Water conservation, water quality improvements, power savings

20

20

Example Project: Groundwater Planning for Anza Valley and Ramona Tribe

- *Ramona Band of Cahuilla Indians*
  - Assisted by U.S. Geological Survey and Santa Margarita River Watershed Watermaster
- Total Cost: $560,000
  - 100% grant-funded
- Project Benefits: Water supply management and tribal community

21

21

Outcomes: Disadvantaged Community Funding in South Orange County

Over the last 10 years:

Increased supply reliability and recycled water distribution to disadvantaged community members

$4.6 M benefitted disadvantaged communities

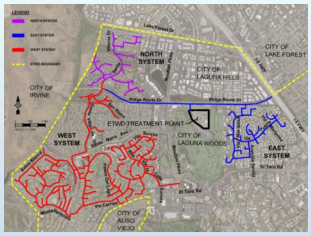
12% *of all available funding!*

22

22

Example Project: Recycled Water Expansion Project in Laguna Woods

- *El Toro Water District Recycled Water Expansion Project*
  - Included installation of a recycled water distribution system and tertiary treatment plant
- Project Benefits: Water supply reliability in Laguna woods



23

23

Agenda

- Welcome and Introductions
- What is IRWM
- Water Needs Assessment
- Community Engagement
- Identifying Water Needs
- Next Steps

24

24

Water Needs Assessment

25

25

What is the Water Needs Assessment?

- Short questionnaire
- Will be used to summarize community water management needs
- You are the key to the process!

26

26

Why Participate in the Needs Assessment?

Have your water needs heard

Future opportunities and projects

Help us help YOU get funding

27

27

Funding Opportunities

- $43 million to be distributed in 2 Implementation Rounds
  - 5.2 million (minimum) for disadvantaged community projects

Round 1	Round 2
Fall 2018	2020

- Join our email list for updated deadlines

See handout!

28

28

Agenda

- Welcome and Introductions
- What is IRWM
- Water Needs Assessment
- Community Engagement
- Identifying Water Needs
- Next Steps

29

29

Supporting Water Management Needs

Facilitate Project Funding

Provide a Forum to Connect with Partners for Solutions

How can IRWM support your water management needs?

30

30

Engaging with Communities


Email and Website


Stakeholder Meetings


Community Partners and Outreach

How can IRWM better engage with your community?

31

31

Potential Challenges & Solutions

What is IRWM?
⇩
Outreach for opportunities

Burdensome Process
⇩
Advocated for advanced payment

Lack of Resources for Participation
⇩
Technical support

Are there challenges to your participation in IRWM?

32

32

Agenda

- Welcome and Introductions
- What is IRWM
- Water Needs Assessment
- Community Engagement
- Identifying Water Needs
- Next Steps

33

33

Urban and Rural Disadvantaged Communities

Urban

Receive municipal water and wastewater services

Rural

No municipal water and wastewater services

**Note: There is no difference in funding availability between urban and rural water projects*

34

34

Urban Needs

- Community development
- Surface water quality
- Flooding
- Illegal dumping and trash
- Bay and lagoon contamination
- Food security
- Increased paved surfaces
- Water costs
- Public safety
- Peer-initiated outreach and education
- Balancing projects & economic growth
- Rehabilitating urban streams
- Capacity, including for O&M
- Health of coastal resources
- Sea level rise

35

35

Rural Needs

- Source water quality
- Safe, reliable drinking water
- Drinking water regulation compliance
- Wastewater intrusion
- Inadequate or failing infrastructure
- Floods and droughts
- Effects of climate change
- Wildfires
- Poor economies
- Small financial base
- Cost of supplemental treatment
- Capacity to apply for and manage grants
- Groundwater contamination
- Inadequate wastewater treatment

36

36

Discussion

What are your water-related issues and concerns?

What can we advocate for from your perspective?

37

37

Water Needs Assessment

Please complete the questionnaire!

https://goo.gl/NuhxH7

38

38

Agenda

- Welcome and Introductions
- What is IRWM
- Water Needs Assessment
- Community Engagement
- Identifying Water Needs
- Next Steps

39

39

Next Steps for IRWM Team

- Compile Water Issues & Needs Data
- Map Water Issues & Needs
- Workshops to Present Our Findings
- Draft Report on Website and Sent Out via Email

You're Invited!
November 2018
Look for email notice!

40

40

Thank You

San Diego	South Orange County	Upper Santa Margarita
www.sdirwmp.org	http://arcg.is/1WWTmb	http://www.ranchowater.com/255/Integrated-Regional-Water-Management
Contact: **Mark Stadler** mstadler@sdcwa.org	Contact: **Jenna Voss** jenna.voss@ocpw.ocgov.com	Contact: **Justin Haessly** haesslyj@ranchowater.com

41

41

Disadvantaged Community (DAC), Economically Distressed Areas (EDAs), Underrepresented Communities (URCs), and Environmental Justice (EJ) Definitions for San Diego Funding Area

July 15, 2018

Purpose: Disadvantaged Community, Economically Distressed Area, Underrepresented Community, and Environmental Justice definitions for the San Diego Funding Area Water Needs Assessment.

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[1]

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 by the San Diego IRWM Program.

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.

[1] US Census Bureau - Median Household Income (in 2016 dollars), 2012-2016.

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, 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[2] 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.

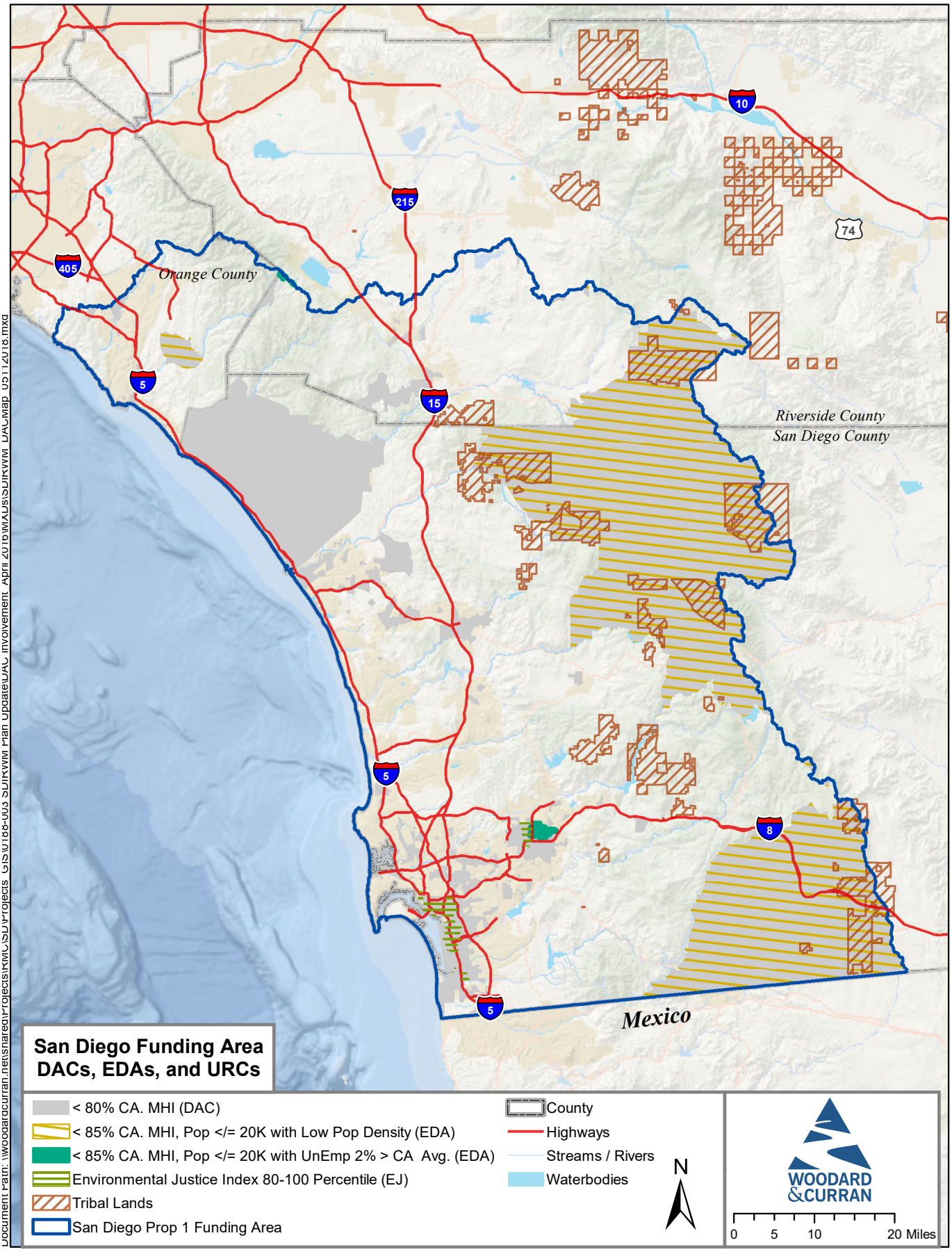
Areas mapped on DWR's EDA Mapping Tool (https://gis.water.ca.gov/app/edas/) are considered EDAs by the San Diego IRWM Program.

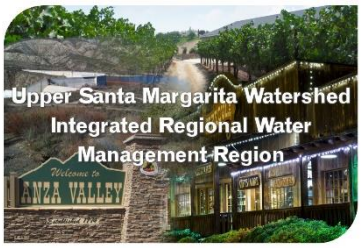
Underrepresented Community (URC): DWR does not define URCs, but recognizes Native American Tribes as traditionally underrepresented. The San Diego IRWM Program defines URCs as communities that currently have little or no representation in water policy and/or water resource management projects, or who historically have disproportionately less representation in public policy or decision-making forums. All Native American Tribes are considered URCs.

Environmental Justice (EJ) Communities: EJ seeks to ensure that land use plans, policies, and actions do not disproportionately affect low income and minority communities. Environmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work. An EJ community is one that is mapped with an EJ Index of 80-100 percentile for any EJ Index compared to the State on the EPA's EJScreen tool (https://ejscreen.epa.gov/mapper/). EJ Indices include PM2.5, Ozone, NATA* Diesel PM, NATA* Air Toxics Cancer Risk, NATA* Respiratory Hazard Index, Traffic Proximity and Volume, Lead Paint Indicator, Superfund Proximity, RMP Proximity, Hazardous Waste Proximity, and Wastewater Discharge Indicator.

[2] California Employment Development Department. 2018. EDD News Release No. 18-73. Available: https://www.edd.ca.gov/About_EDD/pdf/urate201806.pdf

Figure 1: DACs, EDAs, and URCs in the San Diego Funding Area



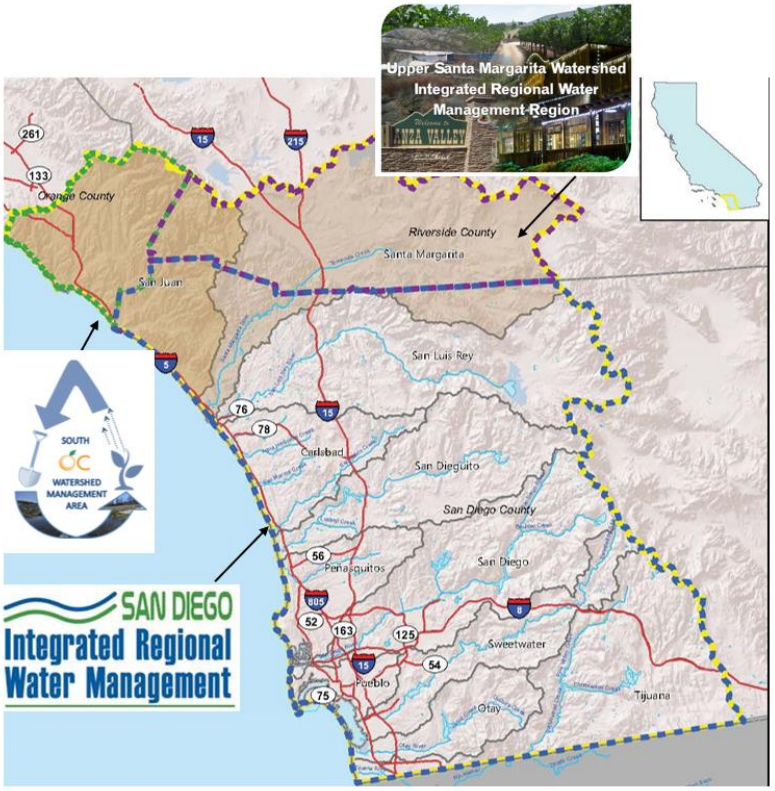


Navigating the Integrated Regional Water Management (IRWM) Funding Process

A How-To Guide

August 13, 2018

What does the IRWM Program fund?



The IRWM Grant Program provides funding for projects that help meet the long-term water needs of Californians. The IRWM Grant Program is designed to encourage integrated regional strategies for management of water resources with an overall goal of improving water supply, water quality, and natural resources. Grant funding is distributed through three regional IRWM Programs within our area – San Diego, South Orange County, and Upper Santa Margarita (see contact info on back page).

This round of implementation grant funding, "Proposition 1: Regional Water Security, Climate and Drought Preparedness," focuses specifically on:

- Assisting water infrastructure systems to adapt to climate change;
- Providing incentives throughout each watershed to collaborate in managing the region's water resources and setting regional priorities for water infrastructure; and
- Improving regional water self-reliance, while reducing reliance on the Sacramento-San Joaquin Delta.

Projects may include, but are not limited to, the following elements:

- water reuse and recycling
- direct and indirect potable reuse
- water-use efficiency and conservation
- surface and underground water storage
- groundwater cleanup and recharge
- conjunctive use
- water desalination
- decision support tools to model regional strategies for climate change
- water quality improvement
- regional water conveyance facilities
- watershed protection and restoration
- water supply reliability
- wildfire risk reduction
- stormwater management
- stormwater capture and use
- multi-benefit stormwater projects
- decision support tools for multi-benefit stormwater projects
- stormwater resource plan projects

What is the IRWM application process?

In general, the IRWM Grant application process takes about 5-9 months. The next round of grants is expected to begin in Summer 2018. Overseen by the California Department of Water Resources (DWR), a solicitation is released with specific guidance on the grant program. Once that is available, the three IRWM Programs within our area release their respective "Call for Projects." Projects are submitted to each IRWM Program and then projects are selected locally using project scoring criteria from the three regions' IRWM Plans[1] that rank applications based on regional goals, beneficial uses, community partnerships, etc. Scoring criteria specific to your IRWM Program for a given round of funding is generally made available during the local Call for Projects. After projects are chosen locally, they are submitted to DWR in a consolidated application by each IRWM Program. The next round of grants is expected to be awarded in Spring 2019 by DWR.

What are key IRWM application considerations?

If you are interested in applying for IRWM funding, please contact your IRWM Program representative (see contact info on back page) for specific information about the application process for your region and to get on the email list for the Call for Projects.

A few highlights that we have found to be of importance to applicants follow:

- The IRWM Grant Program provides grant funding only. Applicants are responsible for implementing their submitted projects and administering the grant contract.
- DWR's method of payment is via reimbursements. However, disadvantaged communities and NGOs with grant awards less than $1 million are eligible for 50% advanced payment.

[1] Project Selection Process for the three IRWM regions are available at the following links:
San Diego IRWM Program: Chapter 9 of the IRWM plan found here (http://www.sdirwmp.org/pdf/SDIRWM_09_Projects_Sep2013.pdf)
South Orange County IRWM Program (http://arcg.is/1WWTmb). Refer to Chapter 6 of the IRWM plan for the local scoring criteria.
Upper Santa Margarita IRWM Program: Chapter 5 of the IRWM plan found here (https://www.ranchowater.com/DocumentCenter/Index/38)

- DWR withholds 10% retention on all reimbursements and advanced payments. Upon full completion of the project, the retention is released.
- Activities must be in compliance with the California Environmental Quality Act (CEQA) and labor compliance program laws.
- Post-performance monitoring and reporting is required for 10 years after the project has been completed.

What is the anticipated timeline?

Milestone or Activity	Tentative Schedule*
Round 1 Final Solicitation from DWR	Fall 2018
Round 1 Project Applications due to the IRWM Programs	TBD (typically 6 weeks after DWR releases solicitation)
Round 1 Grant Applications Due to DWR	Beginning April 2019
Round 1 Grant Awards	Summer 2019
Round 2 Solicitation Process Begins	2020

*Note: Emails with updated timelines will be sent regularly. Be sure to subscribe to IRWM email communications by contacting your local regional representative (see below).

Who are eligible grant applicants?

The following entities qualify as eligible IRWM grant applicants: public agencies, non-profit organizations, public utilities, federally recognized Indian Tribes, State Indian Tribes listed on the Native American Heritage Commission's tribal consultation list, and mutual water companies.

Who are considered disadvantaged communities?

DWR reserves a minimum of 10% IRWM grant funds for projects that benefit the following:

- DAC (Disadvantaged Community): Median Household Income < 80% statewide

Note that these communities are eligible to receive funding from the general IRWM grant funds as well as the 10% minimum set aside. The 10% figure is a floor, not a ceiling.

Who are considered economically distressed areas?

- EDA (Economically Distressed Area): Median Household Income <85% of statewide and a population of <20,000 people. It also has 1) low population density, 2) unemployment 2% higher than statewide average, or 3) financial hardship

Who are considered underrepresented communities?

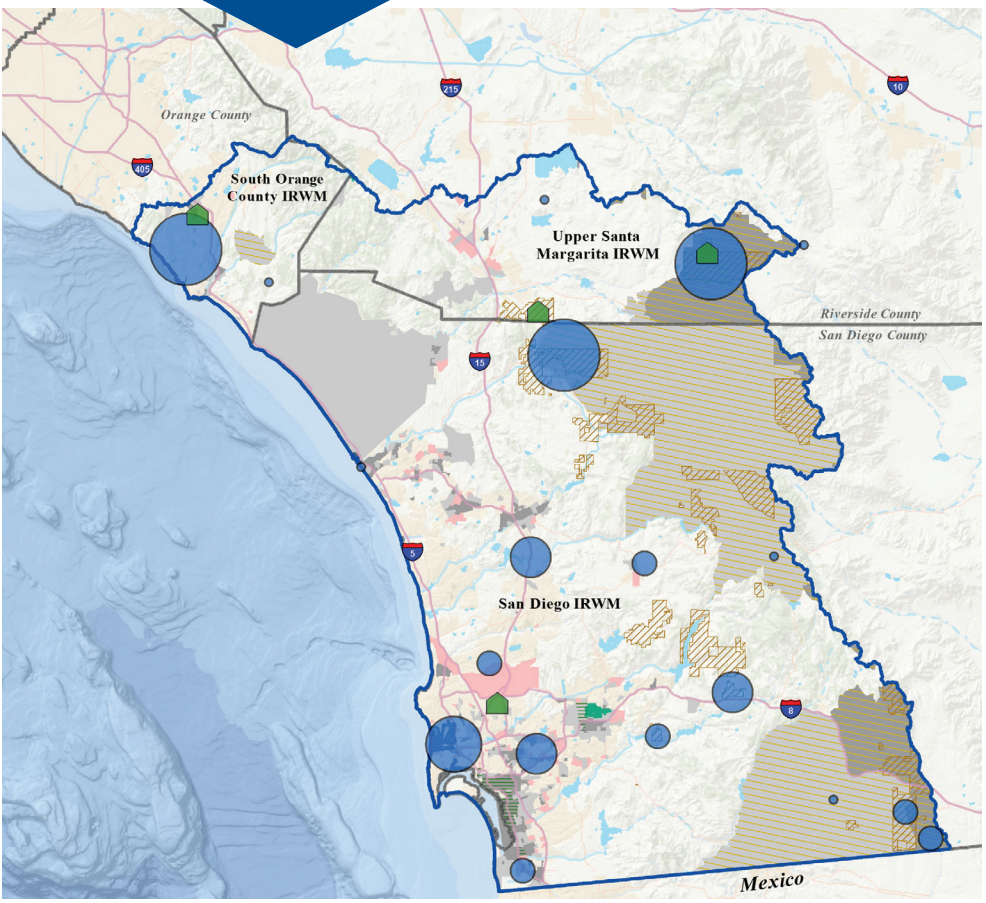
- URC (Underrepresented Community): All Native American tribes and any other community that is considered to be underrepresented in water policy, water resource management projects, or in public policy or decision-making forums. Some URCs are anticipated to be identified through the *Water Needs Assessment* process.
- EJ (Environmental Justice): EJ Index of 80-100 percentile in the US EPA's EJScreen or State's CalEnviroScreen tools

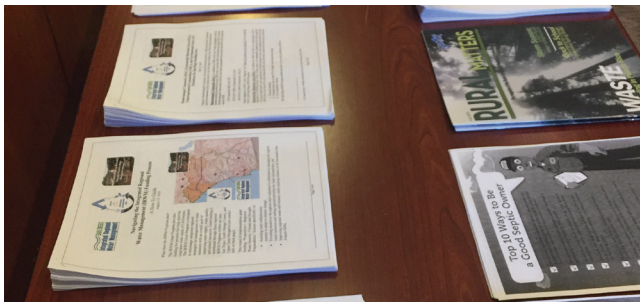
Who should I contact with questions?

For questions regarding the application process, please contact the IRWM representative in your region. See contact information below:

San Diego IRWM Region	South Orange County IRWM Region	Upper Santa Margarita IRWM Region
Mark Stadler	**Jenna Voss**	**Justin Haessly**
mstadler@sdcwa.org	jenna.voss@ocpw.ocgov.com	haesslyj@ranchowater.com
858-522-6735	714-955-0652	951-296-6942
http://sdirwmp.org/	http://arcg.is/1WWTmb	https://www.ranchowater.com/255/Integrated-Regional-Water-Management

For further information, contact:
Mark Stadler, IRWM Program Manager
San Diego County Water Authority
4677 Overland Avenue
San Diego, CA 92123
(858) 522-6735
mstadler@sdcwa.org





Prepared for the Tri-County Funding Area Coordinating Committee by:

Woodard & Curran
Climate Science Alliance
Rural Communities Assistance Corporation