SAN DIEGO
Integrated Regional
Water Management

San Diego Integrated Regional Water Management Region Acceptance Process Application

San Diego County Water Authority

on behalf of the Regional Water Management Group
and the Regional Advisory Committee

A component of the IRWM Program Guidelines

The City of San Diego

County of San Diego

San Diego County Water Authority

April 2009

San Diego Integrated Regional Water Management
Region Acceptance Process

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Tri-County FACC Common Elements

The Tri-County Funding Area Coordinating Committee (Tri-County FACC) has developed common language and sections that describe the coordination and collaborative efforts within the San Diego Funding Area. These common elements may be found in slightly different sections in each submission, but are cross-referenced in the table below.

Common Element	San Diego RAP Application	
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Acronyms

acre-feet per year (AFY)
Area of Special Biological Significance (ASBS)
Best Management Practices (BMPs)
California Department of Fish and Game (CDFG)
California Department of Water Resources (DWR)
California Environmental Protection Agency (CalEPA)
California Urban Water Conservation Council (CUWCC)
Capital Improvement Program (CIP)
City of San Diego (City)
Colorado River Aqueduct (CRA)
County of San Diego (County)
County's Department of Environmental Health (DEH)
County's Department of Planning and Land Use (DPLU)
County's Department of Public Works (DPW)
Fallbrook Public Utilities District (FPUD)
greenhouse gas (GHG)
Imperial Irrigation District (IID)
indirect potable reuse (IPR)
Integrated Regional Water Management (IRWM)
joint powers authorities (JPAs)
La Jolla Shores Watershed Management Group (WMG)
Memorandum of Understanding (MOU)
Metropolitan Water District of Southern California (Metropolitan)
milligrams per liter (mg/l)
million acre-feet (MAF)
municipal and industrial (M&I)
Municipal Water District (MWD)
Municipal Water District of Orange County (MWDOC)
pharmaceutical and personal care products (PCPPs)
Rancho California Water District (RCWD)
Resource conservation districts (RCDs)
Region Acceptance Process (RAP)
Regional Water Management Group (RWMG)
Regional Water Quality Control Board (Regional Board)
resource conservation districts (RCDs)
Riverside County Flood Control and Water Conservation District (RCFCWCD)
Sacramento-San Joaquin Delta (Delta)
San Diego Association of Governments (SANDAG)
San Diego County Multiple Species Conservation Program (MSCP)
San Diego County Urban Runoff from Municipal Separate Storm Sewer Systems Permit (MS4 Permit)
San Diego County Water Authority (Water Authority)
San Diego Formation (SDF)

Santa Rosa Water Reclamation Facility (SRWRF)
South Orange County Wastewater Authority (SOCWA)
Southern California Salinity Coalition (SCSC)
State Water Project (SWP)
State Water Resources Control Board (State Board)
Technical Advisory Committee (TAC)
total dissolved solids (TDS)
Total Maximum Daily Load (TMDL)
total organic carbon (TOC)
U.S. Environmental Protection Agency (USEPA)
U.S. Fish and Wildlife Service (USFWS)
U.S. Geological Survey (USGS)
U.S. Marine Corps Base Camp Pendleton (Camp Pendleton)
Waste Discharge Requirements (WDRs)
Water-Energy Subgroup of the Climate Action Team (WET-CAT)
Watershed Urban Runoff Management Plans (WURMPs)
Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP)

1 Submission Authority

1-1 Submission Authority

This section addresses the following Reviewer questions:

- *Was contact information was provided?*
- *Is it clear that the submitting agency has been given permission to submit on behalf of the RWMG?*

This Region Acceptance Process (RAP) Application is being submitted by the San Diego County Water Authority (Water Authority). Per the adopted *Memorandum of Understanding for the Integrated Regional Water Management Grant Program for FYs 2009-2013*, the Regional Water Management Group (RWMG) – comprised of the City of San Diego (City), the County of San Diego (County), and the Water Authority – determined that the Water Authority shall have overall responsibility for managing the San Diego Integrated Regional Water Management (IRWM) program and submitting all applications to the State on behalf of the parties (see Attachment A). The Water Authority is the regional water wholesaler whose jurisdiction covers a majority of the proposed San Diego IRWM Region.

The main point of contact for the San Diego IRWM program follows:

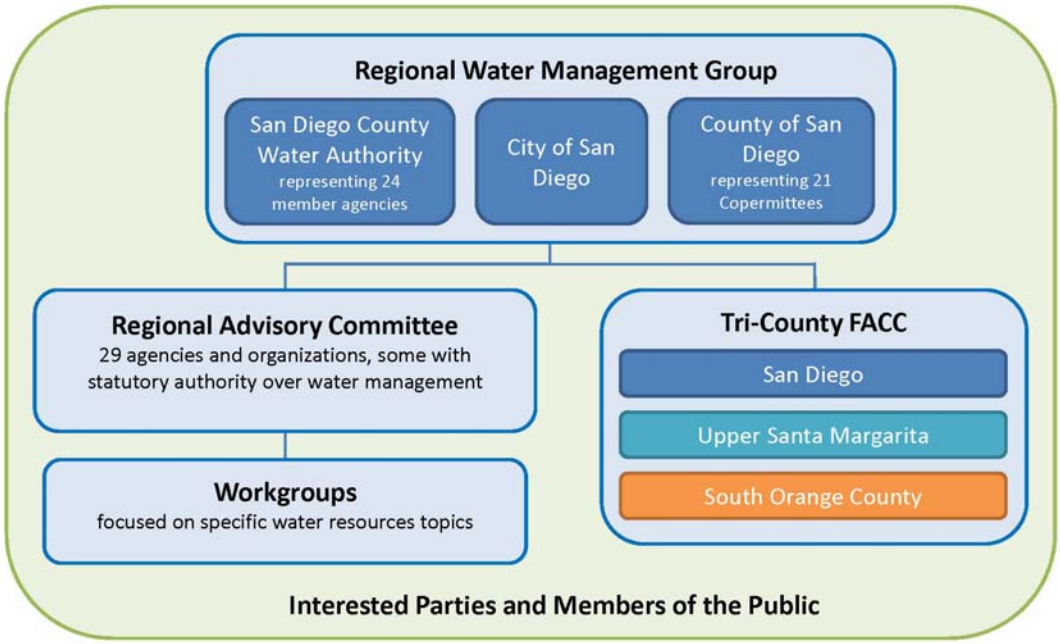
Mark Stadler
Principal Water Resources Specialist
Water Resources Department
San Diego County Water Authority
4677 Overland Avenue
San Diego CA 92123
(858) 522-6735
MStadler@sdcwa.org

2 Regional Water Management Group and Stakeholders

The San Diego Region includes the portion of San Diego County that is tributary to coastal waters (see Figure 2-1). The Region features a complex array of water supply, water management, water quality protection, pollution prevention, habitat protection, flood protection, and recreational needs that are addressed by the IRWM program.

The RWMG, which is the group responsible for implementation of the San Diego IRWM program, is comprised of the City of San Diego, the County of San Diego, and the Water Authority. The combined jurisdiction of the three agencies comprises the entire Region, and their combined responsibilities address all facets of water management. The IRWM program also includes numerous water management stakeholders who support IRWM planning and implementation through participation in committees, workshops, and projects. Figure 2-2 provides an overview of the organizational structure for the San Diego IRWM program, while the sections below describe the entities who participate in the process.

Figure 2-2: San Diego IRWM Organizational Structure



2-1 Regional Water Management Group

This section addresses the following Reviewer questions:

- *Does the submittal list and discuss the role of the RWMG members and water management stakeholders that have agreed to participate in this process?*
- *Have the necessary RWMG members indicated they have adopted or will adopt the completed IRWM plan?*
- *Do the RWMG members identified represent the majority of the water management authorities and stakeholders within the region boundary?*
- *Do you understand for each member whether they have statutory authority over water management, their participation in IRWM planning and implementation, and their local and regional interests in water management and planning?*

The RWMG is the group responsible for the day-to-day administration and implementation of the San Diego IRWM program. All three of these public agencies have water management authority within their respective boundaries. **Section A (pages A-4 to A-10) of the IRWM Plan** describes the water management responsibilities of each agency and their role in the RWMG. The following provides an overview of the RWMG agencies.

Since their formation in 2004, the RWMG agencies have jointly developed and adopted a series of Memorandums of Understanding (MOUs) to outline their roles and responsibilities in management of the IRWM program (see Attachment A):

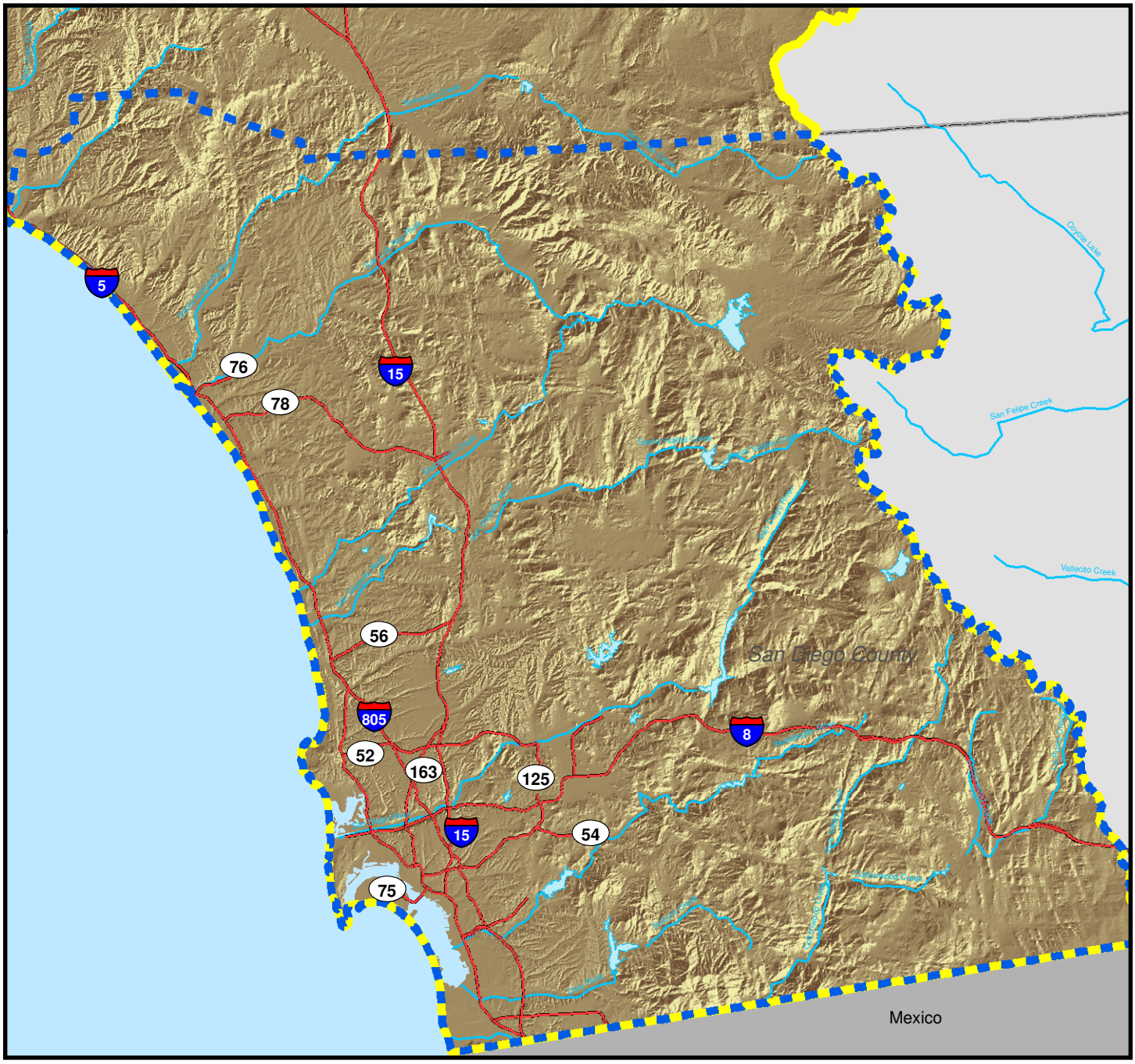
- In June 2005, the three RWMG agencies jointly adopted an *MOU for the IRWM Grant Program for FYs 2005-2009*, outlining their agreement to develop and submit a Proposition 50 grant application, develop and adopt an IRWM Plan, and identify and prioritize water management projects for the grant cycle(s).
- In June 2007, the three RWMG agencies jointly adopted an amendment to the MOU (FYs 2005-2009) to expand funding support for the Proposition 50 grant application, stakeholder outreach and coordination, and collaboration with the Regional Advisory Committee (RAC).
- In March 2009, the three RWMG agencies jointly adopted a new *MOU for the IRWM Grant Program for FYs 2009-2013*, outlining their commitment to implementing and updating the IRWM Plan, administering the Proposition 50 grant contract, and applying for Proposition 84 and Proposition 1E funding.

In accordance with terms set forth in their MOU (FYs 2009-2013), the three RWMG agencies are equal partners in management of the IRWM program. The three agencies share equally in the costs to administer IRWM planning activities. The RWMG also recognizes that cooperation and input from stakeholders throughout the region is a necessary part of an effective IRWM program, regardless of their ability to pay. As a result, the RWMG has assumed a leadership role in identifying stakeholders and soliciting stakeholder input for the IRWM program.

Figure 2-3 presents the jurisdictional boundaries of the three RWMG agencies. The combined jurisdiction of the three agencies comprises the entire Region, and the water supply service areas of the Water Authority and City cover all urbanized portions of the Region. Table 2-1 summarizes water management responsibilities of the three RWMG agencies.

Because the Water Authority, the City, and the County serve multiple water management roles within the Region and are involved in a number of region-wide coordination efforts, they are the appropriate agencies for managing the IRWM program. As documented in **Section B (pages B-55 to B-57) of the IRWM Plan**, depending on regional hydrologic conditions, between 70 and 90 percent of the Region's water supply is provided through the Water Authority. The City of San Diego is the Region's largest retail water agency, it's largest municipal wastewater agency, and is involved in water management within six of the Region's eleven hydrologic units. The County is involved in watershed planning efforts in all but one of the Region's hydrologic units. The City and County together provide wastewater service to a sizable majority of population within the Region. Further, the City and County are the key Copermittees in the regional urban runoff management program. The City and County are also responsible for land use planning and regulation within the majority of the Region's lands.

Figure 2-1: Regional Setting



Legend

- San Diego IRWM Region
- Funding Area Boundary
- Ocean
- Waterbody
- River
- Freeway
- Mexico

Topology

Value

High : 254

Low : 0

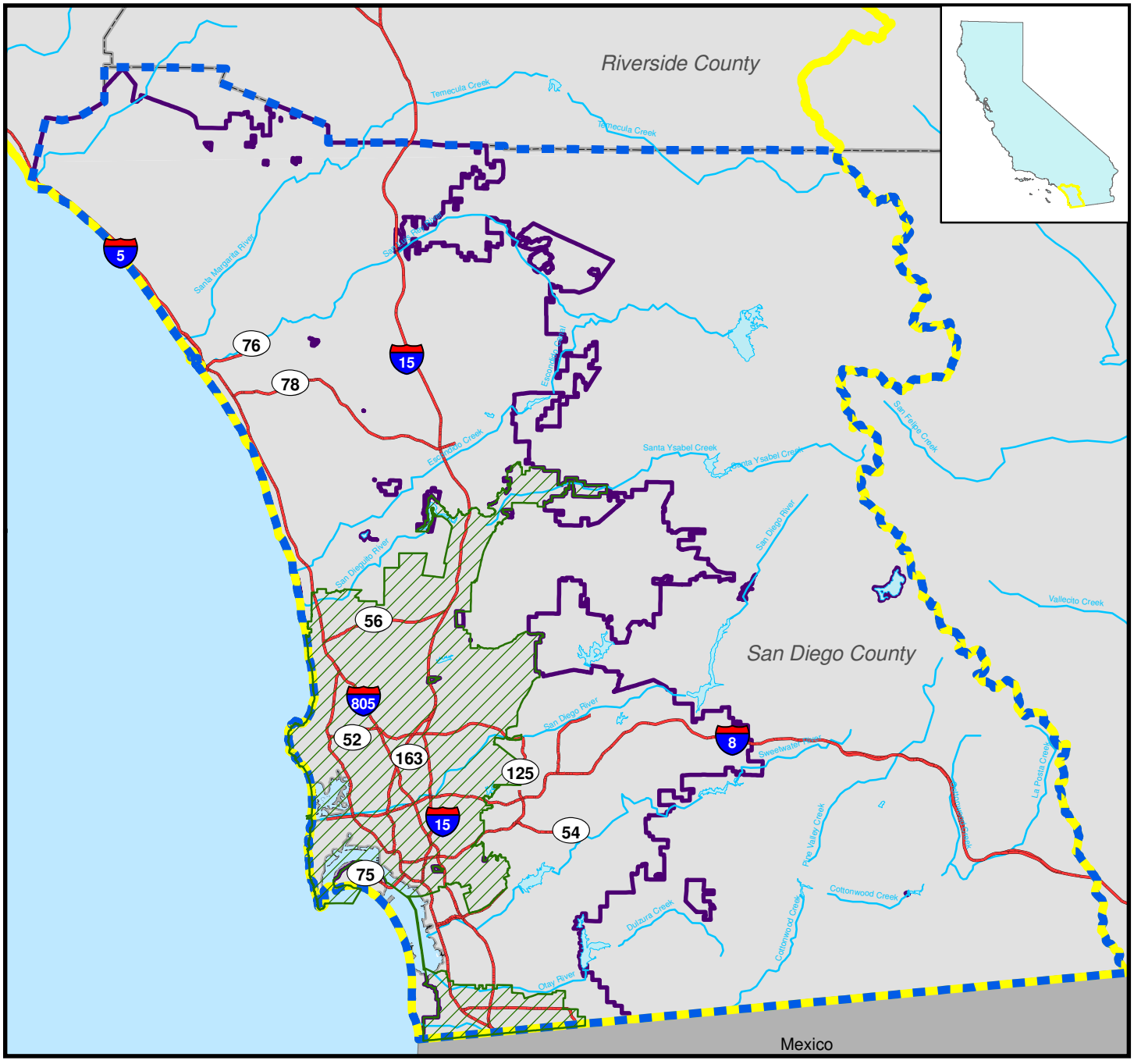
N

0 2.5 5 10

Miles

RMC

Figure 2-3: RMWG Boundaries



Legend

- San Diego IRWM Region
- Water Authority Service Area
- City of San Diego
- Funding Area Boundary
- County
- Ocean
- Waterbody
- River
- Freeway
- Mexico

N

0 2.5 5 10
Miles

RMC

Table 2-1
Summary of Water Management Responsibilities of RWMG

Water Management Category	San Diego County Water Authority	City of San Diego	County of San Diego
Imported Water Delivery	●		
Water Supply Infrastructure	●	●	●
Water Supply Planning	●	●	○
Storing Raw Imported Water	●	●	
Stormwater Capture and Reuse	○	●	●
Groundwater Supply	○	●	●
Wastewater Treatment		●	●
Recycled Water Supply	○	●	●
Water and Recycled Water Regulation			●
Public Health Regulation			●
Municipal Stormwater NPDES Management		●	●
Flood Management and Control		●	●
Watershed Protection		●	●
Land Use Control and Management		●	●
Multiple Species Conservation Planning		●	●
Parks and Recreation		●	●

● Direct water management involvement
○ Provides planning support

San Diego County Water Authority

As described in **Section A (pages A-6 to A-7) of the IRWM Plan**, the Water Authority is the regional water wholesale agency within San Diego County. The Water Authority's mission is to provide a safe and reliable supply of water to its 24 member agencies. The Water Authority's member agencies serve a combined population of nearly three million (approximately 97 percent of the County's population) and support an annual economy of over $160 billion (San Diego Regional Chamber of Commerce Economic Research Bureau and County of San Diego 2007).

The Water Authority's boundaries comprise the western third of San Diego County with a total area of 1,468 square miles. The urbanized parts of the Region are entirely within the Water Authority's service area. Water Authority member agencies include six cities, five water districts, eight municipal water districts, three irrigation districts, a public utility district, and the U.S. Marine Corps Base Camp Pendleton (Camp Pendleton). The Water Authority is governed by a 35-member Board of Directors that comprises representatives of all of its member agencies. The City of San Diego is the largest member agency of the Water Authority in terms of land area and population, as well as in terms of Board representation. In January 2009, the City comprised 40.19 percent of the vote within the Water Authority Board of Directors. The County appoints a non-voting representative to the Water Authority Board.

The Water Authority is a member agency of the Metropolitan Water District of Southern California (Metropolitan) and is the largest Metropolitan customer. The Water Authority also purchases conserved agricultural supplies through a water transfer agreement with the Imperial Irrigation District (IID). Additionally, the Water Authority has been assigned rights to water conserved as part of lining the All-American Canal and Coachella Canal in Imperial County. The Water Authority conveys the water supplies to its member agencies via five parallel pipelines that comprise the First Aqueduct and Second Aqueduct. The Water Authority delivers the supplies to its member agencies through 88 service connections.

In coordination with its member agencies, the Water Authority has recently implemented an Emergency Storage Program (ESP) that enhances the Region's reservoir capacity and improves conveyance facilities. While the ESP is designed to make the regional water supply more reliable during an emergency that disrupts normal imported water deliveries, the new facilities will improve the Region's water system flexibility and reliability at all times.

As part of water supply diversity plans set forth in the Water Authority's *Updated 2005 Urban Water Management Plan*, the Water Authority actively coordinates with its 24 member agencies to plan and pursue water conservation, recycled water use, development of local groundwater supplies, surface water storage and supplies, additional water transfers, seawater and groundwater desalination, and water quality protection projects.

Role in IRWM Program and Plan Adoption

As one of three equal partners in the RWMG, the Water Authority takes an active role in day-to-day management and administration of the IRWM program, participation in the RAC and Workgroups, and coordination with stakeholders and interested parties. The San Diego RWMG MOU (FYs 2009-2013), adopted by the Water Authority Board of Directors on December 18, 2008, designates the Water Authority as the lead agency for purposes of submitting grant applications and administering grants (see Attachment A). The Water Authority Board of Directors adopted the IRWM Plan on October 25, 2007, along with an amendment on January 24, 2008 (see Attachment B). The Water Authority Board adopted the Tri-County FACC MOU on March 26, 2009 (see Attachment C).

City of San Diego

As described in **Section A (pages A-7 to A-8) of the IRWM Plan**, the City of San Diego exercises a range of water supply, wastewater, storm water, flood plain management and watershed management responsibilities, and administers a number of programs that provide opportunities to pursue integrated approaches with other agencies and jurisdictions.

The City's Water Department operates an extensive water system that currently provides drinking water to approximately 1.3 million customers located within the Cities of San Diego, Del Mar, Coronado, and portions of National City, Chula Vista, and Imperial Beach. In addition to providing potable water supply to approximately half of the population of San Diego County, the City's Water Department also delivers raw water to three adjacent agencies. The City annually treats and delivers more than 200,000 acre-feet of water to residential, commercial, industrial, and agricultural customers within a 330-square-mile service area. The City's water system includes nine raw water storage reservoirs, three water treatment facilities, 32 treated water storage facilities, and 3,460 miles of transmission and distribution pipelines (City of San Diego 2005).

The City's Metropolitan Wastewater Department operates an extensive wastewater collection and treatment system that includes approximately 2,900 miles of sewer line servicing a 330-square mile area. The system includes a wastewater treatment plant that discharges to the ocean and two facilities that produce recycled water for beneficial reuse. The Metropolitan Wastewater Department is the operating agency for the San Diego Metropolitan Sewerage System (Metro System), which provides wastewater service to approximately 2.2 million residents of the City of San Diego and 15 other cities and districts within a 450-square mile service area (City of San Diego 2007a). Approximately 75 percent of the County's population discharges its wastewater to the Metro System.

The City of San Diego maintains more than 39,000 storm drain structures and 900 miles of storm drain pipelines and channels within an urbanized area of approximately 237 square miles (City of San Diego 2007b). The City is one of the 21 Copermittees regulated by Regional Board Order No. R9-2007-0001 (NPDES CAS0108758), the San Diego County Urban Runoff from Municipal Separate Storm Sewer Systems Permit (MS4 Permit).

The City's Storm Water Pollution Prevention Program is administered by the City's Storm Water Department. The program is responsible for reducing pollutants in urban runoff and storm water. In this capacity, the Storm Water Division is involved in public education, employee training, water quality monitoring, source identification, code enforcement, watershed management, Total Maximum Daily Load (TMDL) implementation, Area of Special Biological Significance (ASBS) implementation, and the development and implementation of Best Management Practices (BMPs) within the City's jurisdictional boundaries. Additionally, the Storm Water Department coordinates with the County (the Principal Copermittee of the MS4 Permit) and the Regional Water Quality Control Board (Regional Board) in addressing regional urban runoff issues.

As part of this regional effort, the Storm Water Department coordinates with other regional agencies to implement the "Think Blue" program to educate the public on urban runoff issues. The Storm Water Department also provides technical expertise and guidance to all City departments to ensure implementation and compliance with the MS4 Permit (City of San Diego 2009).

The City of San Diego is also active in regional watershed planning efforts. The City's Water Department is the lead agency for the San Dieguito Watershed Management Plan, and the City's Planning Department is the lead agency for the Peñasquitos Watershed Management Plan. Additionally, the City is a participant in three other watershed management initiatives within the County: San Diego River Watershed Management Plan, Tijuana River Binational Vision (Prop 13 Watershed Management Plan), and Otay River Watershed Management Plan.

The City of San Diego Planning Department regulates land use within the metropolitan boundaries and is responsible for coordinating with other regional agencies in implementing the Multiple Species Conservation Program (MSCP) Plan.

Role in IRWM Program and Plan Adoption

As one of three equal partners in the RWMG, the City takes an active role in day-to-day management and administration of the IRWM program, participation in the RAC and Workgroups, and coordination with stakeholders and interested parties. The City Council adopted the IRWM Plan on December 18, 2007 (see Attachment B). The City Council adopted the RWMG MOU (FYs 2009-2013) and the Tri-County FACC MOU on March 10, 2009 (see Attachments A and C).

County of San Diego

As described in **Section A (pages A-9 to A-10) of the IRWM Plan**, the County of San Diego maintains a number of water and watershed-related program responsibilities within unincorporated portions of the Region. These responsibilities include water supply (outside Water Authority service area), wastewater treatment, land use and planning, public health, parks and recreation, flood management, municipal stormwater management, ecosystem and habitat protection, and watershed planning.

The County's Department of Planning and Land Use (DPLU) is responsible for developing the County's General Plan and has led the effort in developing the San Diego River Watershed Management Plan, Otay River Watershed Management Plan, Otay Special Area Management Plan, Tijuana River Binational Vision (Prop 13 Watershed Management Plan), and Santa Margarita Watershed Management Plan. The County DPLU also manages the three MSCP subarea plans: South County MSCP Plan, North County MSCP Plan, and East County MSCP Plan. Additionally, the DPLU manages the County's Farming Program and also has discretionary project approval authorities.

The County's Department of Public Works (DPW) provides wastewater and drinking water services to unincorporated communities outside the imported water distribution service area. The DPW also provides the following services for the unincorporated portion of the County:

- Stormwater conveyance service and maintenance through the Roads Division;
- Erosion control and flood management services via the Flood Control District and Watershed Protection Program; and
- Stormwater and watershed protection programs and services through the Watershed Protection Program, including the participation in the development and implementation of Watershed Urban Runoff Management Plans (WURMPs) within ten of the Region's eleven hydrologic units.

The County's Department of Environmental Health (DEH) has regulatory authority for beach recreational water use, site assessment and mitigation, on-site wastewater systems (septic), recycled water use, small water systems and monitoring wells.

The County uses an inter-departmental approach for addressing county-wide issues such as habitat protection, watershed protection, and water quality improvement. The County implements its own municipal storm water management program in unincorporated areas. Additionally, the County acts as Principal Copermittee for the MS4 Permit that regulates discharges from 21 municipal sewer systems, including the 18 municipalities of the County, the San Diego Unified Port District, and the San Diego County Regional Airport Authority.

project clean water

Since 2000, the County has developed and supported Project Clean Water, a broad-based forum for developing stakeholder-driven solutions to pressing water quality problems throughout the Region. Through Project Clean

Water's website (www.projectcleanwater.org) and stakeholder groups, the County assumed the primary responsibility for coordinating initial stakeholder input into the development of the adopted IRWM Plan.

Role in IRWM Program and Plan Adoption

As one of three equal partners in the RWMG, the County takes an active role in day-to-day management and administration of the IRWM program, participation in the RAC and Workgroups, and coordination with stakeholders and interested parties. The County Board of Supervisors adopted the IRWM Plan on November 7, 2007 (see Attachment B). The County Board of Supervisors adopted the RWMG MOU (FYs 2009-2013) on January 28, 2009 and the Tri-County FACC MOU on April 8, 2009 (see Attachments A and C).

2-2 Stakeholders and Interested Parties

This section addresses the following Reviewer questions:

- *Does the submittal list and discuss the role of the RWMG members and water management stakeholders that have agreed to participate in this process?*
- *Are there any other entities known to have an interest in the area that have not been listed?*

Although not members of the RWMG, other stakeholders and interested parties are an integral part of the IRWM program. These agencies, organizations, and individuals help to guide the direction and vision of the program. **Section N (page N-3) of the IRWM Plan** describes formation of the Regional Advisory Committee (RAC) to serve as the project advisory committee for IRWM planning activities. Since Plan adoption, the RAC has been expanded to include representation from adjacent IRWM regions (South Orange and Riverside counties) and several Workgroups have formed to guide planning and project prioritization. Additionally, broad stakeholder outreach was pursued in order to engage members of the public and other interested parties in the IRWM planning process.

Table 2-5 (on page 2-14) provides a matrix of the stakeholders and interested parties involved in water management in the Region. Table 2-5 also indicates the level of IRWM involvement each agency and organization has, from membership on the RAC or Workgroups to those who have been contacted via Project Clean Water and invited to participate in the program.

Regional Advisory Committee

The RAC was formed in December 2006 to assist in completion of San Diego's first IRWM Plan and prioritization of projects both within the Plan and for future funding application(s) as they arise. The RWMG will incorporate the RAC's recommendations in documents prepared for presentation to the RWMG's governing bodies. The RAC currently consists of 25 voting and 4 non-voting members with expertise in water supply, wastewater, recycled water, stormwater and urban runoff, natural resources, and environmental stewardship. The RAC composition provides diverse representation from various functional areas related to water management (five retail water agencies, six natural resources and watersheds organizations, four water quality representatives, seven at-large members, two resources agencies, and two Tri-County FACC representatives). The RWMG agencies are represented by only three voting seats. Table 2-2 provides a listing of all RAC members. Table 2-3 provides a listing of RWMG staff that support the RAC.

Table 2-2
San Diego RAC Membership

RAC Member	Title	Organization
Regional Water Management Group		
Kathleen Flannery (Chair)	Land Use and Environment Group Finance and HR Director	County of San Diego
Marsi Steirer	Deputy Director of Water Policy and Strategic Planning	City of San Diego
Ken Weinberg	Director of Water Resources	San Diego County Water Authority
Retail Water Agencies		
Michael Bardin Alt: Bill Hunter	General Manager	Santa Fe Irrigation District
Mark Rogers Alt: Rick Alexander	General Manager	Sweetwater Authority
Keith Lewinger	General Manager	Fallbrook Public Utility District
Susan Varty	Director	Olivenhain Municipal Water District
Mark Weston	General Manager	Helix Water District
Natural Resources and Watersheds		
Craig Adams	Executive Director	San Dieguito River Valley Conservancy
Chris Basilevac Alt: Kathy Viatella	Project Director	The Nature Conservancy
Doug Gibson	Executive Director	San Elijo Lagoon Conservancy
Rob Hutsel	Executive Director	San Diego River Park Foundation
Shirley Innecken	Watershed Coordinator	Southern California Wetlands Recovery Project
Judy Mitchell Alt: Jason Giessow	District Coordinator	Mission Resource Conservation District
Water Quality – Wastewater/Recycled Water		
Neal Brown	Director of Engineering and Planning	Padre Dam Municipal Water District
Mike Thornton	General Manager	San Elijo Joint Powers Authority
Water Quality – Stormwater		
Kirk Ammerman	Deputy Director of Engineering	City of Chula Vista
Katherine Weldon	Program Administrator	City of Encinitas
Members at Large		
Michael Connolly Alt: Melisa Estes	Campo EPA Manager	Campo Band of Kumeyaay Indians
Linda Flournoy	Sustainability Consultant	Planning & Engineering for Sustainability
Karen Franz	Watershed Monitoring Program Director	San Diego CoastKeeper
Eric Larson	Executive Director	San Diego County Farm Bureau
Richard Pyle		San Diego Regional Chamber of Commerce
Shelby Tucker Alt: Keith Greer	Regional Planner	San Diego Association of Governments
Dr. Richard Wright Alt: Terressa Whitaker	Professor Emeritus of Geography	San Diego State University
Regulatory Agencies (Non-Voting)		
Dave Gibson		San Diego Regional Water Quality Control Board
Greg Krzys		U.S. Bureau of Reclamation
Tri-County FACC (Non-Voting)		
MaryAnne Skorpanich Alt: Marilyn Thoms	Director, OC Watersheds	County of Orange
Perry Louck	Director of Planning	Rancho California Water District

Table 2-3
RWMG Staff for IRWM Program

Organization	Staff	Title
County of San Diego	Jon Van Rhyn	Water Quality Program Manager
	Sheri McPherson	Land Use/Environmental Planner III
City of San Diego	Jeff Pasek	Watershed Manager
	Cathy Pieroni	Senior Water Resources Specialist
San Diego County Water Authority	Toby Roy	Water Resources Manager
	Mark Stadler	Principal Water Resources Specialist

The RAC has played a critical role in shaping and developing such key elements of the IRWM Plan as goals and objectives, long-term targets, the proposed institutional structure, and project prioritization. During IRWM Plan development, the RAC met on a monthly basis to review Plan progress and provide comments and guidance on key Plan elements. Additionally, the RAC guided the Region during development of its Proposition 50 Implementation Grant Application.

The RAC currently meets on a bi-monthly basis to provide guidance on upcoming IRWM planning and funding application activities. The RAC may be convened more frequently, as needed, for planning and funding proposals. **Section 5 of this RAP Application** provides a detailed discussion of the roles and responsibilities of the RAC.

Workgroups

Workgroups are formed, as needed, to enable participants in the IRWM program to work through particular topics and develop recommendations for the larger group. The RAC receives Workgroup recommendation(s) and subsequently makes its final recommendation(s) to the RWMG governing bodies. Workgroups members are nominated by the RAC and are not required to be RAC members; interested parties and members of the public are welcome given they have relevant experience and perspective to actively contribute to Workgroup decisions. Three Workgroups, described below, have been formed to date to support the IRWM program. Table 2-4 provides a listing of members in each Workgroup.

- **Proposition 50 Project Selection Workgroup**. This Workgroup was established to develop a package of water management projects for inclusion within the Proposition 50 Implementation Grant Application. The Workgroup determined that project evaluation should be based on how well the projects relate to the IRWM Plan (i.e. how well they accomplish Plan objectives and targets) and how well they can demonstrate integration with other projects. The Workgroup's final proposal package included 25 water management projects. (Note: The Proposition 50 grant package was ultimately reduced to 19 projects by project proponents (one dropped) and DWR, in collaboration with the RWMG and RAC.) Several representatives from each of the RAC functional areas were nominated to participate in the Workgroup.
- **Watershed Planning and Outreach Workgroup**. This Workgroup was formed to provide direction on outreach and coordination with watershed groups and disadvantaged communities (DACs). Workgroup objectives include development of guidance for watershed groups on identifying competitive multi-benefit projects for the IRWM grant cycle(s), identification of critical water supply and water quality needs for DACs within the Region's watersheds, and development of new strategies for stakeholder outreach and coordination. One representative from each of the Region's eleven hydrologic units was sought to join the Workgroup.

Table 2-4
Workgroup Membership

Member	Title	Organization
Proposition 50 Project Selection Workgroup		
Kirk Ammerman (Chair)	Deputy Director of Engineering	City of Chula Vista
Kathleen Flannery	Land Use and Environment Group Finance and HR Director	County of San Diego
Marsi Steirer	Deputy Director of Water Policy and Strategic Planning	City of San Diego
Bob Yamada	Water Resources Manager	San Diego County Water Authority
Dennis Bostad	General Manager	Sweetwater Authority
Rob Hutsel	Executive Director	San Diego River Park Foundation
Megan Johnson	Watershed Coordinator	Southern California Wetlands Recovery Network
Greg Krzys		U.S. Bureau of Reclamation
Karen Franz	Watershed Monitoring Program Director	San Diego CoastKeeper
Rob Roy		La Jolla Indian Reservation
Robyn Badger		San Diego Zoological Society
Watershed Planning and Outreach Workgroup		
Bill Simmons (Chair)	Director	San Dieguito River Valley Conservancy
Susan Varty	Director	Olivenhain Municipal Water District
Rob Hutsel	Executive Director	San Diego River Park Foundation
Katherine Weldon	Program Administrator	City of Encinitas
Karen Franz	Watershed Monitoring Program Director	San Diego CoastKeeper
Linda Flournoy	Sustainability Consultant	Planning & Engineering for Sustainability
Kimberly O'Connell		U.C. San Diego, Environmental Affairs
Todd Snyder	Land Use /Environment Planning Manager	County of San Diego
Rick Alexander		Sweetwater Authority
Sheri McPherson	Land Use/Environmental Planner III	County of San Diego
Mark Stadler	Principal Water Resources Specialist	San Diego County Water Authority
Cathy Pieroni	Senior Water Resources Specialist	City of San Diego

Interested Parties

In addition to announcing public workshops and other milestones through the Project Clean Water email list, the RWMG maintains an extensive email database of interested parties to the IRWM program (approximately 100 parties). Many of these interested parties are agencies with statutory authority over water management (see Section 2.3 below), including City of San Marcos, City of Oceanside, Rainbow MWD, Escondido Creek Conservancy, City of Vista, University of California-San Diego, Resource Conservation District of Greater San Diego County, Port of San Diego, and many others.

These interested parties participate in development and implementation of the IRWM Plan through attendance at RAC meetings and workshops, as well as submittal of public comments and one-on-one communication with RWMG and RAC members. Many of these interested parties have projects that were evaluated and prioritized for funding within the adopted IRWM Plan and/or Proposition 50 Implementation Grant application.

Through Project Clean Water and other regional outreach efforts, the RWMG has invited many of the known entities involved in water resources management in coastal San Diego to join the IRWM planning effort. However, developing Table 2-5 (on page 2-14) for this RAP Application brought to the RWMG's attention several smaller agencies who had not been contacted through previous outreach efforts. As a result, the RWMG is currently compiling an email invitation to those agencies to participate in the IRWM program. The San Diego IRWM program strives to be a collaborative process that involves all interested parties and individuals.

Tri-County FACC

The Upper Santa Margarita RWMG, San Diego RWMG, and South Orange County RWMG collaborate in an inter-regional body established via MOU and known as the Tri-County Funding Area Coordinating Committee (Tri-County FACC):

- **Riverside County Upper Santa Margarita RWMG** includes the following members: Riverside County Flood Control and Water Conservation District (RCFCWCD), County of Riverside, and Rancho California Water District (RCWD).
- **San Diego RWMG** includes the following members: City of San Diego, County of San Diego, and San Diego County Water Authority (SDCWA).
- **South Orange County RWMG** includes the following members: County of Orange, Municipal Water District of Orange County (MWDOC), and South Orange County Wastewater Authority (SOCWA).

The Tri-County FACC enables the three RWMGs to balance the necessary autonomy of each planning region to plan at the appropriate scale with the need to improve inter-regional cooperation and efficiency. It ensures close coordination of the three planning regions to improve the quality and reliability of water in the San Diego Funding Area. The three RWMGs will work together with their advisory groups to identify cross-boundary projects and common programs of value across planning regions and align project implementation. **Sections 5 and 8 of this RAP Application** provide further detail on the Tri-County FACC's planning and funding agreements.

The Tri-County FACC builds a foundation that ensures sustainable water resources planning within the Funding Area. The three RWMGs commit to coordinated planning within the Watershed Overlay Areas (see Figure 2-4) – one comprising the San Mateo Creek watershed area and the other the Santa Margarita River watershed area -- which cross planning region boundaries. This approach will capture the integration of water supply, wastewater, and watershed planning across regions in the three coordinated IRWMs.

Each of the Tri-County FACC members has prepared and adopted an IRWMP and desires close coordination to enhance the quality of planning, identify opportunities for supporting common goals and projects, and improve the quality and reliability of water in the San Diego Funding Area. The Tri-County FACC will coordinate and work together with their advisory groups to address issues and conflicts across planning regions, identify common objectives and projects that address those needs, and provide general planning cooperation for shared watersheds.

By consensus, the Tri-County FACC has developed an agreement to improve IRWM planning in the Funding Area to coordinate across planning region lines and facilitate the appropriation of funding for IRWM projects. **Section 5 of this RAP Application** outlines the Tri-County FACC's governance agreements.

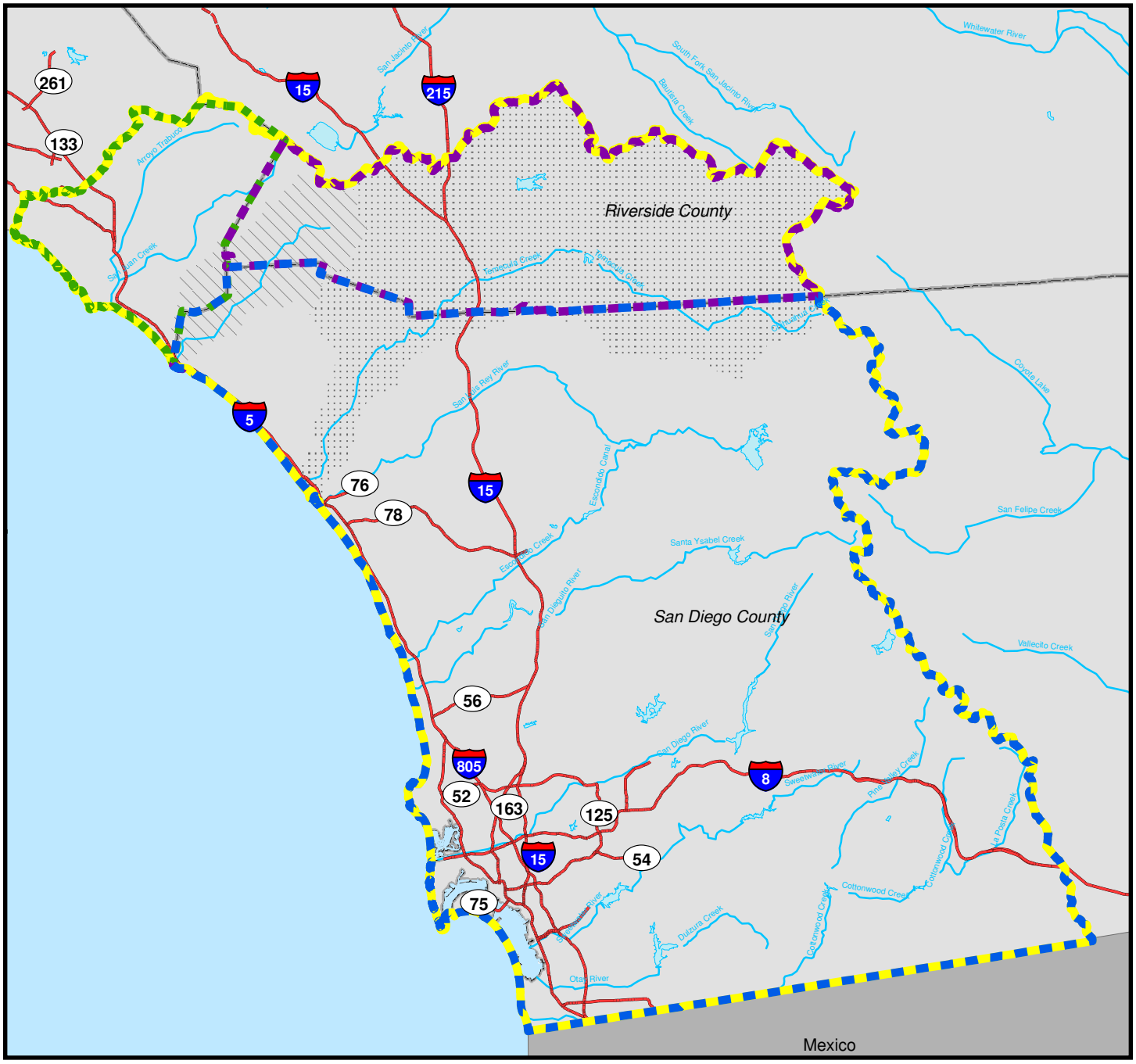
Sharing of Information

Tri-County FACC members collaborate on data sharing and program development both within the Funding Area and through inter-regional efforts. Key organizations that facilitate inter-regional planning include Metropolitan Water District of Southern California (Metropolitan), the Stormwater Monitoring Coalition (SMC), and the Regional Board.

The Tri-County FACC serves as an advisory body in the development of information and project concepts for the three IRWM Plan updates. Through the Tri-County FACC and the Watershed Overlay Subcommittee, the agencies will cooperate in identifying projects and programs that cross planning region boundaries. Overlay projects will benefit multiple planning regions and may be jointly funded, administered, or implemented. Overlay projects of importance to the Watershed Overlay Areas will be identified for coordination and due consideration in those planning regions' project selection processes.

Tri-County FACC members also collaborate in support of Metropolitan's drought and conservation programs. In response to three years of drought and severe water supply challenges, the Metropolitan Board of Directors (which comprises representatives of the member agencies) declaring a Water Supply Alert in Southern California and increased Metropolitan's water conservation efforts throughout its six-county service area. The Water Supply Alert urged cities, counties, local public water agencies and retailers to achieve extraordinary conservation by adopting and enforcing drought ordinances, accelerating public outreach and messaging, and developing additional local supplies.

Figure 2-4: Tri-County FACC Boundaries



Legend

- South Orange County Region
- Upper Santa Margarita Region
- San Diego IRWM Region
- Funding Area and Tri-County FACC Boundary
- Ocean
- Waterbody
- River
- Freeway
- County
- Mexico

Tri-County Overlay Area

- Santa Margarita
- San Mateo Canyon

N

0 2.5 5 10
Miles

RMC

Additionally, Tri-County FACC members are collaborating to address water quality concerns via the SMC. This group is comprised of all Phase I municipal stormwater NPDES lead permittees and NPDES regulatory agencies in southern California. RWMG members from each of the three planning regions are part of the SMC, including County of Orange, RCFCWPD, and County of San Diego. SMC members have combined resources to address data gaps and cooperate on developing technical information and tools to improve stormwater decision making, as well as improve monitoring effectiveness by promoting standardization and coordination across individual NPDES municipal programs.

Another example of collaboration and information sharing among Tri-County FACC regions is in the development of total maximum daily loads (TMDLs). RWMG members of the Upper Santa Margarita, San Diego, and South Orange County IRWM planning regions are participants in stakeholder groups with the San Diego Regional Board in development and implementation of various TMDLs as each goes through the TMDL Basin Plan amendment process.

Shared Infrastructure

Primary imported water supply infrastructure that serves the Funding Area is shared by all members of the Tri-County FACC. All agencies to varying extents depend on imported water supplied by Metropolitan from the Colorado River and State Water Project (SWP). While these sources are supplemented with groundwater and recycled water in many areas, imported water is a significant source of supply.

Metropolitan owns and operates the Colorado River Aqueduct (CRA), along with major reservoirs such as Diamond Valley Lake and Lake Skinner and major pipelines to move imported water to its member agencies. Diamond Valley Lake is a reservoir located at the northernmost portion of the upper Santa Margarita Watershed and is connected to Lake Skinner by the Southwestern Riverside County Multi-Species Reserve. Adjacent to Lake Skinner is MWD's Skinner Water Treatment Plant. Within the Funding Area, more than 4 million residents in Riverside and San Diego counties rely on treated imported water from the Skinner Water Treatment Plant. These shared facilities serve a critical role in bringing together water management interests from all three IRWM planning regions.

Further, the South Coast Water District shares use of pipelines with the Water Authority to convey supplies to the northernmost areas of Camp Pendleton. These shared facilities ensure delivery of imported water supplies to all Tri-County FACC members and their stakeholders.

Competing Interests

Historically, the entities in the Tri-County FACC suffered prolonged disagreement and litigation on water supply issues. With the legal settlements and agreements that have been developed over the past several years, members of the Tri-County FACC cooperatively manage water allocation on many levels. Significant agreement now exists on imported water allocation within the Funding Area and cooperative efforts to expand the storage and management of these resources are underway. Additionally, the Santa Margarita River Watershed Overlay Area is beginning to benefit from a very recent settlement on the Santa Margarita River which resolves longstanding claims to water rights by the Pechanga Band of Luiseno Indians. Significant funding for projects to benefit the upper and lower river areas were recently authorized and funded in the Federal Omnibus Lands Bill signed in March 2009. While individual areas within the Tri-County FACC indeed have competing local interests, recent settlements and the Tri-County FACC MOU itself attest to the willingness and capacity of the region to work together when fairness and certainty are documented.

2-3 Agencies with Statutory Authority

This section addresses the following Reviewer questions:

- *Is a listing of all local agencies within the regional boundary with statutory authority over water supply, water quality, water management, or flood protection provided?*

The agencies and organizations listed in the sections below participate in the IRWM program through the RAC, Workgroups, and public outreach activities. Although not a part of the formal RWMG management entity, these agencies and organizations play a critical role in the development and implementation of the IRWM Plan.

Section B (pages B-24 to B-28) of the IRWM Plan describes the water supply, wastewater, storm water, flood control, and environmental organizations within the Region. The following sections provide an overview of those agencies with statutory control over water. Table 2-5 (on page 2-14) provides a matrix of the statutory authority and/or interest of the agencies and organizations involved in water management in the Region.

Water Supply Agencies

As described in **Section B (pages B-24 to B-25) of the IRWM Plan**, water supply within the Region is predominantly imported water provided by the Water Authority, the sole water wholesale agency in San Diego County. In 2008, approximately 88 percent of the Region's water supply was imported. Seventy-six percent of this water – a blend of SWP and CRA supplies – was purchased by the Water Authority from Metropolitan. Metropolitan is a cooperative of 26 cities and water agencies serving 19 million people in six counties. The rest of the supply also came from the Colorado River, resulting from a conservation and transfer agreement between the Water Authority and Imperial Irrigation District (IID) and the lining by the Water Authority of the All-American and Coachella canals. As shown in Table 2-5, all major retail water agencies within the San Diego Region are members of the Water Authority, whose Board of Directors is governed by its member agencies. Figure 6-2 (**Section 6 of this RAP Application**) provides GIS mapping of the Water Authority member agencies and small water systems located within the Region.

In addition to being the Region's provider of imported water, the Water Authority serves as a regional water planning agency to coordinate regional water issues. In this role, the Water Authority assists member agencies (through financial, coordination, or planning support) in local water planning and project development, and serves as a forum for member agencies to discuss and address regional water issues. Most Water Authority member agencies maintain interagency agreements with adjoining member agencies to maximize conveyance flexibility and emergency response.

The rural eastern portion of the Region is outside of the Water Authority's service area. Water service within this eastern area is provided by either onsite private wells or by small community water systems or private water companies. As listed in Table 2-5, ten small water systems are operated by special districts or the County.

In addition, nearly 200 mutual water companies provide water service (derived from local groundwater supply) to small communities within the Region. Three of these water companies provide service to more than 200 customers, also listed in Table 2-5.

Tribal Nations within the Region are located on lands east of the Water Authority's service area and are dependent on local sources of water. However, two of the Tribal Nations – the Viejas and Sycuan Bands of the Kumeyaay Indians – are coordinating with the Water Authority to explore the potential for water supply delivery to reservation lands. Also, the Barona Band of Mission Indians has approached the City of San Diego to explore means of delivering City water supplies to the reservation via a proposed agreement that would transfer supplies from a Colorado River Tribal Nation to San Vicente Reservoir.

Wastewater Agencies

As described in **Section B (pages B-26 to B-27) of the IRWM Plan**, various municipalities and special districts provide wastewater service within the urbanized portion of the Region. Water Authority member agencies that also provide wastewater and/or reclamation services within their service area are listed in Table 2-5. Figure 6-3 (**Section 6 of this RAP Application**) provides GIS mapping of the wastewater agencies and sanitation districts located within the Region.

The Region's urban wastewater agencies have organized – both through the formation of joint powers authorities (JPAs) and through interagency contracts – into five multi-jurisdictional wastewater systems based around the Region's five deep-water ocean outfalls.

1. FPUD and Camp Pendleton (southern portion of the base) have connected to the City of Oceanside system (via contract) to form one regional wastewater system. The northern portion of Camp Pendleton is served by small wastewater treatment systems that percolate treated wastewater into Camp Pendleton's groundwater.
2. The City of San Diego and U.S. Boundary and Water Commission (which treats wastewater originating in Tijuana, Mexico) form another regional wastewater system.
3. Encina Wastewater Authority is a JPA comprised of the Buena Sanitation District, City of Carlsbad, City of Encinitas, Leucadia County Water District, Vallecitos Water District, and City of Vista.
4. San Elijo JPA is comprised of the City of Solana Beach, Cardiff Sanitation District, and Rancho Santa Fe CSD.
5. Metropolitan Wastewater JPA is comprised of the City of Coronado, City of Del Mar, City of El Cajon, City of Imperial Beach, City of La Mesa, City of National City, City of Poway, City of San Diego, Lemon Grove Sanitation District, Padre Dam MWD, Otay Water District, Alpine Sanitation District, Lakeside Sanitation District, Spring Valley Sanitation District, and Winter Gardens Sewer Maintenance District. (Note: the City of Chula Vista is not a member of the JPA but receives wastewater service through the Metro System.)

In addition to the above five regional systems, special service districts exist to provide wastewater service to the communities of Whispering Palms, Valley Center, and Pauma. Sanitation districts operated by the County provide wastewater service to such inland communities as Julian, Pine Valley, and Campo. Local Tribes provide wastewater service within their respective reservation boundaries. Wastewater service outside of these districts is provided by onsite wastewater (septic) systems.

Flood Control and Stormwater Agencies

As described in **Section B (page B-27) of the IRWM Plan**, the San Diego County Flood Control District (Flood Control District) is the key flood control agency in the County. The Flood Control District (which is governed by the elected Supervisors of the County) establishes flood policies, maintains flood control facilities, operates a regional flood warning system, and is charged with protection of watercourses, watershed management, and protection of water quality. On a project-by-project basis, the Flood Control District coordinates flood control actions among the County's municipalities, federal and state agencies, watershed management groups, and flood control organizations in Orange and Riverside counties. Each municipality is responsible for designing, constructing, and maintaining necessary flood control structures within its jurisdiction.

As described above, the San Diego County MS4 Permit (Order No. R9-2007-0001) regulates stormwater/urban runoff within the Region. The County acts as Principal Copermittee for the 21 Copermittees listed below. Each Copermittee is responsible for operating its own stormwater/urban runoff management program within its respective jurisdiction. As Principal Copermittee, the County coordinates the development and implementation of regional stormwater monitoring programs, regional education program, the standard urban stormwater mitigations plan criteria and requirements, and the hydromodification management plan. In this role, the County has organized the Stormwater Copermittee Management Committee to facilitate interaction and coordination among the Copermittees.

Further, based on their work on the *La Jolla Shores Coastal Watershed Management Plan*, the City of San Diego, University of California-San Diego, and Scripps Institute of Oceanography participate in the IRWM program with the perspective of a stormwater discharger within a sensitive marine habitat.

Environmental Management Organizations

As described in **Section B (page B-28) of the IRWM Plan**, many private foundations and conservancies have been established within the Region to preserve lands and to provide environmental management of conserved lands. Foundations or conservancies that provide environmental management of lagoons are listed in Table 2-5. The San Diego Conservation Resources Network is a network that assists in coordinating efforts among the Region's conservancy groups.

Resource conservation districts (RCDs), which are local government special districts, support environmental management through surveys and research, property acquisition, technical assistance to property owners, and project implementation. Conservancy groups and other local non-profits are also active in habitat protection and restoration activities. Groups involved in conservation and environmental management within the Region are also listed in Table 2-5.

Table 2-5
Agencies and Organizations Involved in Water Management in the San Diego IRWM Region

Agency	Authority or Interest					Watershed(s)	Level of IRWM Participation		
	Water [1]	Wastewater [2]	Land Use/Planning [3]	Stormwater/Flood [4]	Environment/Resources [5]		RAC or Workgroup	Stakeholder List	Contacted [20]
Agua Hedionda Lagoon Foundation					I	Carlsbad			E
Alpine Sanitation District		C				San Diego, Sweetwater			E
Back Country Land Trust					I	San Diego, Sweetwater			E
Batiquitos Lagoon Foundation					I	Carlsbad			E
Bonsall Conservancy					I	San Luis Rey			E
Buena Vista Lagoon Foundation					I	Carlsbad			E
California Coastal Conservancy					I	All			o
California Department of Fish and Game					P	All			o
California Department of Water Resources	W					All		o	o
Carlsbad Municipal Water District	R(w)					Carlsbad			E
City of Carlsbad		M(6)	D	P(7)		Carlsbad			o
City of Chula Vista		M	D	P(7)		Sweetwater, Otay	o	o	o
City of Coronado		M	D	P(7)		Otay			o
City of Del Mar	R(w)	M	D	P(7)		San Dieguito, Peñasquitos			o
City of El Cajon		M	D	P(7)		San Diego, Sweetwater			o
City of Encinitas			D	P(7)		Carlsbad	o	o	o
City of Escondido	R(w)	M	D	P(7)		San Luis Rey, Carlsbad, San Dieguito			o
City of Imperial Beach		M	D	P(7)		Otay, Tijuana			o
City of La Mesa		M	D	P(7)		San Diego, Pueblo, Sweetwater			o
City of Lemon Grove			D	P(7)		Pueblo, Sweetwater			o
City of National City (8)		M	D	P(7)		Pueblo, Sweetwater, Otay			o
City of Oceanside	R(w)	M	D	P(7)		Santa Margarita, San Luis Rey, Carlsbad		o	o
City of Poway	R(w)	M	D	P(7)		San Dieguito, Peñasquitos, San Diego			o
City of San Diego (9)	W/R (w)	M	D	P(7)		San Dieguito, Peñasquitos, San Diego, Pueblo, Sweetwater, Otay, Tijuana	o	o	o
City of San Marcos			D	P(7)		Carlsbad		o	o
City of Santee			D	P(7)		San Diego			o
City of Solana Beach			D	P(7)		Carlsbad, San Dieguito			o
City of Vista		M	D	P(7)		San Luis Rey, Carlsbad		o	o
Cottonwood Creek Conservancy				P(7)	I	Carlsbad			E
County of San Diego		C	D	P(7)	P	All	o	o	o
Cuyamaca Water District	R					San Diego			E
Descanso Community Services District	R	M				Sweetwater			E

Table 2-5
Agencies and Organizations Involved in Water Management in the San Diego IRWM Region

Agency	Authority or Interest					Watershed(s)	Level of IRWM Participation		
	Water [1]	Wastewater [2]	Land Use/Planning [3]	Stormwater/Flood [4]	Environment/Resources [5]		RAC or Workgroup	Stakeholder List	Contacted [20]
East Otay Mesa Sewer MD		M				Otay, Tijuana			E
Encina Wastewater Authority (10)		M(6)				Carlsbad			E
Escondido Creek Conservancy					I	Carlsbad		o	o
Fairbanks Ranch Community Services District		M(6)				San Dieguito			E
Fallbrook Land Conservancy					I	Santa Margarita			o
Fallbrook Public Utility District	R(w)	M(6)				San Juan, Santa Margarita, San Luis Rey	o	o	o
Farm Bureau of San Diego County	I					All	o	o	o
Greater San Diego County Resource Conservation District (11)	I		I		I	All			o
Groundwork San Diego-Chollas Creek					I	Pueblo			o
Helix Water District (12)	R(w)					San Diego, Pueblo, Sweetwater	o	o	o
International Boundary and Water Commission	I	I	I	I	I	Tijuana			E
Iron Mountain Conservancy					I	San Diego, Peñasquitos			o
Julian Community Services District	R	M				San Dieguito, San Diego			E
Julian Sanitation District		C				San Diego			E
Lakeside River Park Conservancy					I	San Diego			o
Lakeside Water District	R(w)					San Diego			o
Lakeside Sanitation District		C				San Diego			E
Leucadia Wastewater District		M(6)				Carlsbad			E
Los Peñasquitos Lagoon Foundation					I	Peñasquitos			E
Majestic Pines Community Services District	R					San Diego			E
Metropolitan Water District of Southern California (13)	W					All		o	o
Mission Resource Conservation District (11)	I		I		I	Santa Margarita, San Luis Rey	o	o	o
Mission Trails Regional Park Foundation			I		I	San Diego			o
Mootamai Municipal Water District	R					San Luis Rey			E
Morro Hills Community Services District		M				San Luis Rey			E
Olivenhain Municipal Water District (14)	W/R (w)					Carlsbad, San Dieguito	o	o	o
Otay Water District (15)	W/R (w)	M				San Diego, Sweetwater, Otay, Tijuana			E
Padre Dam Municipal Water District (15, 16)	W/R (w)	M(6)				San Diego, Sweetwater	o	o	o
Pauma Valley Community Services District	R	M				San Luis Rey			E
Pine Hills Mutual Water Company	R					San Diego			E
Pine Valley Mutual Water Company	R					Tijuana			E
Pine Valley Sanitation District		C				Tijuana			E
Preserve Calavera					I	Carlsbad			E

Table 2-5
Agencies and Organizations Involved in Water Management in the San Diego IRWM Region

Agency	Authority or Interest					Watershed(s)	Level of IRWM Participation		
	Water [1]	Wastewater [2]	Land Use/Planning [3]	Stormwater/Flood [4]	Environment/Resources [5]		RAC or Workgroup	Stakeholder List	Contacted [20]
Questhaven Municipal Water District	R					Carlsbad			E
Rainbow Municipal Water District (15)	W/R (w)	M				Santa Margarita, San Luis Rey		o	o
Ramona Municipal Water District	R	M				San Dieguito, San Diego			o
Rancho Pauma Mutual Water Company	R					San Luis Rey			E
Rancho Santa Fe Community Services District		M				Carlsbad, San Dieguito			E
Rincon Del Diablo Municipal Water District (15)	R(w)					Carlsbad, San Dieguito			o
Rincon Ranch Community Services District		M				San Luis Rey			E
SANDAG			I			All	o	o	o
San Diego CoastKeeper					I	All	o	o	o
San Diego County Flood Control District (17)				P		All			o
San Diego County Water Authority	W					All	o	o	o
San Diego County Regional Airport Authority				P(7)		All			o
San Diego Unified Port District			D	P(7)		Pueblo, Sweetwater, Otay		o	o
San Diego Regional Chamber of Commerce			I			All	o	o	o
San Diego Regional Water Quality Control Board	I	P(18)		P	P	All	o	o	o
San Diego River Conservancy					I	San Diego			o
San Diego River Park Foundation					I	San Diego	o	o	o
San Diego Zoological Society			I	I	I	San Dieguito, Pueblo		o	o
San Dieguito River Valley Land Conservancy					o	San Dieguito	o	o	o
San Dieguito Water District (19)	R(w)					Carlsbad			E
San Elijo Joint Powers Authority		M(6)				Carlsbad, San Dieguito	o	o	o
San Elijo Lagoon Conservancy					I	Carlsbad	o	o	o
Santa Fe Irrigation District	R(w)					Carlsbad, San Dieguito	o	o	o
South Bay Irrigation District (8)						Sweetwater, Otay			E
Southern California Wetlands Recovery Project					I	All	o	o	o
Spring Valley Sanitation District		C				San Diego, Sweetwater			E
Sweetwater Authority	R(w)					Sweetwater, Otay	o	o	o
The Nature Conservancy					I	All	o	o	o
Tribal Reservation(s)	I	I	D	P		San Luis Rey, San Dieguito, San Diego, Sweetwater, Tijuana	o	o	o
Trust for Public Land					I	All			o
Universities (UCSD, SDSU, etc)			D	P		All	o	o	o
Upper San Luis Rey Resource Conservation	R		I		I	San Luis Rey			E

Table 2-5
Agencies and Organizations Involved in Water Management in the San Diego IRWM Region

Agency	Authority or Interest					Watershed(s)	Level of IRWM Participation		
	Water [1]	Wastewater [2]	Land Use/Planning [3]	Stormwater/Flood [4]	Environment/Resources [5]		RAC or Workgroup	Stakeholder List	Contacted [20]
District (12)									
U.S. Bureau of Land Management			D			All			E
U.S. Bureau of Reclamation	W	I		P		All	o	o	o
U.S. Fish and Wildlife Service					P	All			o
U.S. Forest Service, Cleveland National Forest			D			San Juan, Santa Margarita, San Luis Rey, San Dieguito, San Diego, Sweetwater, Tijuana			o
U.S. Marine Corps Camp Pendleton	R(w)	M	D	I		San Juan, Santa Margarita, San Luis Rey			o
Vallecitos County Water District	W/R (w)	M(6)				San Luis Rey, Carlsbad			o
Valley Center Municipal Water District (15)	W/R (w)	C				San Luis Rey, Carlsbad, San Dieguito			E
Valley Center Parks & Rec		M				San Luis Rey			E
Vista Irrigation District	R(w)					San Luis Rey, Carlsbad			o
Whispering Palms Community Services District		M				San Dieguito			E
Winter Gardens Sewer MD		M				San Diego			E
Wynola Water District	R					San Dieguito			E
Yuima Municipal Water District	R(w)					San Luis Rey			E

1. Water agency or districts with statutory authority over the delivery and/or treatment of water supplies. Wholesale water purveyors are denoted with a "W" and Retail water purveyors with an "R". Members of the Water Authority are further denoted with an (w). Other entities with a vested interest in local water supplies are denoted with a "I".

2. Wastewater service providers are differentiated between County Sanitation Districts formed under Sections 4700-4859 of the Health and Safety Code and municipal sewer providers or community services districts, which were formed through agency reorganizations, agreements, and/or City incorporations. County Sanitation Districts are denoted by a "C" and municipal sewer providers or community service districts are denoted by a "M'. Other entities with a vested interest in local wastewater collection, treatment, and/or disposal are denoted with a "I".

3. Jurisdictions with discretionary authority over local land use decisions are denoted with a "D". All other agencies with an interest in local land use decisions are denoted with an "I".

4. Agencies with permitting authority related to stormwater runoff and/or flooding are denoted with a "P". Other entities with an interest in stormwater and/or flooding are denoted with an "I".

5. Agencies with permitting authority over environmental resources are denoted with a “P”. Other entities with an interest in local environmental resources are denoted with a “I”.

6. Wastewater service providers with recycled water facilities.

7. Entities subject to Order No. 2001-01, NPDES No. CAS0108758, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District.

8. City of National City and South Bay Irrigation District together form the Sweetwater Authority, which provides water supply to both service areas.

9. The City of San Diego entered the municipal water supply business in 1901 when the City bought the water system from a

Table 2-5
Agencies and Organizations Involved in Water Management in the San Diego IRWM Region

Agency	Authority or Interest					Watershed(s)	Level of IRWM Participation		
	Water [1]	Wastewater [2]	Land Use/Planning [3]	Stormwater/Flood [4]	Environment/Resources [5]		RAC or Workgroup	Stakeholder List	Contacted [20]

private company. In addition to supplying more than 250,000 metered service connections within its own incorporated boundaries, the City of San Diego conveys and sells potable water to the City of Del Mar, the Santa Fe Irrigation District, San Dieguito Water District, and the California American Water Company, which, in turn, serves the Cities of Coronado and Imperial Beach and portions of south San Diego.

10. Encina Wastewater Authority is owned by six public agencies in a unique arrangement called a Joint Powers Agreement. The six owners are: the City of Carlsbad, City of Vista, City of Encinitas , Vallecitos Water District, Buena Sanitation District, and the Leucadia Wastewater District.

12. Under Division 9 of the California Public Resources Code, RCDs are permitted to function to a certain degree as enterprise districts because they are empowered to charge reasonable fees for services rendered to individuals.

13. Formed under the Metropolitan Water District Act of 1927.

13. District authorized by Water Code 20500 et seq.

14. The Olivenhain MWD was incorporated in 1959 under the provisions of the California Municipal Water District Act of 1911 to provide potable water to its customers.

15. District authorized under Water Code 71000 et seq.

16. District is a contract agency with METRO.

17. The San Diego County Water Authority was formed in 1944 by the California State Legislature, and operates under the County Water Authority Act as a water wholesaler to its 23 member agencies in the San Diego region.

18. The Regional Board maintains regulatory permitting authority under the Clean Water Act and Porter Cologne Act for wastewater discharges to land and water.

19. When the City of Encinitas incorporated in 1986, the SDWD became a subsidiary district, which is governed by the City Council sitting as the SDWD Board of Directors.

20. Developing Table 2-5 brought to the RWMG's attention several smaller agencies who had not been contacted through previous outreach efforts. As a result, the RWMG is currently compiling an email invitation to those agencies -- denoted with an "E" -- to participate in the IRWM program. The San Diego IRWM program strives to be a collaborative process that involves all interested parties and individuals.

2-4 Working Relationships in the Region

This section addresses the following Reviewer questions:

- *Do the members and groups appear to have good working relationships?*
- *Do they exchange information on water management issues? Do they share any facilities or infrastructure?*
- *Are there any competing interests or conflicting policies among the members that may affect integrated water planning and management?*

The San Diego Region agencies and organizations identified above maintain a robust network of working relationships due to information sharing, collaboration on shared projects or programs, and mutual support for regional water management goals. A description of the issues and conflicts within the Region is included in **Section 7 of this RAP Application**.

To facilitate effective planning, IRWM partnerships have been formed between agencies in the Region as described on **Section N (pages N-11 to N-12) of the IRWM Plan**. The RWMG is the three-party partnership between the City, County, and Water Authority, formalized by the signing of an MOU. The RAC is an informal partnership of 29 agencies and organizations representing all areas of water management in the Region. RAC members and interested parties have and will continue to work together through the IRWM program to identify common goals and objectives, prioritize regional needs, and reach consensus on water management strategies given the Region's unique conditions. This high level of collaboration, facilitated by bi-monthly RAC meetings, has built trust and camaraderie among agencies, organizations, and the public who had not typically interacted prior to establishment of the IRWM program.

Planning and Collaboration

The Region features numerous partnerships involving water resources planning, data sharing, and collaboration. The following are a few examples:

- The San Diego County Water Authority has 24 member agencies (**page A-6 of the IRWM Plan**). Together, the member agencies serve approximately 98 percent of the population in San Diego County.
- The County of San Diego acts as Principal Copermittee for the regional MS4 Permit, which includes 18 municipalities, the San Diego Unified Port District, and the San Diego County Regional Airport Authority (**page A-7 of the IRWM Plan**).
- The Water Authority is implementing conservation partnerships with its 24 member agencies, Cuyamaca College's Water Conservation Garden, Metropolitan, and San Diego Gas and Electric (**page B-70 of the IRWM Plan**).
- Watershed management planning efforts (**Table M-3 of the IRWM Plan**) have been developed as cooperative efforts among the County, regional municipalities, regulatory agencies, private foundations and conservancies, and watershed stakeholders. These include the following watershed planning and coordination groups: Camp Pendleton, Santa Margarita WURMP Workgroup, Carlsbad Watershed Network, Carlsbad WURMP Workgroup, San Luis Rey Watershed Council, San Luis Rey WURMP Workgroup, San Dieguito River Watershed Stewardship Initiative Group and San Dieguito Watershed Technical Advisory Committee, San Dieguito River Park, San Dieguito WURMP Workgroup, Peñasquitos WURMP, Mission Bay and La Jolla WURMP Workgroup, San Diego River Watershed Workgroup, San Diego River Watershed Forum, 606 Studio's Conceptual Plan, San Diego River WURMP Workgroup, San Diego Bay WURMP Workgroup, Sweetwater Authority, Bi-national Watershed Advisory Committee, and Tijuana WURMP Workgroup.
- The La Jolla Shores Watershed Management Group (WMG) – comprised of Scripps Institute of Oceanography, University of California San Diego, the City of San Diego, and San Diego CoastKeeper – developed an Integrated Coastal Water Management Plan that will be integrated into the San Diego IRWM Plan update to help manage the Region's coastal water resources (**page M-9 of the IRWM Plan**). The WMG was originally formed in 2005 to collaboratively address ASBS protection issues in the Region.
- The Southern California Wetlands Recovery Project (SCWRP) is a partnership of 18 state and federal agencies working cooperatively with local government, business, and non-profit organizations to acquire, restore, and enhance coastal wetlands in Southern California. The San Diego County Task Force, a subgroup of SDWRP, serves a coordinating role for the Region's stakeholders (**page M-10 of the IRWM Plan**).
- Development of the IRWM Plan was closely coordinated with a number of land-use decision makers through their active involvement in the process, including the City of San Diego Planning Department, County of San Diego Board of Supervisors, City of San Diego Mayor and City Council, City of Chula Vista, and San Diego Association of Governments (SANDAG) (**page M-17 of the IRWM Plan**).
- Coordination on IRWM Plan implementation will include the following groups: the San Diego Regional Board, State Water Resources Control Board (State Board), California Department of Water Resources (DWR), California Department of Public Health, California Environmental Protection Agency (CalEPA), California Department of Fish and Game (CDFG), California State Parks, California Department of Forestry, California Coastal Conservancy, California Department of Transportation, California Coastal

Commission, California State Lands Commission, U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service, U.S. Army Corps of Engineers, U.S. Geological Survey (USGS), U.S. Bureau of Land Management, U.S. Forest Service, National Resources Conservation Service, U.S. Bureau of Reclamation, U.S. Department of Navy, U.S. Marine Corps, and Bureau of Indian Affairs (**pages O-2 to O-6 of the IRWM Plan**).

- The Southern California Coastal Water Research Project (SCCWRP) is a JPA that was formed in 1969 to conduct coastal ecosystem research and monitoring. SCCWRP includes 14 member agencies that represent a unique partnership between municipalities with responsibilities for water quality management and aquatic protection in the Southern California Bight, including: the State Board, USEPA, Ocean Protection Council, Los Angeles Regional Board, Santa Ana Regional Board, San Diego Regional Board, City of Los Angeles, Los Angeles County Sanitation Districts, Orange County Sanitation District, City of San Diego, Ventura County Watershed Protection District, Los Angeles County Department of Public Works, Orange County Public Works, and County of San Diego.
- The Water Authority partners with local RCDs on education and outreach for water conservation, while the County partners with RCDs on education and outreach for stormwater management and pollution prevention.
- SANDAG, comprised of the County and 18 incorporated municipalities, is the regional planning agency responsible for generating the regional growth projections upon which the Water Authority and member agencies base their UWMP demand calculations. These regional growth projections are an essential component of water resources planning in the Region.
- The County's Flood Control ALERT system extends across the U.S.-Mexico border to characterize rainfall distribution and identify flood problem areas within the Tijuana River watershed. The San Diego County ALERT system and Tijuana Storm Warning system have merged into a common real-time database with equal access by both nations.

Shared Infrastructure

There are also multiple partnerships involving shared water management infrastructure and facilities within the Region. The following are a few examples:

- As a member agency of Metropolitan, the Water Authority contributes to the construction, operation, and maintenance of imported water infrastructure conveying SWP and CRA supplies to the Region.
- The Water Authority's five large-diameter pipelines that run north to south in its service area – along with associated facilities – provide water to its 24 member agencies, which in turn serve 3 million people.
- The City of San Diego provides water to customers within the cities of San Diego, Del Mar, Coronado and portions of National City, Chula Vista and Imperial Beach (**page A-7 of the IRWM Plan**).
- The Region's urban wastewater agencies have organized into five multi-jurisdictional wastewater systems based around the Region's five deep-water ocean outfalls (**page B-26 of the IRWM Plan**).
    - FPUD and Camp Pendleton (southern portion of the base) have connected to the City of Oceanside system.
    - The City of San Diego and U.S. Boundary and Water Commission (which treats wastewater originating in Tijuana, Mexico) work collaboratively.
    - Encina Wastewater Authority is a JPA comprised of the Buena Sanitation District, City of Carlsbad, City of Encinitas, Leucadia County Water District, Vallecitos Water District, and City of Vista.
    - San Elijo JPA is comprised of the City of Solana Beach, Cardiff Sanitation District, and Rancho Santa Fe Community Services District.
    - Metropolitan Wastewater JPA is comprised of the City of Coronado, City of Del Mar, City of El Cajon, City of Imperial Beach, City of La Mesa, City of National City, City of Poway, City of San Diego, Lemon Grove Sanitation District, Padre Dam MWD, Otay Water District, Alpine

Sanitation District, Lakeside Sanitation District, Spring Valley Sanitation District, and Winter Gardens Sewer Maintenance District.

- San Dieguito Water District and Sante Fe Irrigation District jointly own and operate the 883 acre-foot San Dieguito Reservoir. The Water Authority and Olivenhain MWD jointly own and operate the 24,364 acre-foot Olivenhain Reservoir (**Table B-22 of the IRWM Plan**).
- City of Escondido and Vista Irrigation District jointly own and operate the 75 MGD Escondido/Vista Treatment Plant. San Dieguito Water District and Santa Fe Irrigation District jointly own and operate the 40 MGD Badger Treatment Plant (**Table B-23 of the IRWM Plan**).
- The $1.5 billion ESP is a partnership between the Water Authority, the City of San Diego, and Olivenhain MWD to ensure provision of water supply during imported water interruptions. The ESP involves construction of the Olivenhain dam, pipelines, and pump station; expansion of San Vicente dam and construction of a new pipeline and pump stations; and construction of Lake Hodges pipeline and pump stations (**page B-60 of the IRWM Plan**).
- A public-private partnership between the City of Carlsbad and Poseidon Resources involves construction of a 50 MGD seawater desalination plant at the Encina Power Station in Carlsbad. Nine water agencies have entered into long-term water purchase agreements with the Carlsbad desalination plant, including Carlsbad MWD, Valley Center MWD, Rincon del Diablo MWD, Sweetwater Authority, Rainbow MWD, Sante Fe Irrigation District, Vallecitos WD, Olivenhain MWD, and City of Oceanside.
- The Water Authority and Otay Water District are partners in the U.S./Mexico Emergency Connection project, which involved construction of 200 feet of 24” diameter pipeline and associated facilities that deliver up to 14,400 AFY of CRA supplies to Mexico. The IBWC funded design and construction of the project, while Mexico pre-pays for water supplies. Metropolitan, the Water Authority, and Otay Water District all own and operate the conveyance pipelines that deliver Mexico’s emergency supplies under this program.

Project Partnerships

In addition to those listed above, agencies and organizations across the Region submitted more than 160 projects addressing a wide variety of water management needs for the IRWM Plan and Proposition 50 Implementation Grant Application. **Section F (pages F-6 through F-19) of the IRWM Plan** describes the prioritization process established to help manage the project list and to determine which projects best meet the identified needs of the Region. A vast majority of these 160 projects were developed and refined by partnerships between multiple local agencies and organizations.

For example, Table 2-6 below lists the projects prioritized for the Region’s Proposition 50 Implementation Grant Application that demonstrates the use of partnerships in developing water management projects.

Table 2-6
Partnerships Highlighted in Proposition 50 Implementation Grant Projects

Project	Implementing Agency	Project Description	Project Partners
Recycled Water Retrofit Assistance Program	San Diego County Water Authority	The Program will provide direct financial assistance to homeowners' associations, public agencies, and other customer types to facilitate the conversion from potable to recycled water for landscape irrigation and other uses. The project will target approximately 40 sites throughout the Water Authority service area which will allow approximately 2,000 AFY of additional recycled water to be used.	Valley Center MWD Carlsbad MWD City of San Diego Lakeside Water District San Dieguito Water District Santa Fe Irrigation District
Carlsbad Desalination Project Local Conveyance	Olivenhain Municipal Water District	The Project will provide 56,000 AFY of new water supply for the Region through the design and construction of pipelines and facilities to serve water from the Carlsbad Desalination Plant. The project will provide the participants with a secure and reliable water supply for 30 years with two possible 30-year extensions. Benefits include a local source of potable water, improved water supply reliability, and improved water quality.	Carlsbad MWD City of Oceanside Olivenhain MWD Vallecitos Water District Vista Irrigation District Santa Fe Irrigation District
San Diego Region Four Reservoir Intertie Project Conceptual Design	Sweetwater Authority	The Conceptual Design will provide an initial design and work plan for a conveyance system that will increase the capability to manage and store imported water in four existing reservoir systems (San Vicente, El Capitan, Loveland, and Murray Reservoir systems), making the San Diego Region more resistant to drought and water delivery service interruptions.	Padre Dam MWD Helix Water District City of San Diego City of Poway
South San Diego County Water Supply Strategy	Sweetwater Authority	The Strategy investigates the sustainable use of the San Diego Formation (SDF). The Strategy will provide an integrated, comprehensive and balanced approach by public water agencies for sustainable use and management of the apparently vast groundwater resources of the SDF, a natural underground aquifer that lies deep below the central and south San Diego Bay area.	City of San Diego Otay Water District Water Authority Helix Water District National City City of Chula Vista
Santee Water Reclamation Facility Expansion and El Monte Valley Groundwater Recharge and River Restoration	Padre Dam MWD and Helix Water District	The Facility Expansion includes the design and construction of facilities necessary to expand the Title 22 treatment capacity from 2 MGD to 4 MGD. The Groundwater Recharge and River Restoration would recharge the El Monte Valley Basin using highly treated recycled water, raise the groundwater level to support habitat restoration, and subsequently withdraw up to 2,240 AFY of groundwater to supply the R.M. Levy Water Treatment Plant. Partnership between Padre Dam MWD and Helix Water District will utilize the increased recycled water production made available for recharge of the El Monte Valley Basin. When complete, the ultimate benefits of these combined projects will include 5,000 AFY of new water and a reduction in the amount of future capacity upgrades necessary at the Point Loma Wastewater Treatment Plant.	San Diego County Water Authority Lakeside Water District City of San Diego County of San Diego El Capitan Golf Club Endangered Habitats Conservancy

2-5 References

San Diego Regional Chamber of Commerce Economic Research Bureau and County of San Diego. 2007. Regional Economic Indicators Project.

City of San Diego Water Department. 2005. 2005 Urban Water Management Plan.

City of San Diego, Metropolitan Wastewater Department. 2007a. Metropolitan Wastewater Department website. Available: http://www.sandiego.gov/mwwd/general/history.html.

City of San Diego. 2009. City of San Diego Stormwater Pollution Prevention Program website. Available: http://www.sandiego.gov/stormwater/.

3 Stakeholder Outreach and Coordination

The San Diego Region has developed an extensive public outreach and participation process to ensure all relevant stakeholders are engaged in the IRWM planning process. Additionally, the RWMG has undertaken targeted outreach to DACs. Based on review and understanding of the DACs and their critical water supply and water quality needs, the RWMG has developed an outreach process that addresses those challenges.

Section N (Pages N-3 to N-16) of the IRWM Plan describes methods and processes used to facilitate stakeholder participation. In addition to continuing to actively engage the RAC in the IRWM planning process, the RWMG has implemented measures aimed at engaging other interested parties (not represented on the RAC), as well as the general public. Building understanding and support for the IRWM program among key stakeholders and the general public is critical to the success of the Plan. Meeting summaries which document stakeholder participation are provided in **Appendix 14 of the IRWM Plan** and on the IRWM website (www.sdirwmp.org).

Environmental justice concerns, addressed in **Section N (pages N-6 to N-7) of the IRWM Plan**, include toxic hot spots in the Pueblo Hydrologic Unit, which contains a significant proportion of DACs, and the need to develop watershed management plans for watersheds that lack adequate resources. Two organizations (CoastKeeper and SCWRP) have coordinated with the RWMG in order to address environmental justice issues and incorporate applicable information into the IRWM Plan.

Existing outreach mechanisms – utilizing the RWMG, RAC, website, email, and public workshops – will continue to be employed as a means for ongoing outreach efforts during Plan implementation. Additional efforts will be focused on engaging a broad-based active membership to promote diverse approaches to IRWM planning and implementation, as well as targeted outreach (for example, to small water systems that serve rural DACs). This inclusive approach will help to maintain a coordinated and balanced process as regional issues and priorities evolve over time.

3-1 Stakeholder Identification and Coordination

This section addresses the following Reviewer questions:

- *Does the list of stakeholders appear to be inclusive?*
- *Do the listed stakeholders provide a balanced representation of the water issues in the region?*
- *Does the submittal describe how stakeholders, including DACs, are identified and invited to participate?*

A list of stakeholders actively involved in IRWM program was included in **Appendix 14 of the IRWM Plan** and updated in **Section 2.2 of this RAP Application**. Substantial outreach to new stakeholders, interested parties, and DACs has occurred since adoption of the Plan. Implementation of the *Public Outreach and Disadvantaged and Environmental Justice Community Involvement Plan* (2007) has enabled broad public support for the water management projects included in the Proposition 50 Implementation Grant Application and the ongoing IRWM program activities.

As described in **Section N (pages N-3 to N-6) of the IRWM Plan**, stakeholder participation was initially coordinated primarily through Project Clean Water. Project Clean Water is comprised of several working groups and advisory committees that discuss issues of shared concern, find consensus solutions to priority problems, and characterize water quality conditions within the Region's watersheds. More than 830 people throughout the Region have participated in Project Clean Water activities, and the RWMG has effectively leveraged the sizeable Project Clean Water database to announce IRWM planning activities to members of the public and related organizations.

Aside from the Project Clean Water forum, each of the three RWMG agencies have compiled and maintained internal lists of interested parties and stakeholders associated with the various areas of water quality, water supply, and natural resources. These interest groups were formed through participation at various forums and venues over the past seven or more years. Each agency participates in and hosts regular meetings, workshops, and summits which draw an attendance from various types of interest groups including: water supply agencies, wastewater

agencies, non-profit organizations, water quality monitoring groups, watershed groups, communities, and stormwater Copermittees. Stakeholder lists from each of the RWMG agencies were then combined with the Project Clean Water stakeholder list to form the initial interest group.

Several stakeholders were further identified by RAC members as necessary additions to the IRWM planning process. As a result of this input, a representative from the Farm Bureau of San Diego County was included as a RAC member, the U.S. Bureau of Reclamation and Regional Board were added as advisory agencies, and representatives from adjacent Tri-County FACC planning regions (County of Orange and RCWD) were added as non-voting members.

Since adoption of the IRWM Plan, the RWMG has developed an email distribution list specifically for the IRWM program (separate from Project Clean Water). The RWMG uses the stakeholder email list to communicate regularly with those actively involved in RAC meetings and activities. At key decision points, however – such as project solicitation for upcoming funding cycles and/or IRWM Plan updates – announcements will be made to a broader audience (e.g., through Project Clean Water) to ensure that all interested parties are at the table. Additional stakeholders are identified through the ongoing RAC meeting process, through ongoing stakeholder outreach activities, or from referrals from other interested parties.

3-2 Stakeholder Outreach Activities

This section addresses the following Reviewer questions:

- *Does it appear that the RWMG includes stakeholders, including DACs, in its planning process and implementation?*
- *Do stakeholder outreach efforts promote participation of broad-based water planning and management interests in the region?*
- *Are the procedures, processes, or structures that promote access to and collaboration with people or agencies with diverse views within the region listed and discussed?*
- *Will this result in the development of integrated, multi-benefit, regional solutions that incorporate environmental stewardship to implement the IRWM plan?*

Stakeholders and members of the public have been and continue to be invited to participate in all meetings for the IRWM planning effort. Public participation is welcomed at RAC meetings and public workshops. Members of the RWMG or RAC are available to make presentations on the IRWM program at community or non-profit group meetings. Stakeholder participation was also provided through public review and comment on draft versions of the IRWM Plan.

Meetings and news updates have been announced through both the website and through the email distribution list. Standard templates and forms have been provided throughout the process to facilitate stakeholder comments and input into the process and the Plan. **Table N-3 (pages N-8 to N-10) of the IRWM Plan** provides a summary of the outreach efforts up until Plan adoption. Table 3-1 provides an updated report on stakeholder outreach efforts to date.

Website

A website has been established as a means of communication with stakeholders, interested parties, and the general public. It serves as a consistent and ongoing outreach method that is always available to the public. The San Diego IRWM website (www.sdirwmp.org) provides detailed and up-to-date information on the IRWM program, including the following:

- Downloads of the 2007 IRWM Plan files;
- Description of all IRWM Projects and those selected for the Proposition 50 grant application;
- Description of regional participation (including the RAC, Workgroups, and public workshops);
- Explanation of the various funding bills;
- RWMG agency contacts; and
- Resource links, including adjacent IRWM Plan efforts.

Table 3-1
Summary of IRWM Plan Stakeholder Outreach Activities

RWMG Agency(s)	Date (Duration)	Audience	Audience Size	Topic and Method	Location
County of San Diego	4/4/06 (45 min)	Association of Environmental Professionals	100	Overview of IRWM Plan, status, funding opportunities, and project solicitation; presentation	
Water Authority	7/18/06	Water Authority Member Agency Technical Advisory Committee	25	Overview IRWM Plan; presentation	San Diego County Water Authority
County	7/20/06 (20 min)	San Diego County NPDES/MS4 Storm Water Copermittees	46	Overview of IRWM planning, schedule, and solicitation for input into IRWM Plan; presentation	
Water Authority	8/1/06	Water Authority Member Agency Technical Advisory Committee	25	Proposition 50, Chap. 8 IRWM Guidelines; presentation by DWR	San Diego County Water Authority
All RWMG Agencies	8/28/06 (2 hours)	Public/Stakeholder Workshop	76	Introduction to IRWM Plan & Development of Plan vision, goals, and objectives; presentation, workshop	Encinitas Community and Senior Center
All RWMG Agencies	8/29/06 (2 hours)	Public/Stakeholder Workshop	76	Introduction to IRWM Plan & Development of Plan vision, goals, and objectives; presentation, workshop	Sweetwater Authority, Richard A. Reynolds Groundwater Desalination Plant
All RWMG Agencies	8/30/06 (2 hours)	Public/Stakeholder Workshop	76	Introduction to IRWM Plan & Development of Plan vision, goals, and objectives; presentation, workshop	San Diego County Water Authority
County of San Diego	9/06 (15 min)	San Luis Rey and Carlsbad Watershed Urban Runoff Management Groups	20	Overview of IRWM Plan, stats, funding opportunities, and project solicitation; update	City of Encinitas
City of San Diego	9/19/06 (15 min)	City SD Park & Recreation, Open Space Division	1	Overview of IRWM Plan, status; meeting	Park & Recreation Department at World Trade Center Building
County of San Diego	9/25/06; (30 min)	San Luis Rey Watershed Council members and stakeholders	15	Overview of IRWM Plan, stats, funding opportunities, and project solicitation; presentation	Fallbrook Public Utility District
County of San Diego	9/27/06 (45 min)	County Watershed Protection Program Staff	40	Overview of IRWM planning process, status, and funding opportunities; presentation	County Operations Center, Topaz Building
Water Authority	10/06 (15 min)	SANDAG: Technical Planning Committee	25	Overview of IRWM Plan, status; meeting	SANDAG
County of San Diego	10/3/06	Tribal Nations of San Diego	37	Request for Participation in IRWM planning process; letter	NA
County of San Diego	10/10/06 (15 min)	Carlsbad Watershed Network	15	Overview of IRWM Plan, stats, funding opportunities, and project solicitation; presentation	Agua Hedionda Lagoon Center
County of San Diego	10/11/06 (15 min)	Regional workshop on Proposition 84 (The Nature Conservancy)	39	Overview of IRWM Plan, status, funding opportunities; presentation	County Administration Center
All RWMG Agencies	10/12/06 (15 min)	Metropolitan Water District	3	Overview of IRWM Plan, stats, funding opportunities; presentation	San Diego County Water Authority
County of San Diego	10/13/06 (15 min)	County of San Diego Board of Supervisors Staff Aides (except District 5)	10	Overview of IRWM Plan, status, and funding opportunities; presentation	County Administration Center
County of San Diego	10/16/06 (15 min)	County GP2020 Staff	20	Overview of IRWM planning process, status, and funding opportunities; presentation	County Operations Center Annex

Table 3-1
Summary of IRWM Plan Stakeholder Outreach Activities

RWMG Agency(s)	Date (Duration)	Audience	Audience Size	Topic and Method	Location
City of San Diego	10/19/06 (15 min)	City of San Diego Metropolitan Wastewater Dept / Stormwater Pollution Prevention Division and Engineering and Program Management Division	2	Overview of IRWM Plan, status; update	Metropolitan Wastewater Dept Operations Center, aka "MOC II"
County of San Diego	10/23/06 (15 min)	Wetlands Recovery Project members and stakeholders	15	Overview of IRWM Plan, stats, funding opportunities, and project solicitation; presentation	County Administrative Center
County of San Diego	10/30/06 (30 min)	University of California Cooperative Extension	2	Meeting	County Operations Center, Building 4
County of San Diego	11/06	San Diego County MSCP Stakeholders	310	email	NA
City of San Diego	11/2/06 (15 min)	Regional Chamber of Commerce	40	Overview of IRWM Plan, status; meeting	Regional Chamber of Commerce
Water Authority	11/07/06	Water Authority Member Agency Technical Advisory Committee	25	Formation of RAC, alternatives for future institutional structure; presentation	San Diego County Water Authority
City of San Diego	11/9/06 (20 min)	City of San Diego Metropolitan Wastewater Department/ Technical Advisory Committee (TAC)		Overview of IRWM Plan, status; presentation	Metropolitan Wastewater Dept. Operations Center
County of San Diego	11/16/06 (10 min)	Stormwater Copermittee Management Committee members and stakeholders	50	Update on IRWM Plan process, project solicitation; verbal update	Carlsbad Safety Center 2560 Orion Way, Carlsbad CA 92010
County of San Diego	11/17/06	Borrego Water District	1	Explanation of the Region as defined in the IRWM Plan; letter	NA
County of San Diego	11/21/06 (45 min)	Southern California Wetlands Recovery Project and Coast Keeper representatives	2	Update on IRWM Plan, identify linkages, project solicitation; meeting	County Operations Center, Topaz Building
County of San Diego	12/8/06	IRWM Plan Status Update Newsletter, Issue 1	837	Update on IRWM Plan status, legislation, funding opportunities, upcoming meeting schedule, and references; newsletter	NA
All RWMG Agencies	12/11/06 (2.5 hrs)	RAC Meeting #1	35	IRWM Plan Background, Mission	San Diego County Water Authority
All RWMG Agencies	12/18/06 (2.5 hrs)	RAC Meeting #2	38	RAC Meeting #1 Debrief, Mission Statement IRWM Long-Term Planning Effort, Potential Long-Term Institutional Structure	San Diego County Water Authority
All RWMG Agencies	1/10/07 (2.5 hrs)	RAC Meeting #3	42	Preparation of Draft IRWM Plan, Regional Priorities & Process for Project Prioritization	San Diego County Water Authority
County of San Diego	1/16/07 (45 min)	Campo Planning Group	25	Overview of IRWM Plan, stats, funding opportunities, and project solicitation; presentation	Campo Community Church
Water Authority	2/13/07	Water Authority Member Agency General Managers' meeting	30	Update on IRWM Plan and Prop. 50, Chapter 8 funding; presentation	San Diego County Water Authority
County of San Diego	2/26/07	IRWM Plan Status Update Newsletter, Issue 2	837	Update on IRWM Plan status, legislation, funding opportunities, upcoming meeting schedule, and references; newsletter	NA

Table 3-1
Summary of IRWM Plan Stakeholder Outreach Activities

RWMG Agency(s)	Date (Duration)	Audience	Audience Size	Topic and Method	Location
All RWMG Agencies	2/27/07 (2.5 hrs)	RAC Meeting #4	31	Update On IRWM Planning and Funding in CA, Discussion on Measurable Targets for Achieving San Diego IRWM Plan Objectives.	San Diego County Water Authority
All RWMG Agencies	3/12/07 (3 hours)	RWMG, RAC, Stakeholders and Public	40	DWR Funding Area, Solicitation for input; presentation and workshop	San Diego County Water Authority
All RWMG Agencies	3/19/07 (2.5 hrs)	RAC Meeting #5	42	Proposed Approach on Integration and Prioritization, Summary of IRWM Objectives Ranking	San Diego County Water Authority
All RWMG Agencies	4/23/07 (2.5 hrs)	RAC Meeting #6	43	Update on Propositions 50 & 84, Comments on Administrative Draft IRWMP, Review of IRWM Plan Prioritization, Request for Additional Information on Project Proposals, Approach to Funding Application Prioritization	San Diego County Water Authority
All RWMG Agencies	4/25/07	Public Workshop – General Public, Project Proponents	45	IRWM Project Application Workshop: Instructions for Completing, Explanation for How Data Will be Used and Compiled in Plan; public workshop	Scripps Ranch Library
All RWMG Agencies	5/16/07 (2.5 hrs)	RAC Meeting #7	42	Revised Plan Prioritization Process, Approach to Funding Application Prioritization	San Diego County Water Authority
County	5/17/07 (10 min)	San Diego County NPDES/MS4 Storm Water Copermittees	41	Overview of the Public Draft IRWM Plan and projects and solicitation for input; presentation	
All RWMG Agencies	6/12/07 (2.5 hrs)	RAC Meeting #8	40	Public Draft 2007 IRWM Plan, Overview of Public Draft IRWM Short – and Long-Term Implementation Priorities	San Diego County Water Authority
All RWMG Agencies	6/29/07	Public Workshop – General Public, Project Proponents		IRWM Plan Prioritization Process, Approach to Funding Application Process	San Diego Zoo
All RWMG Agencies	7/10/07 (2.5 hrs)	RAC Meeting #9	35	Public Outreach Plan, RAC Workgroup, Step 1 Application	San Diego County Water Authority
All RWMG Agencies	8/1/07 (2.5 hrs)	RAC Meeting #10	30	Step 1 Application, RAC Workgroup	San Diego County Water Authority
All RWMG Agencies	8/14/07	Public Workshop – General Public, Project Proponents		IRWM, Proposition 50 and Proposition 84 Update	San Diego County Water Authority
All RWMG Agencies	9/5/07 (2.5 hrs)	RAC Meeting #11	28	Proposed Modifications to Draft IRWM Plan, Measurable Targets	San Diego County Water Authority
All RWMG Agencies	9/19/07 (2.5 hrs)	RAC Meeting #12	34	Finalize Measurable Targets, Consider Recommendation that RWMG Governing Bodies Adopt the IRWM Plan, Workgroup Update and Proposed Funding Package	San Diego County Water Authority
County	9/20/07 (10 min)	San Diego County NPDES/MS4 Storm Water Copermittees	38	Update on IRWM Plan and projects selected for Prop 50 application; presentation	

Table 3-1
Summary of IRWM Plan Stakeholder Outreach Activities

RWMG Agency(s)	Date (Duration)	Audience	Audience Size	Topic and Method	Location
All RWMG Agencies	10/9/07 (2.5 hrs)	RAC Meeting #13	31	Institutional Structure, RAC Workgroup Update, Other Updates	San Diego County Water Authority
County	11/29/07 (5 min)	San Diego County NPDES/MS4 Storm Water Copermittees	39	Update on IRWM Plan and status of Prop 50 application; presentation	
All RWMG Agencies	12/11/07 (2.5 hrs)	RAC Meeting #14	25	RAC Workgroup Report, IRWM Funding Program Update, Implications for IRWM Planning, Revision in the Proposition 50 Application Package	San Diego County Water Authority
All RWMG Agencies	1/8/08 (2.5 hrs)	RAC Meeting #15	30	Workgroup Recommendations: Prop 50 Proposal Modifications, Other Updates	San Diego County Water Authority
All RWMG Agencies	2/4/08	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	4/14/08	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	5/12/08 (2.5 hrs)	RAC Meeting #16		Recap of May 8th Public Workshop, Lobbying Approach, Approach to Modifying Project List, Prop 84 Update	San Diego County Water Authority
All RWMG Agencies	6/9/08	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	6/11/08 (2.5 hrs)	RAC Meeting #17		San Diego Region Water Supply Update, Final Prop 50 IRWM Grant List, Prop 84 Funding Area Discussions	San Diego County Water Authority
All RWMG Agencies	7/14/08	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	6/25/08 (30 min)	San Diego Regional Water Quality Control Board	50	IRWM Program Overview, Prop 50 project package, and Prop 84 funding opportunities	San Diego Regional Water Quality Control Board
All RWMG Agencies	8/18/08	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	8/25/08 (2.5 hrs)	RAC Meeting #18	47	Updates on IRWM Program and La Jolla Shores Integrated Coastal Management Plan, Watershed Panel	San Diego County Water Authority
All RWMG Agencies	9/22/08	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	10/20/08	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	12/8/08	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District

Table 3-1
Summary of IRWM Plan Stakeholder Outreach Activities

RWMG Agency(s)	Date (Duration)	Audience	Audience Size	Topic and Method	Location
All RWMG Agencies	12/10/08 (2.5 hrs)	RAC Meeting #19	41	San Diego IRWM Updates, Planning Region Recommendation, Basin Plan Triennial Review	San Diego County Water Authority
All RWMG Agencies	1/13/09	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	1/26/09	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	2/9/09	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	2/11/09 (2.5 hrs)	RAC Meeting #20	26	San Diego IRWM Updates, Water Supply for Agricultural Resources	San Diego County Water Authority
County & Water Authority	2/13/09 (2 hrs)	San Diego CoastKeeper	3	Outreach to DACs	San Diego County Water Authority
All RWMG Agencies	3/16/09	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
Water Authority	3/30/09 (1.5 hrs)	Rural County Assistance Corporation	2	Outreach to DACs, particularly small rural water systems	San Diego County Water Authority
County & Water Authority	4/1/09 (1.5 hrs)	California Rural Water Association	4	Outreach to DACs, particularly small rural water systems	San Diego County Water Authority
County of San Diego	4/9/09 (15 min)	Chollas Creek Project Implementation Stakeholder Group	9	Updates on IRWM Program and Prop 84 Funding Opportunities; presentation	Jacobs Center, San Diego
All RWMG Agencies	4/13/09	Tri-County FACC	~10	Discussion and Coordination on Issues of Common Interest to Tri-County FACC Members	Rancho California Water District
All RWMG Agencies	4/15/09 (2.5 hrs)	RAC Meeting #21		San Diego IRWM Updates, RAP Application, SWRCB Draft Policy on Recycled Water	San Diego County Water Authority
County of San Diego	4/24/09 (15 min)	San Diego River Watershed Forum	80	Update on San Diego IRWM Program	City of San Diego Water Dept, Kiowa Drive

Stakeholder Email

A stakeholder email list has been established as a means of communication with stakeholders, interested parties, and the general public. The RWMG maintains the email list to provide IRWM program updates, announcements, RAC meeting agendas and summaries, water-related workshops and seminars, and updates from DWR.

Newsletters

During IRWM Plan development, a newsletter was developed and distributed to all 830 people on the Project Clean Water stakeholder list. The newsletters served as a means of keeping the stakeholders updated on legislative issues, funding opportunities, status of the IRWM Plan, opportunities for involvement, and information about project submittals, a timeline, and RWMG agency contact information. Additional newsletters will be distributed as appropriate during the IRWM Plan update and potential future grant application(s).

Clean Water Summit

A focal point of early stakeholder participation was the annual Clean Water Summit. The 2006 Clean Water Summit, held on June 30, 2006, was focused entirely around the San Diego IRWM planning effort. The keynote speaker, Mr. Jerry Johns of DWR, presented the background on the IRWM planning process by providing an overview of the California Water Plan Update 2005. Mr. Johns explained how the 2005 Water Plan update provided a fundamental change in the way we address water throughout the State, and provides for a transition in water resource management. The Summit also provided the opportunity for the public and the stakeholders to learn more about the IRWM Plan and allowed for questions and public comment.

RAC Meetings

The RAC was formed in December 2006 to assist in completion of the IRWM Plan and prioritization of projects both within the Plan and for future funding application(s) as they arise. The RAC consists of 25 voting members and four non-voting members (refer to Table 2-2) with expertise in water supply, wastewater, recycled water, storm water and urban runoff, natural resources, and environmental stewardship. The RAC meets on a bi-monthly basis to provide guidance on upcoming IRWM planning and funding application activities.

Members of the public are welcome to attend and participate in bi-monthly RAC meetings, generally hosted at the Water Authority offices. The RAC meeting schedule for the entire calendar year is distributed to all RAC members and interested parties via the stakeholder email list. RAC meeting agendas are distributed to all RAC members and interested parties one week in advance of each bi-monthly meeting, while the meeting summaries are distributed approximately two to three weeks following each RAC meeting. Further, the RAC meeting schedule, agendas, handouts, presentations, and meeting summaries are all located on the San Diego IRWM website (www.sdirwmp.org) for reference.

Public Workshops

The RWMG coordinated three initial public workshops and provided presentations to various stakeholder groups including water supply agencies, environmental organizations, and other groups regarding various components of the IRWM Plan. The three initial workshops were held during August 2006 and were advertised through the website and the stakeholder email list. Each workshop was held in a separate location, spread geographically throughout the Region with one each in the north, center city, and south. The purpose of the workshops was to inform and educate the public about the background of IRWM planning, and to receive public feedback regarding the vision, goals and objectives of the IRWM Plan. Comments were accepted during each of the workshops and via an online comment form. Each comment was reviewed and considered for inclusion within the Plan, for use in the planning process, or for Plan implementation.

A second round of public workshops was held in April, June, and August 2007 to facilitate a 'Call for Projects' for the IRWM Plan and Proposition 50 Implementation Grant Application. The public workshops were advertised through the website and the stakeholder email list, and were also held in varied locations throughout the County. The second round of workshops sought to provide members of local water supply, wastewater, stormwater, environmental, and community organizations with information about the IRWM Plan prioritization process, the proposed approach to funding application prioritization, and explanation of the Project Application Review form. The third public workshop in 2007 provided an update on the Proposition 50 grant program (Cycle 2) and an introduction to the upcoming Proposition 84 grant program.

A third round of public workshops will be hosted once the Proposition 84 guidelines are released and a new 'Call for Projects' begins. Finally, a fourth round of public workshops will be hosted when the IRWM Plan update begins. The public workshops are open to the public and are particularly targeted toward non-RAC members. During the third and fourth rounds of workshops, the RWMG will target outreach to DACs in both urban and rural areas. This ensures contribution from a wide range of public agencies, organizations, and individuals in the IRWM program.

Presentations

The RWMG welcomes the opportunity to attend meetings hosted by local organizations to present information on the IRWM program. The primary focus of the individual group presentations has been to provide attendees with information about the IRWM planning process, the Plan's purpose and objectives, and the project solicitation process. Presentations typically last 15-45 minutes and generally include the use of PowerPoint presentations, maps, informational handouts, and forms for submitting comments and or projects. IRWM presentations will continue to

be given upon request by any agency, organization, or community group. Input received during presentations is taken back to the RWMG for consideration, and typically, the participants are added to the stakeholder email list.

Partnerships and Letters of Support

The RWMG formed a formal partnership through the signing of an MOU in 2005, an amendment in 2007, and a new MOU in 2009 (see Attachment A). Without the IRWM planning process, the three agencies comprising the RWMG may not have come together to work toward achieving common goals in water resources management. Since the formation of the RWMG, many positive outcomes have been realized. Aside from the sharing of ideas and funds, the group has found many other ways to collaborate, such as participating on the Water Conservation Action Committee, getting involved with regional groundwater management planning, developing a regional guidance for low-impact development, and developing and implementing a watershed signage program.

The RAC, an informal partnership, has realized many benefits including opening the lines of communication between various water-related agencies and organizations, and providing opportunities to collaborate, maximize benefits, and realize both a cost savings and improvement in program/project efficiency. RAC members also are briefed periodically on issues of interest, such as watershed-based planning and the impact of water supply reductions on San Diego County agriculture. In addition, several public participants to the IRWM process have established a regular presence at workshops and RAC meetings, and have provided constructive feedback. These entities include representatives from the U.S. Bureau of Reclamation, the Regional Board, Metropolitan, the Campo-Lake Moreno Planning group, the San Diego Zoo and Wild Animal Park, the La Jolla Band of Luiseño Indians, and numerous public citizens.

The Tri-County FACC is a formal partnership established in April 2009 through joint adoption of an MOU outlining measures for inter-regional coordination (see Attachment C). The efforts of the Tri-County FACC are intended to enhance the quality of water resources planning and to improve the quality and reliability of water in the Funding Area. This partnership is a unique opportunity to collaborate with neighboring planning regions to address common objectives, issues, and conflicts.

The RAC and interested parties have offered letters of support for the IRWM program and the current RAP Application. Partnerships and letters of support will help strengthen the basis for the IRWM Plan, will support Plan implementation, and will provide a network for the dissemination of information and for the solicitation of region-wide support (see Attachment D).

Utilizing all of the stakeholder outreach methods described above, the San Diego IRWM program has implemented a collaborative, multi-stakeholder process that addresses the Region's unique water management issues and helps to develop multi-benefit water resources solutions in response to those issues.

3-3 Engaging Disadvantaged Communities

This section addresses the following Reviewer questions:

- *Are DACs given an opportunity to participate?*
- *Does it appear that the RWMG includes stakeholders, including DACs, in its planning process and implementation?*
- *Does the submittal describe how stakeholders, including DACs, are identified and invited to participate?*
- *Does it appear that the IRWM region is inclusive and utilizes a collaborative, multi-stakeholder process that provides mechanisms to assist DAC and address water management issues?*

As described in **Section N (pages N-6 to N-7) of the IRWM Plan**, the San Diego area experienced significant growth since World War II. During this period, the Region became a major port and industrial growth in the Region boomed. This rapid growth and development led to unhealthy land use combinations. In many areas, especially those areas located in the south, southeastern, and border areas of the Region, residential areas and industrial zones were integrated. The juxtaposition of homes and schools adjacent to environmentally hazardous facilities has resulted in situations where communities are threatened by the past and present impacts of industrial pollution. Water-related impacts include the deposition of airborne industrial and manufacturing contaminants into surface waters and the degradation of groundwater from land contamination. In addition, following the war, establishment

as a major port led to the boom of the shipbuilding and boating industries; these industries have contributed significantly to the pollution of waterways.

Mapping and Identification

In the IRWM Plan, environmental justice is interpreted to mean that equal respect and value will be provided to every individual and community. As defined in both the 2004 and 2007 versions of the *IRWM Grant Program Guidelines*, a DAC is a community with an annual Median Household Income (MHI) that is less than 80% of the statewide annual MHI (DWR and State Board 2004; 2007). The statewide MHI for the year 2000 was $46,000. Therefore, communities with a MHI of $37,520 (80% of $46,000) are considered DACs.

The IRWM Plan used various geographical designations, including cities, County of San Diego community planning areas (CPAs), and City of San Diego CPAs. However, the use of larger planning areas can at times cause smaller portions of the planning area that are economically disadvantaged to be overlooked. The RWMG recently analyzed MHI values on a census tract basis to identify smaller DACs for outreach. Table 3-2 presents census tracts within the Region that are classified as economically disadvantaged. Figure 3-1 illustrates the disadvantaged census tracts within the Region; Figure 3-2 focuses on the disadvantaged census tracts within the center city areas.

Consistent with the recommendations of the *Public Outreach and Disadvantaged & Environmental Justice Community Involvement Plan*, actions are underway to identify specific locations of DACs throughout the Region. In addition to identifying communities meeting the State's MHI definition of disadvantaged, this comprehensive analysis will also consider areas that are recognized as economically disadvantaged by the Region's planning agencies but do not meet the State's MHI definition. The RWMG is working closely with local DAC advocates to determine the most appropriate way to define DACs for the Region.

Table 3-2
Economically Disadvantaged Census Tracts in the San Diego Region

HU[1]	HU Name	City or County	2000 Census Tract No.	2000 Median Household Income[2]	2000 Population
903	San Luis Rey River	Oceanside	18603	$32,282	6,244
		Oceanside	18607	$37,366	9,733
904	Carlsbad	Escondido	20212	$22,034	9,960
		Escondido	20207	$28,582	4,532
		Oceanside	18200	$29,242	7,818
		Escondido	20209	$29,298	4,874
		Escondido	20202	$30,679	6,531
		Vista	19502	$31,232	6,065
		Escondido	20601	$32,011	4,987
		Vista	19501	$33,105	3,889
		Escondido	20211	$36,020	6,358
		Escondido	20108	$36,112	5,976
		Vista	19503	$36,516	4,593
		Escondido	20210	$36,608	3,857
906	Peñasquitos	San Diego	8343	$34,970	3,892
		San Diego	8359	$36,202	3,061
		San Diego	8507	$39,694	7,910
907	San Diego River	El Cajon	15801	$22,807	3,239
		El Cajon	15701	$23,354	5,500
		San Diego	2801	$24,344	3,776
		El Cajon	15703	$24,586	6,335
		El Cajon	15802	$25,819	4,530
		El Cajon	15901	$26,646	3,312

Table 3-2
Economically Disadvantaged Census Tracts in the San Diego Region

HU[1]	HU Name	City or County	2000 Census Tract No.	2000 Median Household Income[2]	2000 Population
		El Cajon	15902	$31,908	4,944
		El Cajon	16302	$32,480	5,114
		El Cajon	16301	$32,705	4,976
		La Mesa	14803	$33,829	4,732
		El Cajon	15704	$34,876	3,851
		County	16502	$35,447	6,711
		County	16202	$35,984	3,465
		County	16501	$35,990	8,733
		San Diego	9201	$36,963	4,744
		El Cajon	15301	$37,024	3,164
908	Pueblo	San Diego	2202	$18,205	5,075
		San Diego	2708	$18,240	7,093
		San Diego	2707	$18,814	6,618
		San Diego	2402	$19,075	5,102
		San Diego	4700	$19,295	2,521
		San Diego	3501	$19,516	4,059
		San Diego	5300	$19,800	5,518
		San Diego	4800	$19,920	4,831
		San Diego	2302	$20,782	6,709
		San Diego	2201	$20,976	3,820
		San Diego	3902	$22,055	5,078
		San Diego	5700	$22,252	1,668
		National City	12002	$22,560	3,439
		San Diego	3502	$23,151	4,645
		San Diego	4000	$23,656	5,036
		San Diego	3901	$24,059	4,098
		San Diego	4900	$24,129	5,014
		San Diego	2710	$24,143	4,174
		San Diego	2401	$24,417	5,467
		San Diego	2602	$24,710	4,649
		San Diego	2601	$24,962	6,293
		San Diego	3403	$25,114	4,284
		San Diego	4100	$25,188	5,586
		San Diego	3404	$25,507	4,880
		San Diego	2709	$25,910	4,212
		San Diego	1600	$26,550	6,126
		San Diego	2501	$26,581	6,107
		San Diego	4600	$27,235	2,281
		San Diego	1200	$27,297	5,641
		San Diego	4501	$27,944	3,583
		San Diego	1300	$28,330	6,068
		San Diego	3602	$29,043	3,016
		San Diego	5900	$29,504	2,570

Table 3-2
Economically Disadvantaged Census Tracts in the San Diego Region

HU[1]	HU Name	City or County	2000 Census Tract No.	2000 Median Household Income[2]	2000 Population
		County	2706	$29,657	8,096
		San Diego	4502	$30,345	2,747
		San Diego	1500	$31,505	4,010
		San Diego	3004	$32,211	4,813
		National City	12001	$32,891	2,263
		San Diego	2702	$34,161	4,723
		San Diego	4400	$35,340	4,065
		San Diego	3401	$36,976	5,890
		County	2703	$37,164	6,447
		San Diego	2502	$37,308	5,854
909	Sweetwater River	Chula Vista	12302	$26,938	1,482
		County	13907	$28,120	3,905
		Chula Vista	12402	$28,972	5,165
		County	12401	$32,020	3,332
		County	12200	$35,704	2,750
		County	13506	$36,667	2,368
910	Otay River	County	13205	$25,584	2,028
		Chula Vista	13203	$28,389	5,976
		County	13206	$28,404	5,713
		Chula Vista	13204	$32,880	3,906
911	Tijuana River	San Diego	10013	$20,607	5,547
		San Diego	10005	$26,987	7,390
		San Diego	10012	$28,938	4,267
		San Diego	10111	$33,643	3,120
		County	10402	$34,977	5,778

1. Numerical hydrologic unit designation per Regional Water Quality Control Board (1994) and California Department of Water Resources Hydrologic Data (Bulletin 130).
2. Median household income data from 2000 census. (U.S. Census Bureau 2009).

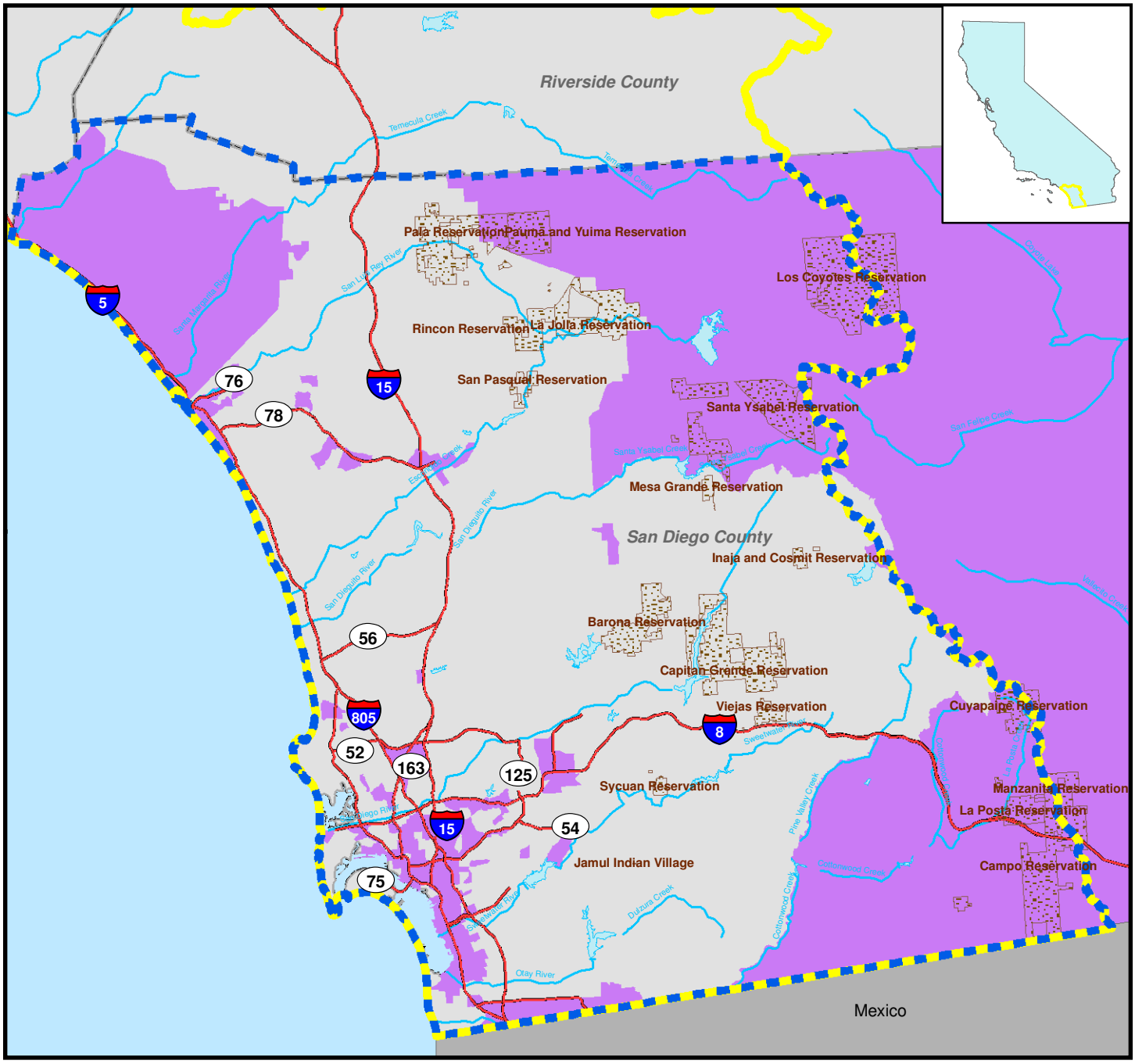
Watersheds tributary to San Diego Bay include several underserved communities including the communities of Barrio Logan, Harbor, Southeast San Diego, and Centre City. The San Diego Bay watersheds have been subject to such problems as toxic air emissions from plating industries, polluted waterways from sewage spills, and pollution resulting from the shipbuilding and boating industry. Additionally, infrequent rains lead to a high level of pollution buildup in urban runoff when storm events do occur.

The IRWM program promotes projects that address public health and environmental protection in a manner that encourages equity and affords fair treatment, accessibility, and protection for the Region, regardless of race, age, culture, income, or geographic location. By sorting the master project list geographically, and comparing it to the mapped DACs by census tract, project deficits can be identified and addressed.

DAC Outreach Strategies

Outreach to DACs is complex – some economically disadvantaged areas are not well represented by water management groups. If organized groups exist within the identified DACs (such as Groundwork San Diego-Chollas Creek in the Pueblo hydrologic unit), the RWMG and RAC members have reached out to invite participation in the IRWM program. For example, RWMG staff recently gave a presentation on the IRWM program to the emerging Chollas Creek Project Implementation Group. If no organized group exists, however, outreach is coordinated

Figure 3-1: Disadvantaged Communities



Legend

- Median Household Income <$37,520
- Tribal Lands
- San Diego IRWM Region
- Funding Area Boundary
- Ocean
- Waterbody
- River
- Freeway
- Mexico
- County

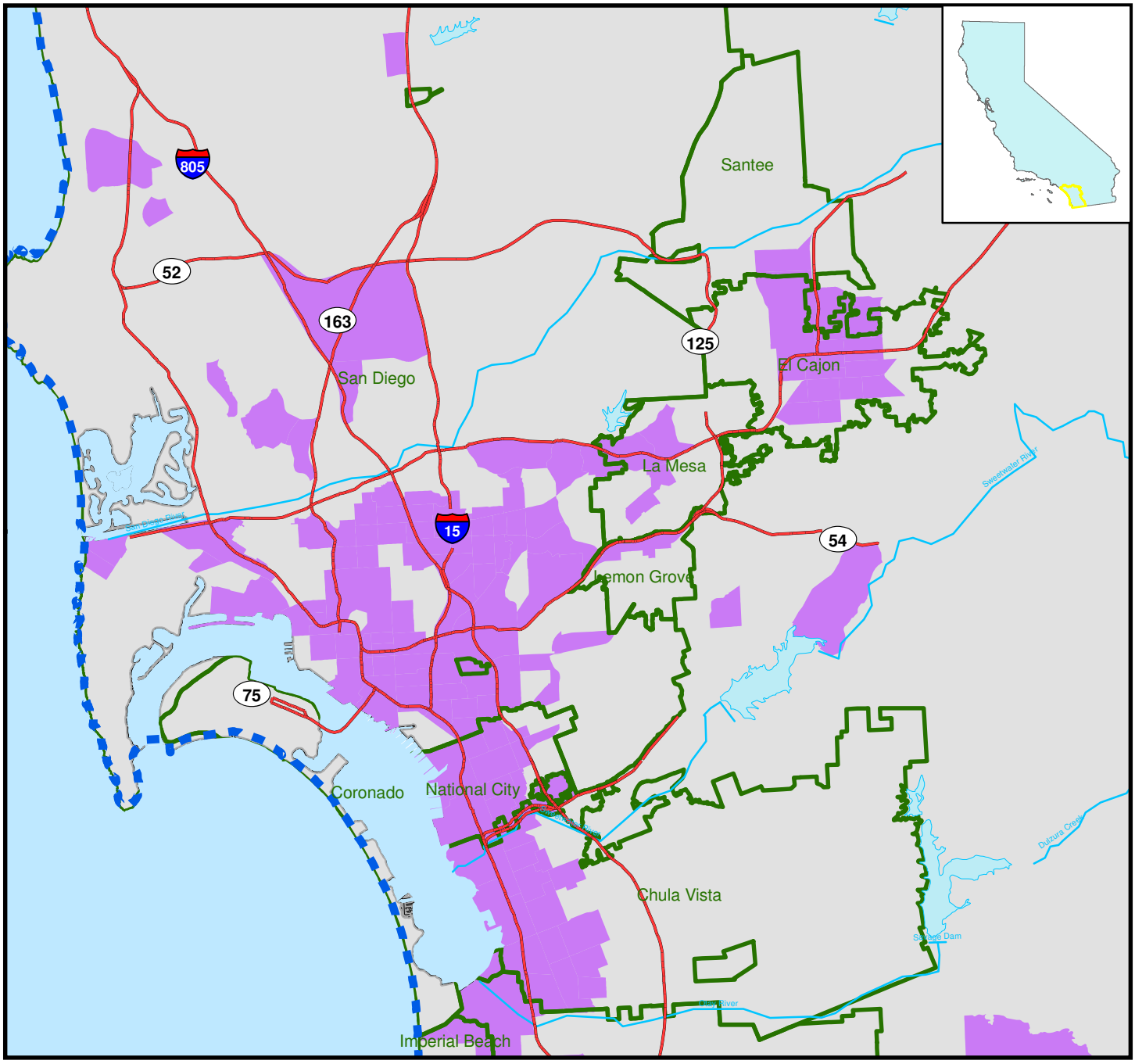
N

0 2.5 5 10
Miles

RMC

U.S. Census Bureau, 2000 Census, Median Household Income by Census Tract, Available: http://www.sandag.cog.ca.us/resources/maps_and_gis/gis_downloads/admin.asp
Tribal Lands, Available: http://www.sangis.org/Download_GIS_Data.htm

Figure 3-2: Disadvantaged Communities - Center City



Legend

- Median Household Income <$37,520
- Cities
- San Diego IRWM Region
- Ocean
- Waterbody
- River
- Freeway
- County

N

0 1 2 4
Miles

RMC

U.S. Census Bureau, 2000 Census, Median Household Income by Census Tract, Available: http://www.sandag.cog.ca.us/resources/maps_and_gis/gis_downloads/admin.asp

through the water agencies and municipalities serving those areas in order to identity water resources projects that provide DAC benefits. The RWMG also is working to establish lines of communication with rural DACs that depend on groundwater .

The Watershed Planning and Outreach Workgroup was established in December 2008 to further clarify critical water supply and water quality needs in the Region's watersheds, and to identify outreach strategies that will bring DAC leaders to the table to engage in projects and partnerships that help to solve those critical needs. The Workgroup's products will help the Region understand and address the challenges faced by local DACs.

The methods being employed to gain participation of DACs in the development of the IRWM Plan were described in **Sections B.2 (pages B-7 to B-8), F.1 (page F-3), N.2 (page N-6 to N-7), O.5 (page O-8 to O-9), and Appendix 8 of the IRWM Plan**. The following sections summarize those identified in the IRWM Plan, as well as outreach strategies that have been suggested by the Workgroup. The RWMG will continue to work with the Workgroup to develop and implement a watershed outreach strategy that targets DACs. The RWMG intends to build on DWR's support for targeted DAC outreach, DAC participation in IRWM planning, technical assistance, feasibility studies, and construction.

Coordination with San Diego Association of Governments (SANDAG)

SANDAG is the regional planning agency responsible for generating the regional growth projections upon which the Water Authority and member agencies base their UWMP demand calculations. SANDAG has been an active participant in the RAC and other IRWM-related planning activities. Coordination with SANDAG will assist the RWMG in surveying the Region's economically disadvantaged communities, monitoring changes to these communities, and identifying their needs.

One-on-one Communication between DAC Leaders and RWMG or RAC Representatives

The RWMG and RAC have contacted community leaders within the DACs, as well as organizations that support rural water systems, and asked to work with them to identify the current state of their water-related resources. This one-on-one correspondence will ensure that DACs have access to the planning process, allowing their input to be incorporated and their interests to be represented early-on, prior to project implementation. Additionally, critical needs of the DACs which are identified through these discussions will be translated into long-term targets for the Plan and potential projects.

The Watershed Planning and Outreach Workgroup have also approached the Rural Community Assistance Corporation, California Department of Public Health, and County Department of Environmental Health for lists of rural mutual water companies and other organizations that may be targeted for outreach. Many of these rural water companies face groundwater quality concerns, as they're outside of the Water Authority's service area.

Disadvantaged Community Representation on the RAC

To ensure consideration of diverse views, RAC membership includes organizations that identify and address DAC and environmental justice issues. CoastKeeper and SCWRP, for example, are active in addressing several key DAC projects within the Region. CoastKeeper is identified in **Section N (page N-7) and Appendix 8 of the IRWM Plan** as a disadvantaged community and environmental justice advocacy organization. CoastKeeper also works with the Environmental Health Coalition on their San Diego Bay campaign which unites workers, bayside communities, and conservationists to clean up, restore, and protect the Bay.

Strategic Location of Public Meetings

To overcome financial constraints that may prevent DACs from traveling to public meetings, public meetings related to the planning and implementation of the IRWM Plan will be hosted in disadvantaged areas to the greatest extent feasible. This recommendation was included in the *Public Outreach and Disadvantaged & Environmental Justice Community Involvement Plan*.

Targeted Presentations

The Watershed Planning and Outreach Workgroup have also suggested conducting targeted presentations to community and stakeholder groups in DACs. Preliminary suggestions included presentations and brainstorming for project ideas at Watershed Urban Runoff Management Program (WURMP) meetings, conducted as part of the

regional MS4 Permit. Because WURMP activities target specific watershed areas, group members may be able to offer ideas and suggestions about water quality needs in underprivileged neighborhoods.

Additionally, the Workgroup is working on developing a Road Show on the IRWM program and project guidance for the upcoming Proposition 84 grant cycle(s). The Workgroup plans to convene a public meeting to present the Road Show in each of the Region's hydrologic units that brings together watershed groups, DAC leaders, municipalities, and agencies. This Road Show will be an essential tool for helping DACs to formulate integrated, multi-benefit projects that incorporate environmental stewardship to address their critical water resources needs.

3-4 References

San Diego Regional Water Management Group. 2007. Public Outreach and Disadvantaged and Environmental Justice Community Involvement Plan. Prepared by RMC Water & Environment.

4 Public Access to the IRWM Program

As described previously, the RWMG uses a proactive approach to public outreach and information dissemination to generate broad-based support for the IRWM program. A variety of outreach mechanisms are used to improve general awareness of the IRWM planning effort and provide a means for all interested parties to stay engaged during the planning process and Plan implementation.

4-1 Summary of Outreach Strategies

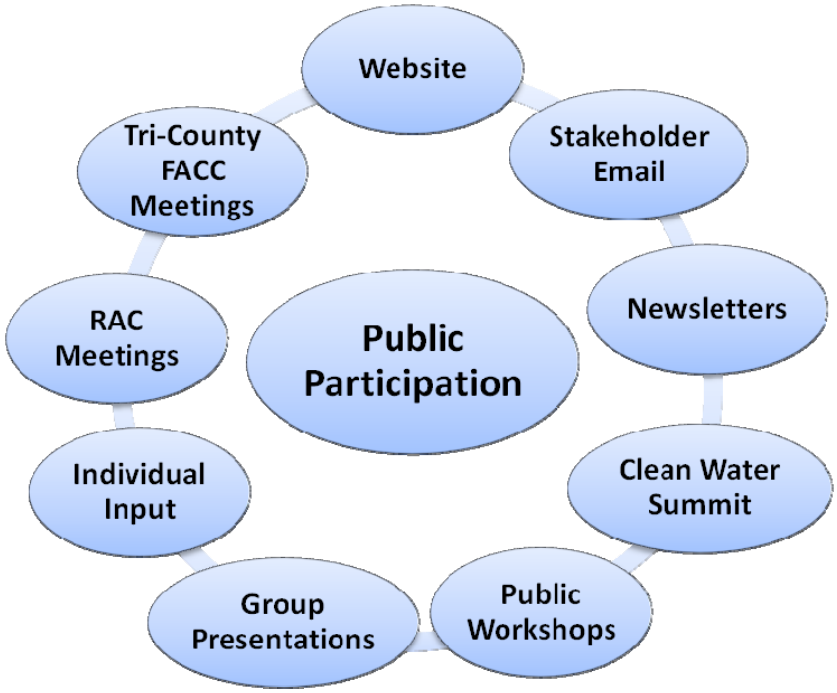
This section addresses the following Reviewer questions:

- *Are there public meetings held to solicit public comments ahead of major decisions to be made by the RWMG?*
- *What is the process for the public to provide input to RWMG on regional water management and/or on IRWMP?*

The following is a summary of stakeholder outreach strategies employed in the IRWM program (see Figure 4-1). Please refer to **Section 3 of this RAP Application** for detailed discussion of outreach strategies.

Website. A website has been established as a means of communication with stakeholders, interested parties, and the general public. It serves as a consistent and ongoing outreach method that is always available to the public. The SD IRWM website (www.sdirwmp.org) provides detailed and up-to-date information on the IRWM program, including the following: the 2007 IRWM Plan, Proposition 50 grant projects, regional participation (including the RAC, Workgroups, and public workshops), description of the funding bills, RWMG contacts, and resource links.

Figure 4-1: Public Participation Outreach Strategies



Stakeholder Email. A stakeholder email list has been established as a means of communication with stakeholders, interested parties, and the general public. The RWMG maintains the email list to provide IRWM program updates, announcements, RAC meeting agendas and summaries, water-related workshops and seminars, and updates from DWR. Public comments and feedback are invited in response to this communication.

Newsletters. During IRWM Plan development, a newsletter was developed and distributed to all 830 people on the Project Clean Water stakeholder list. The newsletters served as a means of keeping the stakeholders updated on legislative issues, funding opportunities, status of the IRWM Plan, opportunities for involvement, and information about project submittals, a timeline, and RWMG agency contact information. Additional newsletters will be distributed as appropriate during the IRWM Plan update, project solicitation, and future grant application(s).

Public Workshops. The RWMG coordinated three initial public workshops to discuss and receive feedback on the various components of the IRWM Plan. The three initial workshops were held during August 2006. The purpose of the workshops was to inform and educate the public about the background of IRWM planning, and to receive public feedback regarding the vision, goals, and objectives of the IRWM Plan.

A second round of public workshops was held in April, June, and August 2007 to facilitate a 'Call for Projects' for the Proposition 50 implementation grant application. The second round of workshops sought to provide members of local water supply, wastewater, stormwater, environmental, and community organizations with information about the IRWM Plan prioritization process, discuss and receive feedback on the proposed approach to funding application prioritization, and explain the Project Application Review form.

A third round of public workshops will be hosted once the Proposition 84 guidelines are released and a new 'Call for Projects' begins. Finally, a fourth round of public workshops will be hosted to engage the public when the IRWM Plan update begins. The public workshops are open to the public and are particularly targeted toward non-RAC members. During the third and fourth rounds of workshops, the RWMG will target outreach to DACs in both urban and rural areas. This ensures contribution from a wide range of public agencies, organizations, and individuals in the IRWM program.

Presentations. The RWMG welcomes the opportunity to attend meetings hosted by local organizations to present information on the IRWM program. The primary focus of the individual group presentations has been to provide attendees with information about the IRWM planning process, the Plan's purpose and objectives, and the project solicitation process. Presentations typically lasted 15-45 minutes, and generally included the use of PowerPoint presentations, maps, informational handouts, and forms for submitting comments and or projects. IRWM presentations will continue to be given upon request by any agency, organization, or community group. Input received during presentations is taken back to the RWMG for consideration, and typically, the participants are added to the stakeholder email list.

Individual Input. A key step for involving DACs in the IRWM program is soliciting input from individuals and organizations who understand local needs. These individuals may include city managers, chamber of commerce, tribal Chairs, non-profit program managers, and/or other community leaders. The RWMG welcomes and pursues one-on-one communication with these individuals to ensure that DAC needs are being identified and considered in the Region's program.

RAC Meetings. The RAC currently consists of 25 voting and 4 non-voting members with expertise in water supply, wastewater, recycled water, stormwater and urban runoff, natural resources, and environmental stewardship. The RAC currently meets on a bi-monthly basis to provide guidance on upcoming IRWM planning and funding application activities. The RAC may be convened more frequently, as needed, for planning and funding proposals. All members of the public and interested parties are welcome to attend and comment at RAC meetings.

Tri-County FACC Meetings. The Upper Santa Margarita RWMG, San Diego RWMG, and South Orange County RWMG collaborate in the Tri-County FACC to understand and address cross-boundary issues. Members of all RWMG agencies attend the meetings, along with other stakeholders and interested parties as appropriate. For example, a representative from FPUD serves as the San Diego Region's RAC representative to the Tri-County FACC meetings.

4-2 Public Involvement in the RAC

This section addresses the following Reviewer questions:

- *Does the RWMG allow the public to participate in regular meetings?*
- *Is there an established method of posting meeting agendas, notices, and minutes?*
- *Are they posted with sufficient lead time for the public to participate in meetings?*

As described in **Section 2 of this RAP Application**, the RAC consists of 25 voting members and four non-voting members (refer to Table 2-2) with expertise in water supply, wastewater, recycled water, storm water and urban runoff, natural resources, and environmental stewardship. The RAC meets on a bi-monthly basis to provide guidance on upcoming IRWM planning and funding application activities.

Members of the public are welcome to attend and participate in RAC meetings, hosted at the Water Authority offices. The RAC meeting schedule for the entire calendar year is distributed in January to all RAC members and interested parties via the stakeholder email list; it is also clearly posted on the San Diego IRWM website for reference. RAC meeting notices and agendas are distributed to all RAC members and interested parties one week in advance of each bi-monthly meeting, while the meeting summaries are distributed approximately two to three weeks following each RAC meeting. Further, the RAC and Workgroup meeting schedule, agendas, handouts, presentations, and meeting summaries are all available on the San Diego IRWM website (www.sdirwmp.org).

In addition to attending RAC meetings as interested parties, members of the public were solicited for participation on the RAC when it was initially formed. The RAC includes seven at-large members who represent agencies and organizations that represent the public, including a tribe (Campo Kumeyaay Nation), San Diego CoastKeeper, the Farm Bureau of San Diego County, the San Diego Regional Chamber of Commerce, SANDAG, and a private sustainability consultant. Members of non-water related industries and organizations provide an important public voice in the IRWM planning process, identifying lay concerns and issues that may arrive from regional water management decisions.

4-3 RWMG Contacts

This section addresses the following Reviewer questions:

- *Is it clear who the public should contact within the RWMG if they have questions regarding regional water management efforts or IRWM planning and implementation in the region?*

The San Diego IRWM website (www.sdirwmp.org) provides the following RWMG contact information for members of the public if they have questions or suggestions regarding regional water management efforts or IRWM planning and implementation in the Region.

San Diego County Water Authority Mark Stadler Principal Water Resources Specialist San Diego County Water Authority 4677 Overland Avenue San Diego, CA 92123 858-522-6735 mstadler@sdcwa.org	City of San Diego Cathy Pieroni Senior Water Resources Specialist Water Resources and Planning Div Water Department City of San Diego 600 B Street, Suite 600 San Diego CA 92101 619-533-6612 cpieroni@sandiego.gov	County of San Diego Sheri McPherson Land Use/Environmental Plnr III Watershed Protection Program Department of Public Works County of San Diego 9325 Hazard Way San Diego CA 92123-1217 858-495-5285 sheri.mcpherson@sdcounty.ca.gov

4-4 Public Comments on the IRWM Program

This section addresses the following Reviewer questions:

- *What is the process for the public to provide input to RWMG on regional water management and/or on IRWMP?*
- *And what is the process being used by the RWMG to evaluate and respond to that input?*

Members of the public have the opportunity to provide comments and suggestions on the IRWM program and associated water resources management activities through multiple venues:

- Public comments at the RAC meetings and/or public workshops;
- Written comments submitted during public comment periods on IRWM Plan documents;
- Comments and questions in response to group presentations; and
- Personal communications to the RWMG staff identified on the website, email communications, newsletters, and/or at public meetings.

The RWMG staff members convey all comments and suggestions received on the IRWM program back to the larger RWMG group (refer to Table 5-1) for discussion. The comments are considered by the RWMG and, where appropriate to support IRWM implementation, raised for discussion at RAC or Workgroup meetings. An RWMG staff member may be assigned to relay a response back to the commenter.

When addressing IRWM Plan documents, all comments are compiled into a matrix wherein each comment is individually considered and responded to – either by making the requested changes in the document or by noting the reasons why not. This matrix is then available for review by all interested parties before the RAC and RWMG governing bodies consider the document for adoption. Deliberation of all public comments is critical to ensuring that truly integrated, regional solutions are implemented through the IRWM program.

5 Governance Structure

The existing governance structure – which includes the RWMG as management committee and the RAC as stakeholder advisory committee – has continued since establishment in December 2006 and adoption of the Plan in 2007. In December 2007, the RAC indicated support for the existing institutional structure and the RWMG agreed to commit funding support through the Proposition 84 planning grant (approximately 2 fiscal years). As such, the RWMG agencies adopted a new MOU in March 2009 that clarified their roles and responsibilities through 2013.

The Region's IRWM planning process has featured early involvement of water management organizations and affected stakeholders, including regulatory agencies, local jurisdictions, utilities, academic institutions, non-governmental organizations, special interest groups, and the interested public. Stakeholder involvement in key program decisions will remain an ongoing priority in future IRWM planning stages.

5-1 Existing Management Structure and Committees

This section addresses the following Reviewer questions:

- *Are the roles and responsibilities of the RWMG clearly supportive of regional planning?*
- *Does the RWMG operate in a collaborative manner?*
- *Is it clear how decisions are made, including establishing plan goals and objectives, prioritizing projects, financing RWMG activities, implementing plan activities, and making future revisions to the IRWM plan?*
- *Who participates in the decision making process?*
- *Are all of the RWMG members involved or are there designated committees?*

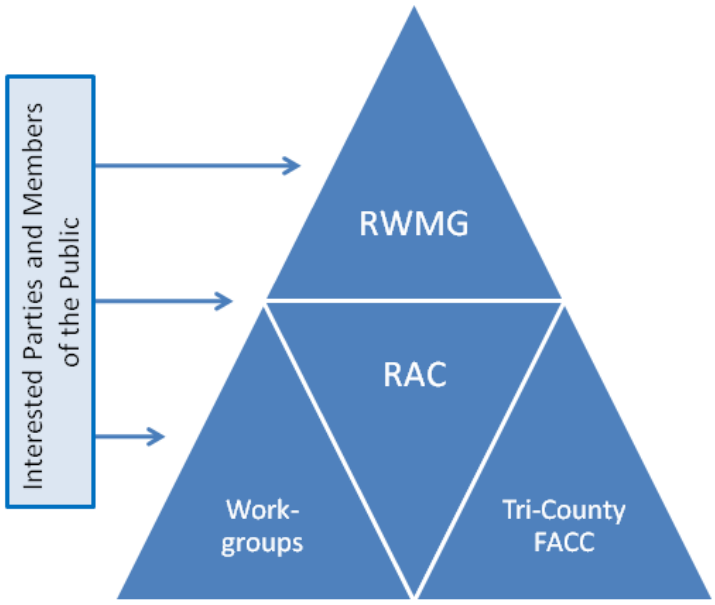
As illustrated in Figure 2-1 (**Section 2 of this RAP Application**), the San Diego IRWM organizational structure includes five major bodies – the three-party RWMG, the 29-member RAC, ad hoc Workgroups, the Tri-County FACC, and interested parties and members of the public. All of these stakeholders are essential to the IRWM decision-making process. Key decisions in the Region usually funnel up from the Workgroups and/or Tri-County FACC (if assigned) to the RAC to the RWMG governing bodies. Input from the public and interested parties is considered at each level of the process (see Figure 5-1).

Section N (pages N-1 to N-3) in the IRWM Plan describes the existing management structure and committees established for development of the IRWM Plan. The following sections provide updated information on the San Diego Region's existing governance structure.

Regional Water Management Group

As described in **Section 2 of this RAP Application**, the RWMG is comprised of the City of San Diego, the County of San Diego, and the Water Authority. This group was formally established in June 2005 through development and adoption of an MOU (FYs 2005-2009). In accordance with terms set forth in their current MOU (FYs 2009-2013), the three RWMG agencies are equal partners in management of the IRWM program and share equally in the costs to administer IRWM planning activities. The RWMG recognizes that cooperation and input from stakeholders throughout the region is a necessary part of an effective IRWM program. As a result, the RWMG has assumed a leadership role in identifying stakeholders and soliciting stakeholder input for the IRWM program. The RWMG meets bi-weekly to research, review, discuss, and formulate ideas and concepts for the ongoing IRWM program.

Figure 5-1: San Diego IRWM Decision Making Structure



Policy Level. At the policy level, the RWMG consists of the following governing bodies:

- San Diego County Water Authority Board of Directors, represented by Ken Weinberg (Director of Water Resources);
- City of San Diego Mayor and City Council, represented by Marsi Steirer (Deputy Director of Water Resources and Planning); and
- County of San Diego Board of Supervisors, represented by Kathleen Flannery (Land Use and Environment Group Finance and HR Director).

Through the actions taken by the respective Boards and the San Diego City Council and Mayor, the RWMG management has committed to directing staff to actively seek public involvement and stakeholder input; develop and submit Proposition 50 and Proposition 84 grant application(s) to the appropriate State agencies; and write and adopt an IRWM Plan Update. RWMG management is involved in key decisions both during and following RAC review and before presentation to the governing bodies for approval.

Staff Level. Staff from the RWMG agencies, with assistance from consultants, are responsible for day-to-day activities associated with ongoing management of the IRWM program. Participating staff members from each of the three RWMG agencies are listed in Table 2-5 (in **Section 2 of this RAP Application**). Based on the commitments jointly adopted in the MOU, RWMG staffs are responsible for the following activities:

- Developing and maintaining consultant contracts;
- Preparing and submitting Proposition 50 and Proposition 84 grant application(s), including the associated RAP Application;
- Developing and updating project lists for the grant applications;
- Updating the IRWM Plan in compliance with the *IRWM Grant Program Guidelines* and schedule established by DWR;
- Administering the Proposition 50 implementation grants in the San Diego region;
- Conducting stakeholder outreach and disseminating information to the public;

- Supporting the RAC and Workgroups to achieve consensus recommendations on draft documents; and
- Assisting with the transition to a long-term institutional structure.

During administration of the IRWM program, key decisions are submitted to the RAC for consideration and input – topics are generally researched and alternatives presented for RAC recommendations.

Regional Advisory Committee

As described in **Section 2 of this RAP Application**, the RAC was formed in December 2006 to assist in completion of the IRWM Plan and prioritization of projects both within the Plan and for future funding applications as they arise. The RAC consists of 25 voting members (refer to Table 2-2) with expertise in water supply, wastewater, recycled water, stormwater and urban runoff, natural resources, and environmental stewardship. Further, there are 4 non-voting members who provide perspectives for the resource agencies and adjacent IRWM regions. The RAC composition provides diverse representation from four functional areas related to water management (water supply, natural resources and watersheds, water quality, and at large members).

Decisions by the RAC are achieved via consensus (i.e., general agreement among all parties). Achieving consensus requires serious treatment of every RAC member's considered opinion. To date, the RAC has played a critical role in the following IRWM program decisions:

- Shaping and developing such key elements of the IRWM Plan as goals and objectives, long-term targets, and alternatives for a long-term institutional structure;
- Developing and implementing a project prioritization process for the IRWM Plan (i.e., project ranking criteria) and Proposition 50 Implementation Grant Application. The RAC also formed a Workgroup to develop a package of projects for inclusion in the Proposition 50 Implementation Grant Application;
- Identifying and directing the formation of Workgroups to facilitate progress toward short-term priorities in the IRWM Plan;
- Determining that the existing RWMG and RAC governance structure is successful and appropriate for the current stage of IRWM planning; and
- Reviewing and recommending a proposed Region boundary for this RAP Application.

During IRWM Plan development, the RAC met on a monthly basis to review Plan progress and provide comments and guidance on key Plan elements. The RAC currently meets on a bi-monthly basis to provide guidance on upcoming IRWM planning and funding application activities. The RAC may be convened more frequently, as needed. In addition to providing IRWM program updates, the RAC meetings are used as a forum for educating the group on issues that cut across various aspects of water management ("cross-threading") to build a knowledge base for ongoing IRWM planning.

A succession policy has been developed by the RWMG and RAC to identify replacements, should a RAC member need to step down for any reason. A departing RAC member identifies his or her own replacement to represent the specified functional area. Additionally, RAC members are permitted to identify an alternate who can attend meetings and vote in their place.

New members can be added to the RAC following RAC discussion and recommendation. Reformulation of the advisory body to ensure broad representation from all functional areas was a topic of discussion at the April 15, 2009 RAC meeting. An ad hoc Workgroup will be formed to revisit the RAC structure, in light of changes in the Region and Proposition 84 emphasis (i.e., flood control), and develop a recommendation for consideration by the larger group.

Future Roles and Responsibilities

Given the Region's commitment to the existing governance structure, the RAC will continue to play a critical role in the following upcoming decisions:

- Ongoing implementation of short-term priorities listed in the IRWM Plan, including assessment of local watershed management plans and San Diego Basin Plan water quality objectives;
- Developing and shaping the outreach strategy targeted for DACs and environmental justice communities;
- Refining and updating the project prioritization process for the Proposition 84 expedited grant cycle anticipated in late 2009;
- Shaping and developing materials necessary for the future IRWM Planning grant application;
- Reviewing progress on IRWM Plan implementation and refining the goals, objectives, and long-term targets contained within the IRWM Plan Update; and
- Shaping the ultimate transition to a long-term governance structure.

Ongoing RAC decision-making will result in the strengthening of the IRWM program as a forum for regional collaboration and guidance of the regional water management portfolio.

Workgroups

As described in **Section 2 of this RAP Application**, Workgroups are formed to enable participants in the IRWM program to work through particular topics and develop recommendations for the larger group. The RAC receives Workgroup recommendation(s) and subsequently makes its final recommendation(s) to the RWMG governing bodies. Workgroups members are nominated by the RAC and are not required to be RAC members; interested parties and members of the public are welcome given they have relevant experience and perspective to actively contribute to Workgroup decisions. Two Workgroups, described below, have been formed to date to support the IRWM program. As described above, a new ad hoc Workgroup will be formed to revisit the RAC structure, in light of changes in the Region and Proposition 84 emphasis (i.e., flood control), and develop a recommendation for consideration by the larger group.

New ad hoc Workgroups will be formed to address specific topics, issues, or components of the IRWM program, as directed by the RAC. By bringing divergent perspectives together in these Workgroups, the IRWM program facilitates the building of trust and communication. The Region will continue to utilize the RAC and its Workgroup to guide for IRWM planning and decision-making.

Proposition 50 Project Selection Workgroup

The Proposition 50 Project Selection Workgroup was established to develop a package of water management projects for inclusion within the Proposition 50 Implementation Grant Application. The Workgroup was expected to come to consensus agreement on a funding application package that was consistent with criteria established by the RAC, including how well the projects relate to the IRWM Plan (i.e. how well they accomplish Plan objectives and targets) and how well they can demonstrate integration with other projects. The Workgroup's final proposal package included 25 water management projects. (Note: The Proposition 50 grant package was ultimately reduced by DWR to 19 projects.)

The Workgroup was comprised of one member from each RWMG agency, one retail water entity, two natural resources organizations, one water quality entity, and two members at large (refer to Table 2-4). Workgroup members were asked to refrain from participating in discussion of projects for which they had been identified as a proponent, beneficiary, or partner.

The Workgroup presented their recommendations on the proposed project list to the RAC at the September 19, 2007 RAC meeting along with its recommended formula to reallocate funds if a project(s) dropped out before the January deadline at the December 11, 2007 RAC meeting. The Workgroup then presented its recommendations on the revision of two projects within the Proposition 50 application at the August 25, 2008 RAC meeting. The RAC approved all Workgroup recommendations via consensus.

Watershed Planning and Outreach Workgroup

A Watershed Panel was convened at the August 25, 2008 RAC meeting to to understand watershed planning efforts occuring within the Region, determine how those relate to the IRWM planning effort, and identify opportunities for the IRWM effort to collaborate with watershed planning groups in the Region. Based on this panel discussion, the RAC directed RWMG staff to convene a Workgroup to provide direction on outreach to watershed groups and DACs. Workgroup objectives include the following:

- Develop guidance for watershed groups on how to identify competitive multi-benefit projects for the IRWM grant cycle(s);
- Develop a strategy for outreach/coordination with watershed groups to encourage submittal of multi-benefit projects for the Proposition 84/1E funding cycles;
- Identify critical water supply and water quality needs for DACs within the Region's watersheds; and
- Develop a strategy for outreach/coordination with DACs to encourage submittal of multi-benefit projects for the Props 84/1E funding cycles that address critical needs.

The Watershed Planning and Outreach Workgroup was established by asking for RAC member volunteers at the December 10, 2008 RAC meeting (refer to Table 2-4). Further, the Workgroup has sought at least one representative from each of the Region's eleven hydrologic units to join the Workgroup. The Workgroup presented its initial progress on an outreach strategy targeting DACs at the February 11, 2009 RAC meeting.

Tri-County FACC

Governance of the San Diego Funding Area was developed to enhance IRWM planning, particularly in watershed areas that extend beyond the planning boundaries of the San Diego Region. This governance structure is documented in an MOU jointly developed and adopted by the three regions.

History and Background

In February 2008, the three planning regions representing the San Diego Funding Area began coordination to identify cooperation opportunities, share information, and determine equitable allocation of funding that allowed certainty and trust to be built. Through regular meetings over the past 15 months, the Tri-County FACC developed the MOU, which was reviewed and approved by all RWMG agencies from each planning region. Each public agency was represented by staff, agency council, and executive management in reviewing the MOU. This process culminated in full execution of the *MOU for Integrated Regional Water Management Planning and Funding in the San Diego Funding Area* on April 28, 2009 (see Attachment C).

In June 2008, the Tri-County FACC sent a letter to DWR offering to work directly with DWR as a test pilot in inter-regional collaboration. DWR staff encouraged the development of alternatives to consider governance and organization of the regions (see Attachment E). This interaction was very beneficial because it allowed FACC members to explore ways to work together and provided a timely opportunity to review progress to date with the RWMG agencies and the advisory committees of all the planning regions.

Summary of the Governance MOU

The MOU provides for a long-term stable group to coordinate current and future issues related to IRWM planning in the larger Funding Area. The coordinating role of the committee provides for MOU renewal to support the IRWM program beyond the current grant cycle. Funding allocations are specific to Proposition 84, because of the nature and specifics of the bond language.

The MOU accomplishes the following for the Funding Area:

- Defines terms, which enables all parties to use a common language;
- Clearly identifies boundaries of the three planning regions covering the entire Funding Area;
- Identifies Watershed Overlay Areas to facilitate planning and coordination in cross-boundary watersheds;
- Creates an ongoing process for coordination and planning in the Funding Area and in the Overlay Areas;

- Provides for advisory committee cross membership to promote understanding, communication, and cooperation;
- Provides for IRWM plan consistency, common references, and coordination of grant submittals to facilitate DWR's review process;
- Determines the funding allocation among the planning regions for Proposition 84; and
- Identifies a process for identification and funding of common programs found by the Tri-County FACC to be of high value across the Funding Area.

In the unlikely event that any RWMG agency or group withdraws from the Tri-County FACC, members of the Tri-County FACC will continue to coordinate with the withdrawn agency and consider them as a stakeholder to the maximum extent possible. Additionally, the remaining members will negotiate with the withdrawn member to determine fair allocation of funding within the principles provided in the MOU agreement and will notify DWR as to the outcome of these negotiation and coordination efforts.

Future Efforts and Cooperation

The Tri-County FACC is working to identify areas of cooperation and align planning efforts both to increase efficiency and to better inform each planning region about the efforts and plans of the others. The Tri-County FACC will build a foundation that ensures sustainable water resources planning within the Funding Area by serving as an umbrella organization, allowing the three IRWM regions to coordinate water resources planning activities and pool resources. Because man-made water infrastructure systems are the key water management units in the Funding Area, the planning regions reflect this reality and cross-boundary watershed issues are addressed via a collaborative subcommittee process.

The three RWMGs will undertake coordinated planning within the Watershed Overlay Areas, one for the Santa Margarita River watershed area and one for the San Mateo Creek watershed area. A Watershed Overlay Subcommittee will be organized to consider issues and develop projects pertaining to the Overlay Areas. Water resources projects and programs that may benefit from Funding Area-wide coordination, administration, funding, or support will be identified by the Tri-County FACC and/or Subcommittee. Projects within the Watershed Overlay Areas identified as valuable and benefiting from cross-boundary coordination will be identified in the three IRWM project selection processes. A project may be proposed by a single RWMG or by several where relevant to the Overlay Areas. However, the Tri-County FACC will coordinate to ensure no redundancy in project costs among the proposals.

5-2 Decision Making Process

This section addresses the following Reviewer questions:

- *Does the governance structure allow only certain members to vote on decisions?*
- *Does the decision making process allow for the participation of stakeholders and smaller entities?*
- *Do members have to contribute financially to the RWMG to be allowed to vote?*
- *Does the group require members to contribute to the group's expenses, and if not, how will the group identify a budget for its operations, such as plan updates?*

In the San Diego Region, the RWMG and RAC are jointly responsible for implementing the IRWM program. Through bi-monthly meetings, the RAC provides ongoing recommendations to the RWMG governing bodies on topics relevant to the IRWM program, including establishing Plan goals and objectives, prioritizing projects, and implementing the short-term priorities identified in the Plan. Additionally, the RAC – as a voice for the IRWM program – has begun developing and submitting comments on other water-related efforts (such as the Regional Board's Basin Plan Triennial Review).

Twenty-five members of the RAC, representing retail water entities, water quality, natural resources and watersheds, and members at-large, are allowed to vote on decisions. These RAC members represent both large and small stakeholder organizations within the Region. The four non-voting members of the RAC represent the regulatory agencies and members of adjacent IRWM planning regions; these RAC members are invited to weigh in on RAC discussions from an advisory capacity, but are excluded from decisions that help to define the regional water

management portfolio. As demonstrated through the meeting summaries from the RAC and its Workgroups, decision-making in the San Diego Region is achieved via consensus. Key decisions for the IRWM program are made following thorough discussion and vetting by all interested parties. Members of the RAC and its Workgroups are not required to contribute financially to the IRWM program.

Memorandum of Understanding

The RWMG's MOU (FYs 2009-2013) defines the RAC as a project advisory committee. The MOU clearly states that the RWMG agencies will base key decisions and guidance on the RAC recommendations.

> "The RWMG agencies are committed to a cooperative relationship with the RAC and will incorporate the RAC's consensus recommendations in draft documents prepared for presentations to the governing bodies. The governing bodies will give primary consideration to the recommendations of the RAC as part of any decision related to the following:
>
> - Adoption of the updated IRWM Plan for the San Diego region.
> - Development of the San Diego planning region for DWR's Region Approval Process, which precedes grant applications under the combined Proposition 84 and Proposition 1E grant program.
> - Criteria for prioritizing projects for funding under the Proposition 84 and Proposition 1E grant programs.
> - Approval and submission of grant applications.
> - Transition responsibility for implementation of the IRWM Plan to a new institutional structure."

The RWMG agencies are equal partners in the development and submission of State grant applications, including this RAP Application. All three RWMG agencies must have necessary reviews and approvals completed by their respective organizations before submittal of grant applications.

The MOU requires equal contributions from the City, the County, and the Water Authority toward management of the IRWM program through 2013. Funding under the MOU shall not exceed $900,000; each RWMG agency shall provide up to a maximum amount of $300,000, as well as in-kind services for IRWM planning, administration, and grant applications.

Program Administration

The San Diego IRWM program has historically been financed by the Water Authority, the City, and the County, as members of the RWMG agencies managing the regional effort. Both the 2007 and 2009 MOUs adopted by the RWMG specified monetary contributions and in-kind services for program administration, including submittal of a planning grant application for the IRWM Plan Update. The IRWM program has and will continue to be managed adaptively, based on regional need and funding availability.

5-3 Achieving IRWM Plan Targets

This section addresses the following Reviewer questions:

- *Can the RWMG governance structure facilitate the sustained development of the IRWM region now and beyond the current IRWM funding programs?*
- *Will the governance structure facilitate development of a single collaborative water management portfolio, prioritized on the regional goals and objectives of the IRWM region?*

The current management and committee structure has made substantial progress toward achieving the targets established in **Section C (pages C-2 to C-17) in the IRWM Plan**. The San Diego IRWM program is an umbrella effort focuses existing water management and planning activities from a regional perspective. Table 5-1 describes the measures of success accomplished by the RWMG, RAC, and various stakeholders in achieving the Plan targets. As the Region periodically evaluates progress toward these measureable targets, the RWMG and RAC will determine if and when transition to a long-term institutional structure is necessary to further those objectives.

Sustained Regional Water Management

The IRWM planning process builds upon existing planning authorities within the region and coalesces water management priorities across functional areas. Bringing together diverse stakeholders from different facets of water management allows the Region to understand where synergistic opportunities in program, infrastructure, and data needs exist. This understanding then enables the agencies and organizations in the Region to develop partnerships, pool resources, and incorporate increasingly holistic, sustainable approaches to existing planning and program design. Facilitating communications among planners and project proponents, the RWMG has commissioned an on-line database aimed at providing universal access to information about IRWM planning and projects in the San Diego region. This process of regional partnering is leading the Region towards a collaborative water management portfolio, wherein shared projects and programs ensure water supply reliability, improved water quality, and restored habitats.

The Region's current governance structure will facilitate the sustained development of regional water management and the IRWM process. The partnerships between water retailers, wastewater agencies, stormwater managers, and environmental managers that have developed through this regional effort have created a structure for ongoing coordination. The IRWM program serves the following important regional functions:

- The IRWM Plan provides guidance on regional goals, objectives, and water management strategies to direct development and refinement of water resources projects at the local level. This ensures that local agencies are implementing projects and programs that will lead to a regional water management portfolio that fully achieves the IRWM Plan targets (see Table 5-1).
- The IRWM program (via meetings and workshops) provides a forum for members of different functional areas to interact and discuss their perspectives on critical water-related topics. This type of interaction, combined with the direction provided in the IRWM Plan, will lead to new and innovative partnerships.
- The RWMG, as managing entity of the IRWM program, has the authority to prepare and submit grant applications through a variety of sources, including DWR's IRWM grant program. With project lists determined by the RWMG, RAC, and its Workgroups, these grant applications provide incentives for stakeholders to engage in critical decisions regarding the future of water management in the San Diego Region.

Each of these functions is helping to build up the San Diego IRWM program as an independent and sustained regional forum, both now and beyond the State IRWM grant funding programs.

5-4 Formulating a Long-Term Institutional Structure

While formulating a long-term institutional structure was called out in the IRWM Plan as a short-term priority, the RAC and RWMG discussed the issue and a consensus decision was made to retain the existing governance structure in the near term. As shown above, the existing structure has been successful in managing progress toward the IRWM Plan targets. When the RAC indicated satisfaction with governance to date, the RWMG developed a new MOU and funding commitment to maintain the existing structure through 2013 (see Attachment A). As needs and conditions change, however, the Region has a mechanism for considering alternatives for a long-term institutional structure. The IRWM program took several incremental steps toward a long-term structure with identification of the organizational models in the IRWM Plan.

Further, the RWMG and RAC have engaged in ongoing discussions about the role of watersheds in long-term governance. Although some local advocates recommend water management planning and project selection at the watershed scale, some of the Region's watersheds do not have organized groups that can participate in IRWM planning – this creates a significant gap in the Region's potential to organize in this manner. Current discussions with the Watershed Planning and Outreach Workgroup revolve around the type of support the IRWM program could offer to watersheds in various stages of organizational capacity. Discussion continue on determining an institutional structure that balances regional water management, such as water and wastewater infrastructure that crosses watershed boundaries, with traditional watershed boundaries.

Table 5-1
Progress Toward Achieving IRWM Plan Targets

Objective	Targets for Achieving Objective	Progress to Date
A: Maximize stakeholder/ community involvement and stewardship.	Target 1. Develop by 2009 a regional IRWM website to provide centralized public access to water management data and information.	✓ Complete. Website is available at: www.sdirwmp.org
	Target 2. Develop by 2008 and implement by 2010 regional approaches to water management education.	✓ In progress. The MS4 Copermittees have developed a regional outreach plan to address stormwater management.
	Target 3. Conduct water management outreach and solicit input from 2% of Region's population each year, including underserved and disadvantaged communities.	✓ In progress. The Region has continued outreach to the public and DACs through RAC meetings, group presentations, the website, etc.
	Target 4. Provide "hands-on" stewardship opportunities in the Region's watersheds to 1% of Region's population each year, including underserved and disadvantaged communities.	✓ In progress. The Region's community and environmental organizations provide ongoing stewardship opportunities for local residents: • San Diego River Park Foundation • Groundwork San Diego-Chollas Creek • San Diego CoastKeeper • San Elijo Lagoon Conservancy • San Dieguito River Valley Conservancy • Lakeside River Park Conservancy
B: Effectively obtain, manage, and assess water resource data and information.	Target 1. Develop standards for the integration and assessment of water management data and information by 2010.	✓ In progress. The RWMG/RAC are beginning development of an online project database for regional stakeholders. ✓ The County is embarking on a needs assessment for watershed information sharing.
	Target 2. Provide centralized public access to key water management data sets by 2010.	✓ In progress. The RWMG/RAC are beginning development of an online project database for regional stakeholders. ✓ The County is embarking on a needs assessment for watershed information sharing.
C: Further scientific and technical foundation of water management.	Target 1. By 2010, develop an agreed-upon system and metrics for tracking the progress of Basin Plan validation efforts through coordination with Regional Board staff.	Nothing to report.
	Target 2. Conduct water quality assessment for beneficial use attainment within 75 percent of surface waters by 2015.	Nothing to report.
	Target 3. Assess and validate Basin Plan beneficial uses and water quality objectives for the Region's watersheds by 2017.	Nothing to report.
	Target 4. By 2013, develop an agreed-upon system and metrics for tracking groundwater assessment information.	Nothing to report.
	Target 5. By 2015, develop an agreed-upon system and metrics for evaluating ocean water quality and marine habitat.	Nothing to report.
D: Develop and maintain a diverse mix of water resources.	Target 1. Increase water conservation savings from about 51,090 AFY in 2006 to at least 79,960 AFY by 2010 and 108,400 AFY by 2030.	✓ In progress. The Water Authority and member agencies have increased education and outreach for water conservation, given the current Statewide drought. Conservation savings amounted to 56,000 AFY in 2008.

Table 5-1
Progress Toward Achieving IRWM Plan Targets

Objective	Targets for Achieving Objective	Progress to Date
	Target 2. Increase seawater desalination capability within the region from zero AFY to 34,690 AFY by 2015.	✓ In progress. The 50 MGD Carlsbad Desalination Plant, a partnership between the City of Carlsbad and Poseidon Resources, has successfully obtained regulatory permits and is ready to begin construction.
	Target 3. Increase recycled water use from about 14,830 AFY in 2006 to 33,670 AFY by 2010 and 47,580 AFY by 2030.	✓ In progress. The City of San Diego has expanded the NCWRP recycled water distribution system and an IPR pilot project is underway.
	Target 4. Increase groundwater supply within the Water Authority service area from about 14,960 AFY in 2006 to 28,580 AFY by 2010 and 31,180 AFY by 2030.	✓ In progress. The Helix Water District and Padre Dam MWD are partnering on a groundwater recharge project.
	Target 5. Implement Colorado River conservation and transfer programs, increasing deliveries from 35,000 AFY in 2006 to 277,700 AFY by 2030.	✓ In progress. The Water Authority received 50,000 AFY in water transfers from the Colorado River in 2008, as well as 30,600 AFY from canal-lining projects.
	Target 6. Include an analysis in the Water Authority 2010 Urban Water Management Plan that assesses the effect of climate change on future water supplies.	✓ In progress. The Water Authority will begin work on the UWMP in 2009-2010.
	Target 7. Develop and implement regional drinking water source protection guidelines for the Region by 2012.	Nothing to report.
	Target 8. Meet groundwater supply and water quality objectives identified in the County's General Plan 2020 for groundwater-dependent communities by 2012.	✓ In progress. The Helix Water District and Padre Dam MWD are partnering on a groundwater recharge project.
E: Construct, operate, and maintain a reliable infrastructure system.	Target 1. Develop facilities and manage supplies to ensure adequate emergency and carry-over deliveries.	✓ In progress. The Water Authority and partners have been working on ESP since 1998 and are scheduled to begin the final phase program in late spring 2009. Work is scheduled for completion by 2012.
	Target 2. Increase local treatment of imported and local surface waters from 597 mgd to 860 mgd in 2010 and 920 mgd in 2030.	✓ In progress. The Water Authority completed the Twin Oaks Valley Treatment Plant in 2008, adding 100 mgd capacity to regional total. ✓ In progress. The 50 MGD Carlsbad Desalination Plant, a partnership between the City of Carlsbad and Poseidon Resources, has successfully obtained regulatory permits and is ready to begin construction.
	Target 3. Develop the conveyance facilities necessary to deliver a reliable supply and assure adequate resources to maintain existing conveyance systems.	✓ In progress. The Water Authority is constructing two pipelines to augment the regional conveyance system and emergency delivery capacity. The Lake Hodges pipeline is scheduled for completion in 2010 and the San Vicente pipeline in 2013.
	Target 4. Develop the infrastructure needed to support the targets identified for developing recycled water, desalination, and groundwater supplies.	Nothing to report.

Table 5-1
Progress Toward Achieving IRWM Plan Targets

Objective	Targets for Achieving Objective	Progress to Date
F: Reduce the negative effects on waterways and watershed health caused by hydromodification and flooding.	Target 1. Develop and implement regional standards for Low Impact Development (LID) practices by 2010.	✓ In progress. In January 2009, the MS4 Copermittees' completed a Countywide Model Standard Urban Stormwater Mitigation Plan (SUSMP), which includes a design guide for LID. Each Copermittee will adopt the new SUSMP standards by January 2010.
	Target 2. Develop and implement regional approaches to hydromodification management by 2010.	✓ In progress. The MS4 Copermittees are developing a Hydromodification Plan (HMP) to be submitted to the San Diego Regional Board for approval. Once approved, each Copermittee will adopt the HMP criteria to manage increases in runoff discharge rates and duration for priority development projects. Final approval of the HMP is expected by the summer of 2010.
	Target 3. By 2010, implement a system to track rates of change in area of impervious surfaces regionally.	✓ In progress. A model of impervious surfaces for the entire San Diego River watershed has been completed. This model has refined coefficients from high resolution aerial photographs that are unique to San Diego County and allow for reliable prediction of changes in imperviousness due to development. This model can be expanded to include the whole region.
G: Effectively reduce sources of pollutants and environmental stressors.	Target 1. Implement Total Maximum Daily Loads (TMDLs) according to established schedules.	✓ In progress. The jurisdictions with implementation responsibilities are currently on schedule with the adopted TMDLs as listed below: • Rainbow Creek Nitrogen and Phosphorus TMDL • Shelter Island Yacht Basin Copper TMDL • Chollas Creek Diazinon TMDL • Chollas Creek Copper, Lead and Zinc TMDL
	Target 2. Reduce or avoid the need for TMDLs by monitoring and managing impacts to receiving waters, with an emphasis on 303(d)-listed water bodies and other Environmentally Sensitive Areas.	Nothing to report.
	Target 3. Develop by 2012 a regional management plan for Total Dissolved Solids (TDS).	Nothing to report.
	Target 4. Develop and implement comprehensive source management strategies to address regionally-significant constituents (e.g., pathogens, nutrients, sediments).	Nothing to report.
	Target 5. Reduce the frequency of sanitary sewer overflows in excess of 1,000 gallons from 180 overflows per year in 2005 to 120 overflows per year in 2012.	Nothing to report.
	Target 6. Reduce the volume of sanitary sewer overflows per mile of collection system.	Nothing to report.
H: Protect, restore and maintain habitat and open space.	Target 1. Conserve by 2012 a minimum of 10,000 acres of habitat and open space, including functional riparian habitat and associated buffer habitat, and functional wetland habitat.	✓ In progress. The San Diego River Park Foundation is working to acquire, restore, and protect 220 acres of habitat adjacent to El Capitan reservoir.

Table 5-1
Progress Toward Achieving IRWM Plan Targets

Objective	Targets for Achieving Objective	Progress to Date
	Target 2. Restore by 2012 a minimum of 1,000 acres of habitat and open space, functional riparian habitat and associated buffer habitat, and functional wetland habitat.	✓ In progress. The San Diego River Park Foundation is working to acquire, restore, and protect 220 acres of habitat adjacent to El Capitan reservoir.
	Target 3. Remove and control a minimum of 1,000 acres of non-native invasive plants by 2012.[2]	✓ In progress. The Mission Resource Conservation District is working to restore 373 acres of riparian habitat by targeting invasive non-native species for removal.
	Target 4. Monitor, manage, control, and prevent establishment of nuisance aquatic species in the Region.	Nothing to report.
I: Optimize water-based recreational opportunities.	Target 1. Develop 200 acres of water-based recreational open space that focuses on underserved areas and ensures equal access for disadvantaged communities.	Nothing to report.
	Target 2. By 2015 provide 20 new public access points (boat launch facilities, fishing floats or piers, swim beaches, trails, stairs, parking areas, or similar) to recreational surface waters.	Nothing to report.

Organizational Options for a Long-Term Institutional Structure

Following review of numerous examples of existing institutional structures, **Section G (pages G-2 to G-11) of the IRWM Plan** presented two basic long-term organizational approaches. Several variations on the structure of these organizations (i.e., organized by functional areas vs. watersheds) are also presented in the Plan.

Regional Joint Powers Authority. The RWMG members and other agencies could create a regional legal authority (Joint Powers Authority or JPA) to oversee IRWM Plan implementation. The JPA could include all interested agencies with applicable vested powers as members. Under a JPA, formal membership is limited to agencies that share vested powers and would therefore exclude non-governmental organizations. The JPA could establish advisory committees and/or levels of associate membership to provide for water management input from stakeholders, non-government organizations, and regulatory agencies.

Regional Committee/Council through a MOU. The RWMG and stakeholders could form a regional committee or council through a structure created under a MOU. The MOU could include provisions for formal governing meetings of the committee/council and the hiring of professional staff. The MOU could also include all interested government agencies and non-government groups. Membership is achieved through signing a MOU, which can be easily and quickly revised. Additionally, the MOU can be structured to provide for tiered levels of membership.

After review of the two structural options and input received from the RAC, the RWMG recommends that the MOU approach be pursued initially in formulating the Region's IRWM institutional structure. As IRWM planning matures through implementation, the structure could evolve into a more formal structure, such as a JPA or non-profit corporation. However, the RAC and RWMG will continue their current roles of overseeing IRWM program implementation until a new institutional structure is deemed necessary.

Organizational Issues to be Resolved

As described above, the RAC and RWMG currently support the existing governance structure. When the Region deems it necessary to select a long-term institutional structure, several key issues remain to be resolved before the governance structure may be changed.

- **Composition of the RWMG**. An appropriate composition of the management committee must be determined that represents a broad range of water-related interests, while complying with the state's definition of an RWMG and maintaining a manageable size. The current RWMG composition provides representation for the water agencies supplying approximately 98 percent of the residents of San Diego County (via the Water Authority), as well as the 21 Copermittees subject to the Countywide MS4 stormwater permit (via the County).

- **Funding Mechanism**. The key element to successful long-term IRWM planning is a secure, ongoing funding stream to complete the responsibilities associated with program implementation. Whereas establishment of a 'pay to play' model is not desired, many existing regional organizations – such the CUWCC, which follows the MOU approach – do require payment of annual membership dues.
- **Administering Entity**. A public agency or non-profit corporation must be identified or established as the administering entity. This entity would be responsible for items such as contracting for consultant services to assist in IRWM planning, receiving and distributing grant funds, and submitting grant applications on behalf of the Region. Based on current IRWM program expenses, program administration could require the commitment of several full time equivalent employees.
- **Ongoing Role of the RAC**. The future institutional structure must be organized to ensure transparency and inclusive stakeholder participation in the RAC and its Workgroups. The long-term institutional structure must have the ability to fully represent the Region by understanding and engaging the diverse stakeholder interests associated with water management in coastal San Diego County.

6 IRWM Region Boundary

The following section identifies the San Diego IRWM Region boundary, as well as the water management and land use components that contribute to its determination. **Section 7 of this RAP Application** contains detailed discussion of the Region's water management components – including watersheds, surface water resources, coastal waters, groundwater resources, the imported water system, local water supplies, and wastewater and recycled water facilities.

6-1 San Diego IRWM Region

This section addresses the following Reviewer questions:

- *Does it appear that the IRWM region boundary was based solely on political boundaries?*
- *Is it clear what is the basis and rationale for the IRWM region boundary?*
- *Does it make sense for long term water management?*
- *Does the IRWM region boundary consider multiple water management boundaries such as watersheds and groundwater basins?*
- *Does the region boundary appear appropriate given the context of the region's unique water management issues?*

The San Diego Region, as defined by the adopted IRWM Plan and proposed in this RAP Application, includes the portion of San Diego County that is tributary to coastal waters (refer to Figure 2-1). **Section B (pages B-1 to B-76) of the IRWM Plan** describes the water-related, ecological, environmental, social and economic characteristics of the Region. Important internal boundaries affecting water management, including the RWMG agencies, municipalities and land use agencies, Water Authority member agencies, and wastewater agencies, are described in **Section B.4 (pages B-23 to B-28)**. Water-related infrastructure in the Region, including imported and local water storage, treatment and distribution, wastewater treatment, and recycled water production and distribution, are described in **Section B.9 (pages B-54 to B-64)**.

The Region contains diverse water resources including streams, rivers, lagoons, impoundments, groundwater, and the ocean. Surface and groundwater quality and quantity are described in **Sections B.5 and B.6 (pages B-28 through B-46)**. Water supply and demand forecasts through 2030 are discussed in **Section B.10 (page B-65)**. The Region also contains more rare, threatened, and endangered plant species than any comparable land area in the continental U.S. **Section B.7 (pages B-49 to B-52)** describes the Region's wide-ranging resources.

Section B.2 (pages B-4 to B-13) discusses the social and cultural characteristics and economic conditions within the Region. The *Public Outreach and Disadvantaged & Environmental Justice Community Involvement Plan* **(Appendix 8)** ensures that DACs are invited to participate in the planning process and benefit from Plan implementation. The Region's economy is driven by diverse factors, described in **Section B (pages B-10 to B-11)**.

Defining Boundaries for the Region

The San Diego Region consists of eleven parallel and similar hydrologic units within San Diego County that discharge to coastal waters. The Region boundaries were initially considered on the basis of regulatory and jurisdictional boundaries, similarities in hydrology and watershed characteristics, and a common imported water supply. As such, the Region established the following boundaries: the drainage divide to the east, international border to the south, coastline to the west, and County border to the north.

At DWR's suggestion, the RWMG and RAC reconsidered the basis for the San Diego IRWM Region boundary. Although the Region assessed potential consolidation with the adjacent South Riverside and Orange counties over the course of a year-long effort, the RWMG and RAC determined that the San Diego Region has more differentiators than similarities with these adjacent areas and should, therefore, remain a separate management entity. **Section 8 of this RAP Application** provides a detailed explanation of the differences between the three IRWM regions.

Advantages of the proposed San Diego Region boundary include scalability, in the sense that local water management agencies can and do engage with stakeholders within an accessible geographic range. The proposed Region maintains the benefits of existing outreach structures and, because of its compact size, ensures that interested parties may attend local meetings and workshops. Proposed coordination structures (i.e., Tri-County FACC) will ensure partnerships are established where appropriate and planning efforts are not duplicated across regions. The sections below provide additional justification for the proposed San Diego Region.

Water Supply

In 2008, approximately 88 percent of the Region's water supply was imported. Seventy-six percent of this water – a blend of SWP and CRA supplies -- was purchased by the Water Authority from Metropolitan. The rest of the supply also came from the Colorado River, resulting from a conservation and transfer agreement between the Water Authority and IID and the lining by the Water Authority of the All-American and Coachella canals. The Water Authority – whose service area is located entirely within the County – serves as the water wholesaler for all 24 member agencies receiving imported water within San Diego County. The Water Authority's member agencies serve approximately 98 percent of the County's residents. Further, construction of the 50 MGD Carlsbad Desalination Plant will provide nine member agencies with a secure and reliable local water supply. The Region's imported water supply infrastructure traverses watershed and jurisdictional boundaries within the County and requires coordination among local agencies and entities to address water supply, water quality, and habitat issues.

Groundwater

Groundwater production in the San Diego Region is limited by lack of storage capacity in local aquifers, availability of groundwater recharge, and degraded water quality. The Water Authority does not utilize groundwater extraction to meet member agency needs. Several local water agencies, including Padre Dam MWD and Helix Water District, are collaborating on conjunctive use and recycled water recharge projects to expand groundwater capabilities. Others, including Camp Pendleton, the City of Oceanside and Sweetwater Authority, engage in groundwater extraction and disinfection. However, groundwater extraction and recharge facilities are localized within the Region.

Recycled Water

Water recycling (developing a usable water supply from wastewater) is an important component of the Region's local water resources. The Region's tertiary treated recycled water, which is suitable for all landscape and agricultural irrigation uses, is produced at 17 reclamation facilities within the County. Recycled water supplies from these facilities are reused within the Region boundary or discharged to deep ocean outfalls.

Land Use and Planning

The Region is located entirely within San Diego County, which makes coordination of land use and environmental planning effective. The County and eighteen incorporated municipalities have local land use authority, including the cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista. SANDAG, the regional planning and transportation agency, is comprised of the 18 cities and County government. The Port of San Diego is governed by a seven-member Board of Port Commissioners, including one commissioner each from the cities of Chula Vista, Coronado, Imperial Beach and National City, and three commissioners from the City of San Diego. The San Diego County Regional Airport Authority, which ensures adoption of land use plans that protect public health and safety surrounding all 16 of the county's airports, is governed by an appointed board of nine members who represent all areas of San Diego County and three ex-officio members.

Hydrologic Characteristics

The Region includes eleven parallel hydrologic units draining to the Pacific Ocean, seven of which comprise watersheds for major rivers and four of which are comprised of a series of small watersheds that drain to common coastal waters. Each of the Region's east-west trending hydrologic units flow from elevated regions in the east toward coastal lagoons, estuaries, or bays in the west. Each of the hydrologic units features similar habitats at similar elevations, and share habitat restoration and protection needs. A significant majority of the volume of surface flow in each of the hydrologic units is comprised of runoff from seasonal precipitation that predominantly occurs during the winter and spring months. Surface flows during summer and fall months are typically low, and consist of urban runoff, agricultural runoff, and surfacing groundwater.

Wastewater

Wastewater generated in the Region is either locally recycled or exported to one of the regional ocean outfall disposal systems. The Region's urban wastewater agencies have organized – both through the formation of JPAs and through interagency contracts – into five multi-jurisdictional wastewater systems based around the Region's five deep-water ocean outfalls. This shared infrastructure requires a high level of collaboration and coordination between local agencies within the Region. Further, the Region's agencies are collaborating with IBWC to address trash and wastewater pollution in the shared Tijuana River watershed.

Water Quality and Stormwater Regulation

The Region is entirely within the jurisdiction of the San Diego Regional Board (designated as Region 9 among California's Regional Boards). Water quality and wastewater discharges within the Region are regulated by policies and regulations established in the Regional Board's Water Quality Control Plan for the San Diego Basin (Basin Plan). Ocean and marine water quality is regulated by policies and regulations established in the Basin Plan (Regional Board, 1994), Ocean Plan (2005), and Enclosed Bays and Estuaries Plan (1991).

Municipal stormwater runoff within the Region is regulated through a single National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System Permit (MS4 Permit) issued by the Regional Board to 21 Copermittees (Order No. R9-2007-0001, NPDES CAS0108758) with the County of San Diego designated as the Principal Copermittee. Two of the three RWMG agencies (the County and City of San Diego) comprise the largest land area among the 21 regulated Copermittees.

Natural Communities

The Region is considered a 'hot spot' for containing rare, threatened, and endangered plant species. Led by the County, the Region has established the San Diego County MSCP and its three subarea plans (with the City preparing an MSCP for lands within their jurisdiction). These plans identify the most important areas for conservation of threatened or endangered species and serve as a basis for state and federal permits to take listed species in exchange for conserving their habitat.

6-2 Mapping the IRWM Region

This section addresses the following Reviewer questions:

- *Does the IRWM region encompass the service areas of multiple local agencies?*
- *Does it appear that the IRWM region is structured to maximize opportunities to integrate water management activities related to natural and man-made water systems, including water supply reliability, water quality, environmental stewardship, and flood management?*

The following maps provide an overview of the San Diego IRWM Region as it compares to and/or aligns with key water management components. Major rivers, surface water bodies, and highways are shown on each map. **Section 7.5 of this RAP Application** fully describes the Region's water management components.

Figure 6-1: Land Use Planning. This map illustrates the political and jurisdictional boundaries within the Region, including cities, counties, State and federal lands, Tribal lands, military lands, and regional planning agencies. As described in **Section B (pages B-2, B-5, and B-9) of the IRWM Plan**, the Region contains 18 municipalities, several major military bases, large federal land holdings managed by the U.S. Bureau of Land Management and the U.S. Forest Service, and 18 Tribal Nation Reservations.

- Multiple land use agency boundaries (the County, SANDAG, municipalities, and Camp Pendleton) align with the Region's borders. Cooperation with local planning agencies will enable development of water resources projects that reliably serve the local population.

Figure 6-2: Water Supply. This map illustrates the water supply and irrigation agencies in the Region. The Water Authority and its 24 member agencies, as well as over 50 community (15-200 connections) and non-transient (school and business) small water systems, are contained within the proposed Region boundary (a total of 162 systems countywide). **Section 2.2 of this RAP Application** provides a detailed list of the water supply agencies within the Region.

- Several member agencies (Fallbrook PUD, Rainbow MWD, and Camp Pendleton) align with the Region's northern border, while others (City of San Diego and Otay WD) align with the southern border. The Region boundary is an appropriate scale to coordinate and integrate the activities of local water supply agencies, particularly given their existing relationship to the Water Authority.

Figure 6-3: Wastewater. This map illustrates the wastewater and sanitation districts within the Region. Many of the water agencies and municipalities identified above also provide wastewater and reclamation services. (Note: The City utility districts are based on their municipal boundaries. Data to show their actual sanitation district boundaries does not currently exist, so there may be some overlap.) **Section 2.2 of this RAP Application** provides a detailed list of the wastewater agencies within the Region.

- Several wastewater agencies (Fallbrook PUD, Rainbow MWD, and Camp Pendleton) comprise the Region's northern border, while others (City of San Diego and Otay WD) align with the southern border. Many of the wastewater agencies are administered by water suppliers and/or municipalities that also fit neatly into the Region boundary.

Figure 6-4: Water Quality. This map illustrates the water quality regulatory boundaries and factors influencing the Region, including Regional Board boundaries, NPDES MS4 stormwater permit boundaries, and impaired water bodies. The NPDES MS4 Permit, issued by the Regional Board, regulates discharges from 21 municipal sewer systems in the Region. **Table B-14 (page B-36) of the IRWM Plan** presents 303(d) impaired water body listings for inland surface waters in the Region. Over 40 inland surface water bodies, located in ten of the Region's eleven hydrologic units, are currently designated as not attaining applicable water quality objectives (State Board 2006).

- The proposed Region boundary aligns with the northern, western, and southern MS4 permit boundary. Coordination among the Copermittees enables more effective implementation of stormwater management and pollution prevention programs.

Figure 6-5: Groundwater. This map illustrates the groundwater basins in the Region, as defined in DWR Bulletin 118, Update 2003 – California's Groundwater. **Section 7.5 of this RAP Application** provides further information on the Region's groundwater resources.

- As shown, the Region contains small fragmented aquifers that do not contribute to the regional boundary. However, the IRWM program provides stakeholders with an opportunity to share information about groundwater recharge, conjunctive use, and demineralization techniques.

Figure 6-6: Hydrologic Units. This map illustrates the Region's hydrologic units. As described in **Section B (pages B-14 to B-22) of the IRWM Plan** and **Section 7.5 of this RAP Application**, the Region is comprised of eleven hydrologic units, four of which (San Juan, Carlsbad, Peñasquitos, and Pueblo) are comprised of several smaller parallel watersheds that drain to common coastal waters and seven of which (Santa Margarita, San Luis Rey, San Dieguito, San Diego, Sweetwater, Otay, and Tijuana) constitute watersheds for the Region's primary rivers.

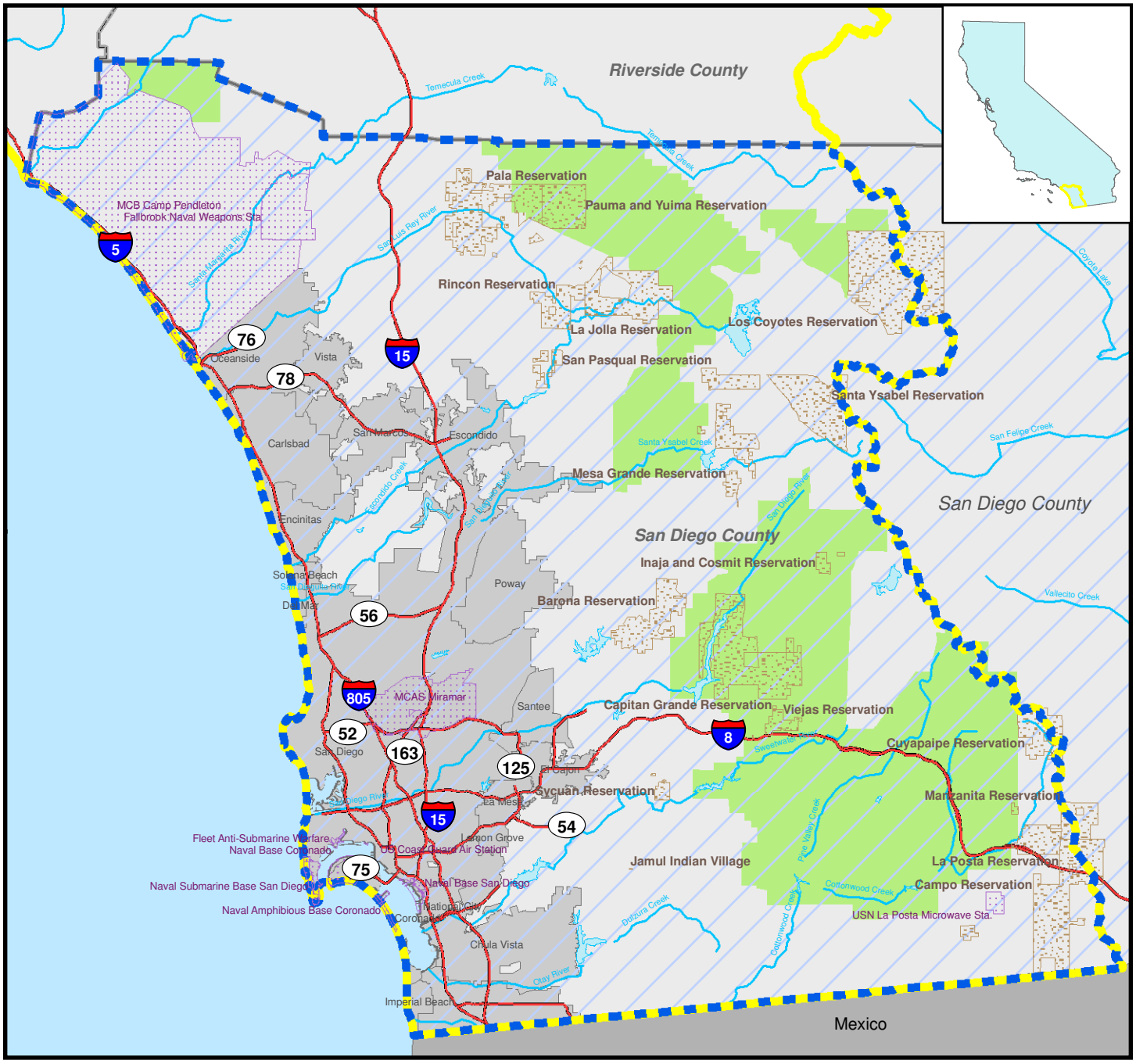
Due to multiple differentiators, as described in **Section 8 of this RAP Application**, the upper watershed areas for the Santa Margarita and San Juan (San Mateo Canyon watershed) hydrologic units are located within adjacent IRWM Regions. However, establishment of the Tri-County FACC will ensure coordinated watershed planning and project implementation. Further, portions of the lower Tijuana hydrologic unit are located outside of U.S. jurisdiction in Mexico. Watershed activities are being coordinated in these areas through the Tijuana River Binational Vision.

- The Region's eastern boundary aligns with the drainage divide in the Palomar Mountains and the western boundary represents the watershed discharge point at the ocean. The Region boundary is an appropriate scale to address a majority of the coastal basins in the County. In the two areas that are shared among adjacent IRWM planning regions, a watershed approach to IRWM planning will be implemented by the Tri-County FACC.

Figure 6-7: Floodplains. This map illustrates the areas designated by the Federal Emergency Management Agency (FEMA) as the 100-year floodplain. The 100-year floodplain is an area subject to a 1% probability of a certain size flood occurring in any given year.

- Due to their localized nature, floodplains do not define the regional boundaries. However, flooding impacts all of the Region's hydrologic units and is addressed collaboratively through the IRWM program.

Figure 6-1: Land Use and Planning



Legend

- Tribal Lands
- Military Facilities
- Cleveland National Forest
- San Diego IRWM Region
- Funding Area Boundary
- County
- SANDAG (Regional Planning Agency)
- Cities
- Mexico
- Freeway
- Ocean
- Waterbody
- River

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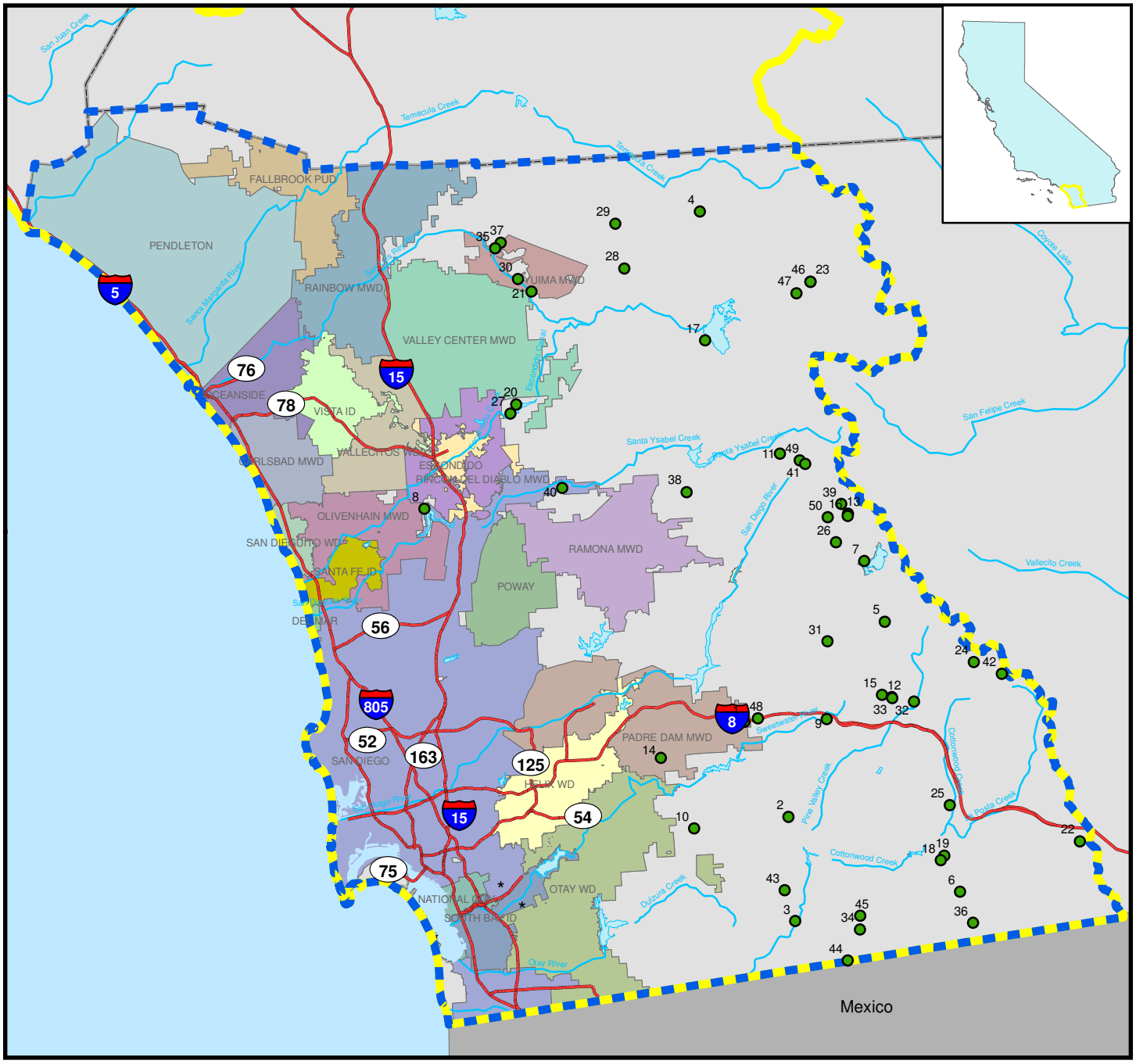
0 2.5 5 10
Miles

Tribal Lands, Military Facilities, National Forests Available: http://www.sangis.org/Download_GIS_Data.htm

Figure 6-2: Water Supply Agencies



Legend

- Small Water Systems
- Water Authority Member Agencies
- San Diego IRWM Region
- Prop 84 Funding Area Boundary
- Ocean
- Waterbody
- River
- Freeway
- County
- Mexico

Map ID	Small Water System	Map ID	Small Water System
1	ALPINE OAKS ESTATES	26	NORTH PEAK MUTUAL WATER CO.
2	BARRETT HONOR CAMP	27	OAKVALE PARK
3	BARRETT LAKE MOBILEHOME PARK	28	PALOMAR MOUNTAIN MW CO.
4	BUTTERFIELD OAKS MH PARK	29	PALOMAR OBSERVATORY
5	CAMP CUYAMACA	30	PAUMA VALLEY MUTUAL WATER CO.
6	CAMPO ELEMENTARY SCHOOL	31	PHOENIX HOUSE
7	CUYAMACA WATER DISTRICT	32	PINE VALLEY BIBLE CONF. CENTER
8	DEL DIOS MUTUAL WATER CO.	33	PINE VALLEY TRAILER PARK
9	DESCANSO DETENTION FACILITY	34	POTRERO ELEMENTARY SCHOOL
10	DIAMOND JACK'S RV RANCH	35	RANCHO CORRIDO RV RESORT
11	DUDLEY'S BAKERY	36	RANCHO DEL CAMPO WATER SYSTEM
12	GUATAY MUTUAL BENEFIT CORP.	37	RANCHO ESTATES MUTUAL WATER CO
13	H & J WATER CO.	38	RANCHO SANTA TERESA MW CO.
14	HARBISON CANYON ESTATES	39	RICHARDSON BEARDSLEY PARK INC.
15	HEAVENLY OAKS	40	SAN PASQUAL ACADEMY
16	JULIAN YOUTH ACADEMY	41	SPENCER VALLEY SCHOOL
17	LAKE HENSHAW WATER CO.	42	STUART WATER CO.
18	LAKE MORENA TRAILER RESORT	43	SUNRISE ESTATES MW CO.
19	LAKE MORENA VIEWS MW CO.	44	TECATE VISTA MUTUAL WATER CO.
20	LAKE WOHLFORD RESORT	45	TWIN LAKES RESORT
21	LAZY H MUTUAL WATER CO.	46	WARNER SPRINGS RANCH
22	LIVE OAK SPRINGS WATER COMPANY	47	WARNER UNIFIED SCHOOL DIST.
23	LOS TULES MUTUAL WATER CO.	48	WILLOWSIDE TERRACE WATER ASSOC
24	MOUNT LAGUNA IMPROVEMENT ASSN.	49	WYNOLA WATER DISTRICT
25	MOUNTAIN EMPIRE HIGH SCHOOL	50	YMCA CAMP MARSTON/RAINTREE

N

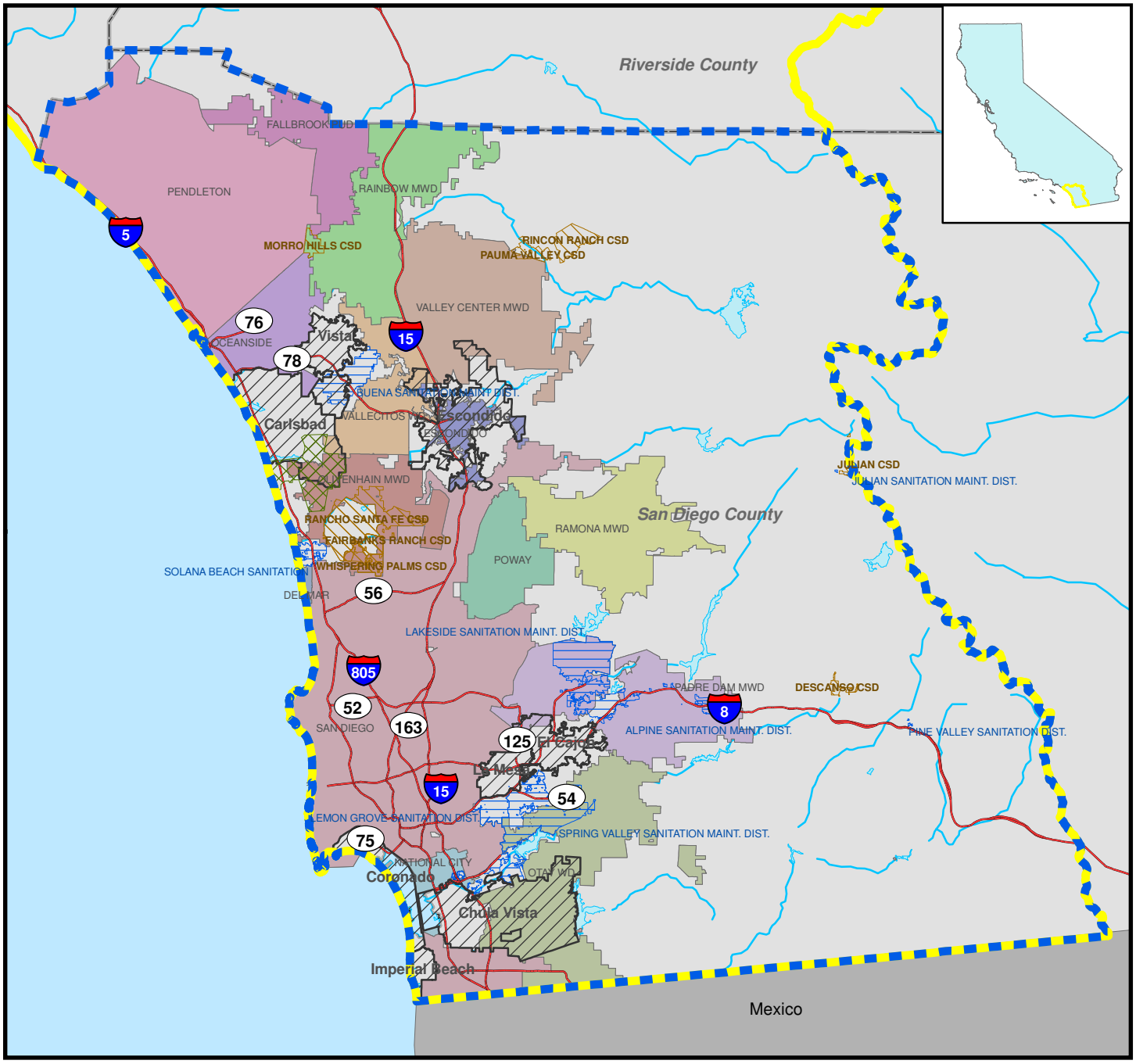
0 2.5 5 10
Miles

RMC

County of San Diego, Department of Environmental Health, Small Water Systems dataset, San Diego County Water Authority Member Agencies, Available: http://www.sangis.org/Download_GIS_Data.htm

** The City of National City and South Bay Irrigation District have formed a joint powers authority, the Sweetwater Authority, to provide water supply within their jurisdictions.*

Figure 6-3: Wastewater Agencies



Legend

- Water Authority Member Agencies - Sewer Service Providers
- Leucadia Wastewater District
- Community Service Districts
- Sanitation Districts
- Cities
- San Diego IRWM Region
- Funding Area Boundary
- Waterbody
- River
- Freeway
- County

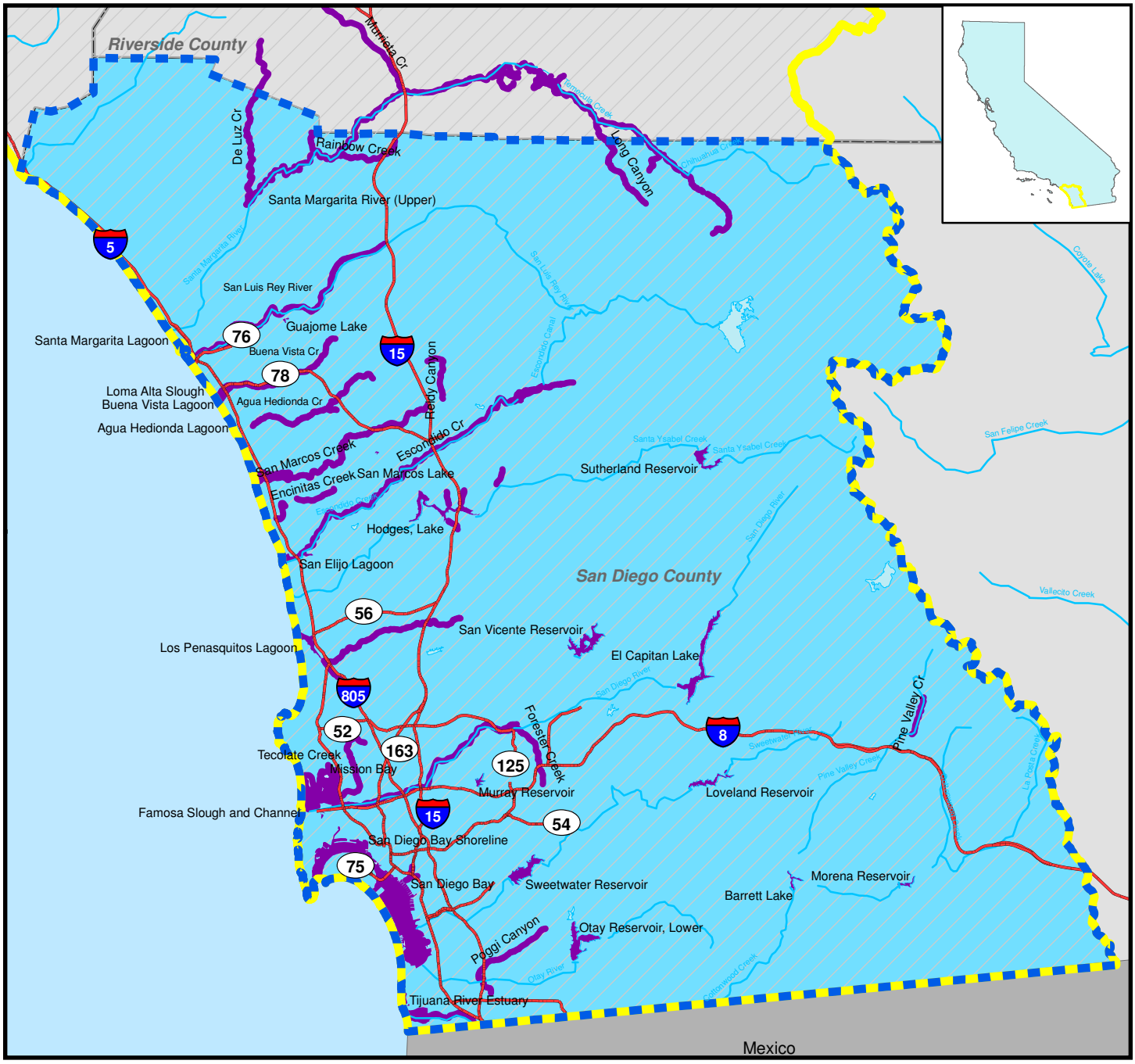
0 2.5 5 10
Miles

N

RMC

San Diego County Water Authority Member Agencies, Community Service Districts & Sanitation Districts, Available: http://www.sangis.org/Download_GIS_Data.htm
Note: City utility districts are based on their municipal boundaries. Data to show their actual sanitation district boundaries do no currently exist, so there may be some overlap.

Figure 6-4: Water Quality



Legend

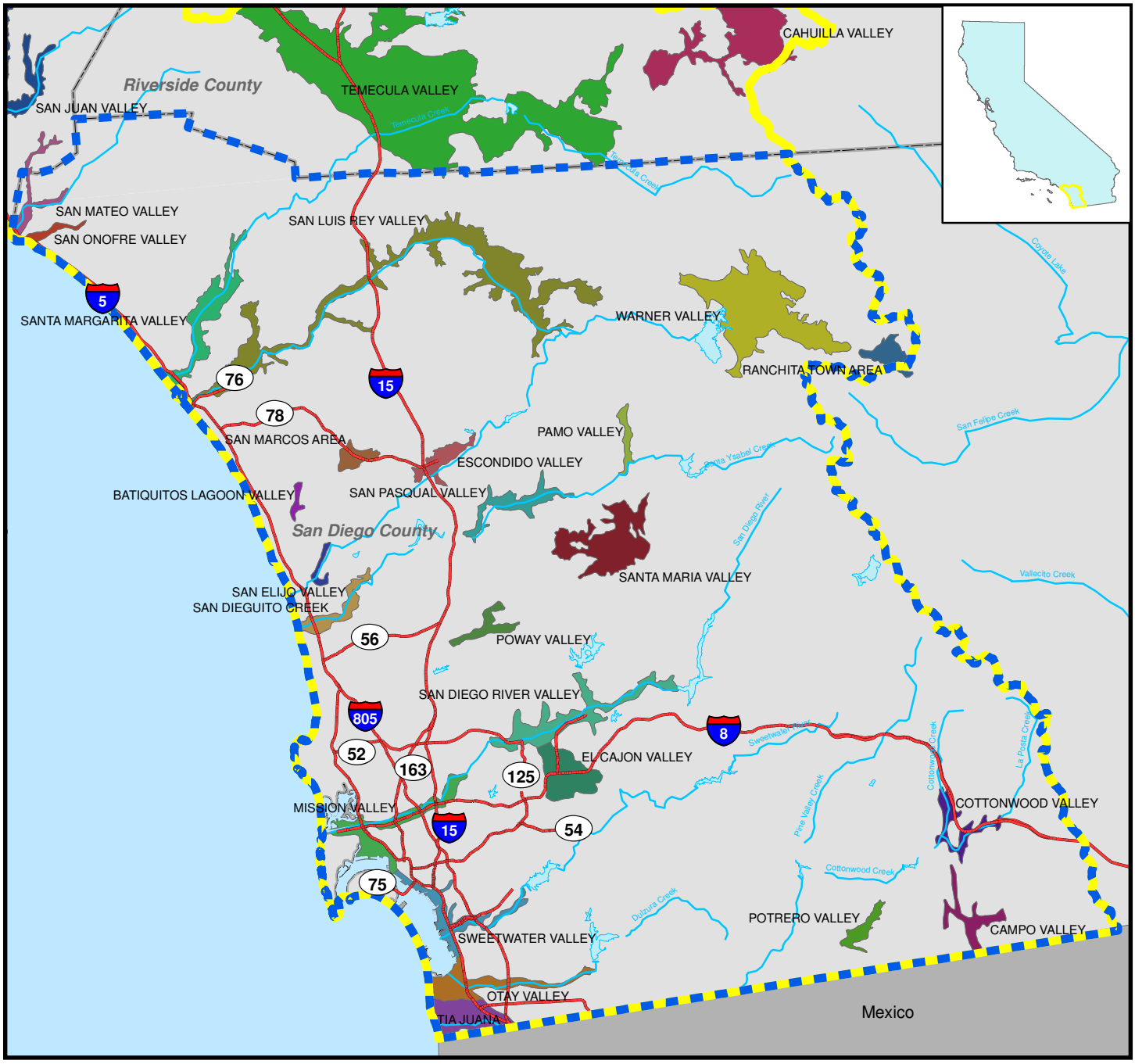
- Impaired Water Bodies (303(d) List)
- San Diego IRWM Region
- Funding Area Boundary
- San Diego County NPDES/MS4 Storm Water Permit
- County
- San Diego Regional Board
- Mexico
- Freeway
- Ocean
- Waterbody
- River

N

0 2.5 5 10
Miles

2006 List of Impaired Water Bodies (303(d) List), USEPA, Available: http://www.waterboards.ca.gov/sandiego/water_issues/programs/303d_list/index.shtml
San Diego RWQCB, NPDES MS4 permits defined by County boundary

Figure 6-5: Groundwater



Legend

- Groundwater Basins
- San Diego IRWM Region
- Funding Area Boundary
- Ocean
- Waterbody
- River
- Freeway
- County
- Mexico

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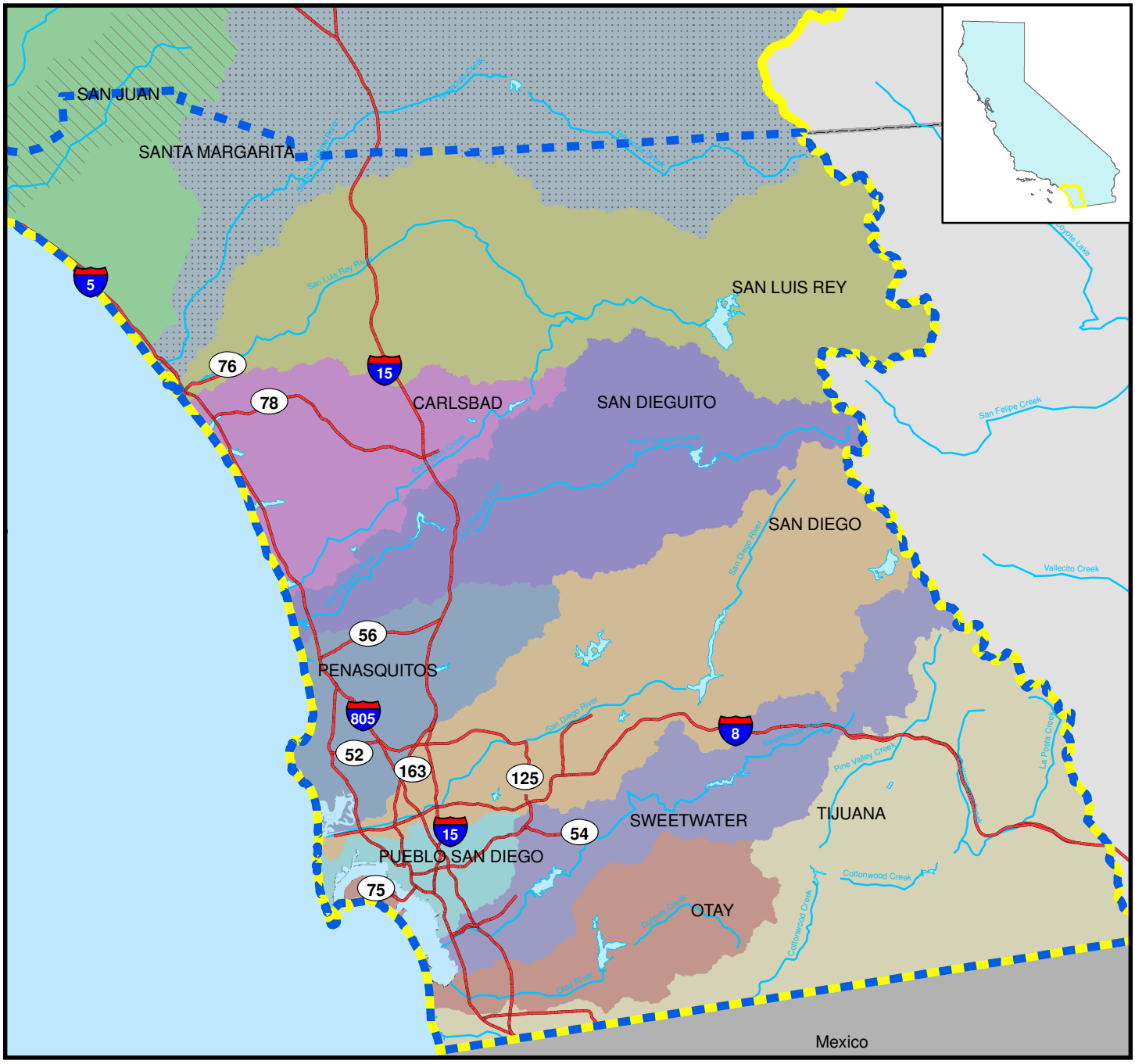
0 2.5 5 10
Miles

RMC

Groundwater Basins, Department of Water Resources, Available: http://www.groundwater.water.ca.gov/bulletin118/basin_maps/index.cfm

Figure 6-6: Hydrologic Units



Legend

- Hydrologic Units
- San Diego IRWM Region
- Funding Area Boundary
- Ocean
- Waterbody
- River
- Freeway
- County
- Mexico

Tri-County Overlay Area

- Santa Margarita
- San Mateo Canyon

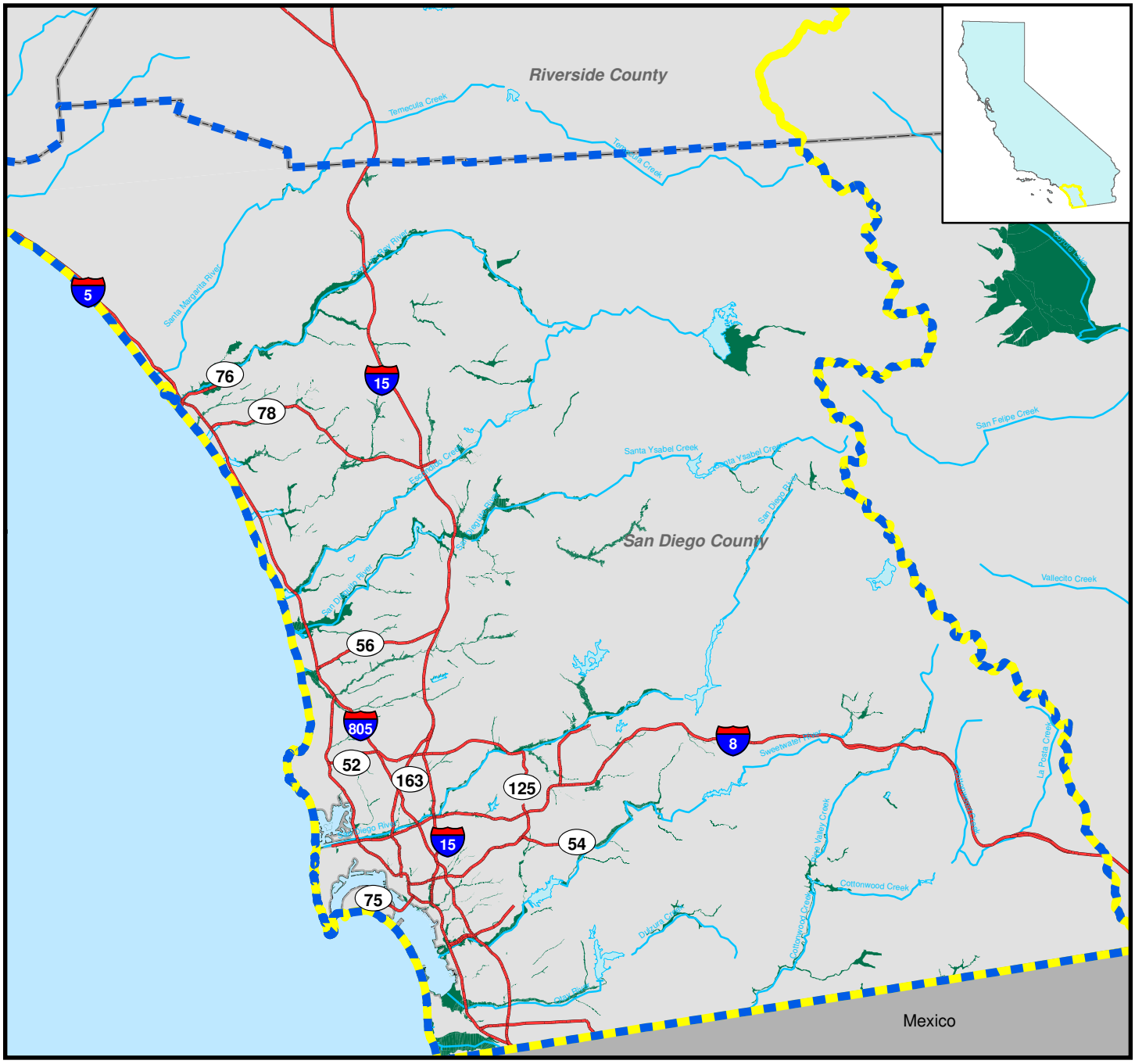
N

0 2.5 5 10
Miles

RMC

Hydrologic Units, Available: http://www.sandag.cog.ca.us/resources/maps_and_gis/gis_downloads/senlu.asp

Figure 6-7: Floodplains



Legend

- 100 Year FEMA Floodplain
- San Diego IRWM Region
- Funding Area Boundary
- Ocean
- Waterbody
- River
- Freeway
- Mexico
- County

N

0 2.5 5 10
Miles

RMC

FEMA, 100 Yr Floodplains, Available: http://www.sangis.org/Download_GIS_Data.htm

Figure 6-8: Regional Water Facilities. This map illustrates the major imported water supply infrastructure within the Region, including the Water Authority's imported water aqueducts, reservoirs, and other facilities. The Region's imported water aqueducts clearly begin at the northern Region border; beyond the Region border, imported water aqueducts are owned and operated by Metropolitan or DWR. **Section 7.5 of this RAP Application** describes the imported and regional water supply infrastructure in the Region.

- All of the major facilities located within the Region boundary are owned and operated by local stakeholders. Because of this, the IRWM program can effectively identify and support coordinated actions to achieve water supply reliability.

Figure 6-9: Regional Wastewater/ Recycled Water Facilities. This map illustrates the major wastewater and recycled water infrastructure in the Region, including wastewater treatment plants, water reclamation facilities, desalination facilities, and ocean outfalls. **Section 7.5 of this RAP Application** describes the wastewater and recycled water infrastructure in the Region.

- All of the major facilities located within the Region boundary are owned and operated by local stakeholders. Because of this, the IRWM program can effectively identify and support coordinated actions to achieve improved water quality, public health, and water supply diversity.

Figure 6-10: Natural Resources. This map illustrates the physical, geographical, and biological features within the Region, including parks and forest, critical habitat areas, ASBS, and MSCP boundaries. The Region's vegetation communities are home to over 1,500 native plant species, 75 species of reptiles and amphibians, 140 species of mammals, and nearly 500 species of birds. Over 200 plant and animals species in the County are listed as endangered, threatened, rare, or are candidates for listing (USFWS and CDFG 1998). Section **B.7 (pages B-49 to B-52) of the IRWM Plan** details the natural and environmental resources in the Region. **Appendix 4 of the IRWM Plan** presents the listed species covered under the MSCP Plan area and describes their associated habitats.

- Natural features contribute to the character of the San Diego Region, yet do not define the Region boundary. However, the Countywide MSCP effort does align with the IRWM planning region and further efforts to identify water-related habitat conservation measures can be coordinated through the RAC.

Figure 6-11: Urbanization. This map illustrates the major urbanized areas within the Region. All but a fraction of the County's population is located within the Water Authority service area, which contained 2.95 million residents in the year 2005. **Section B.1 (pages B-4 to B-9) of the IRW Plan** provides an overview of the population, social and cultural, and housing characteristics of the Region.

- The Region boundary contains all urbanized areas within the County. Cooperation with local planning agencies will enable development of water resources projects that reliably serve the local population.

Figure 6-12: Wildfires. This map illustrates the extent of major wildfires in San Diego County, which had substantial impacts on surface water quality from erosion and sedimentation. Brush fires in the Region burned about 265,000 acres in 2003 and then another 347,000 acres in 2007 (Cal Fire 2003; 2007). Fires have always been a component of life in California, but the likelihood of fire causing profound damage for local residents has increased with ongoing urbanization.

- The 2003 and 2007 firestorms were located entirely within the Region boundaries, many of which impacted watershed lands that drain to the Region's surface water impoundments. The IRWM program provides a venue for discussion of how land managers responded to and addressed these concerns.

Figure 3-1 (**Section 3 of this RAP Application**) illustrates the disadvantaged communities in the Region, using median household income demographics per DWR's *IRWM Grant Program Guidelines*. Using this standard, census tracts with a median household income less than $37,520 are identified as disadvantaged. The Region contains 90 disadvantaged census tracts within its eleven coastal watersheds (refer to Table 3-2).

The attached CD contains map(s) that present the proposed Region boundaries in UTM Zone 10, NAD 27 format, including the above information.

Opportunities to Integrate Water Management

The San Diego region encompasses the service area of over 100 public agencies and organizations (refer to **Section 2 of this RAP Application**) – a majority of which are participating in the IRWM program. This collaborative approach will enable water management planning at a scale which allows regional coordination to occur, but is not

so large that it dissuades the smaller organizations and DACs from participating. The proposed Region will maximize opportunities to integrate water management activities related to natural and man-made water systems, including water supply reliability, water quality, environmental stewardship, and flood management.

As demonstrated in Attachment E, the IRWM program encourages local agencies and organizations to further integrate water management strategies by building multiple functions and benefits into their projects. The 160 projects identified in the adopted IRWM Plan all contain multiple water management strategies. Ongoing implementation of the IRWM program will allow the refinement and expansion of partnerships between local agencies that capitalize on the integration of water management strategies.

6-3 San Diego Funding Area Boundary

This section addresses the following Reviewer questions:

- *Does it appear that the IRWM region boundary was based solely on political boundaries?*
- *Is it clear what the basis and rationale for the IRWM region boundary is?*
- *Does the region boundary consider multiple water management boundaries?*
- *Does the region boundary appear appropriate?*
- *Does the IRWM region encompass the service areas of multiple regions?*

The San Diego Funding Area boundary mirrors that of the San Diego Regional Board boundary (refer to Figure 2-4). It comprises approximately 3,900 square miles in the southwestern corner of California.

The San Diego Funding Area encompasses most of San Diego County and parts of southwestern Riverside County and southern Orange County. The northern boundary lies in Orange County and is the hydrologic divide that extends from the ridge of the Elsinore Mountains to the coast north of Laguna Beach. The southern boundary is the United States – Mexico international border. The eastern boundary extends northerly along the hydrologic divide formed by the Laguna, Cuyamaca, Palomar, and Santa Ana Mountains located in the Cleveland National Forest. The western boundary parallels the coastline and extends north-south approximately 85 miles to the international border.

The 85 miles of coastline include the Pacific Ocean and various bays, harbors, coastal lagoons, estuaries, and river mouths. The natural water resources in the San Diego Funding Area can be classified as inland surface waters, ground waters, and coastal waters. The San Diego RWQCB Basin Plan identifies the beneficial uses of and water quality objectives for the waters in this region.

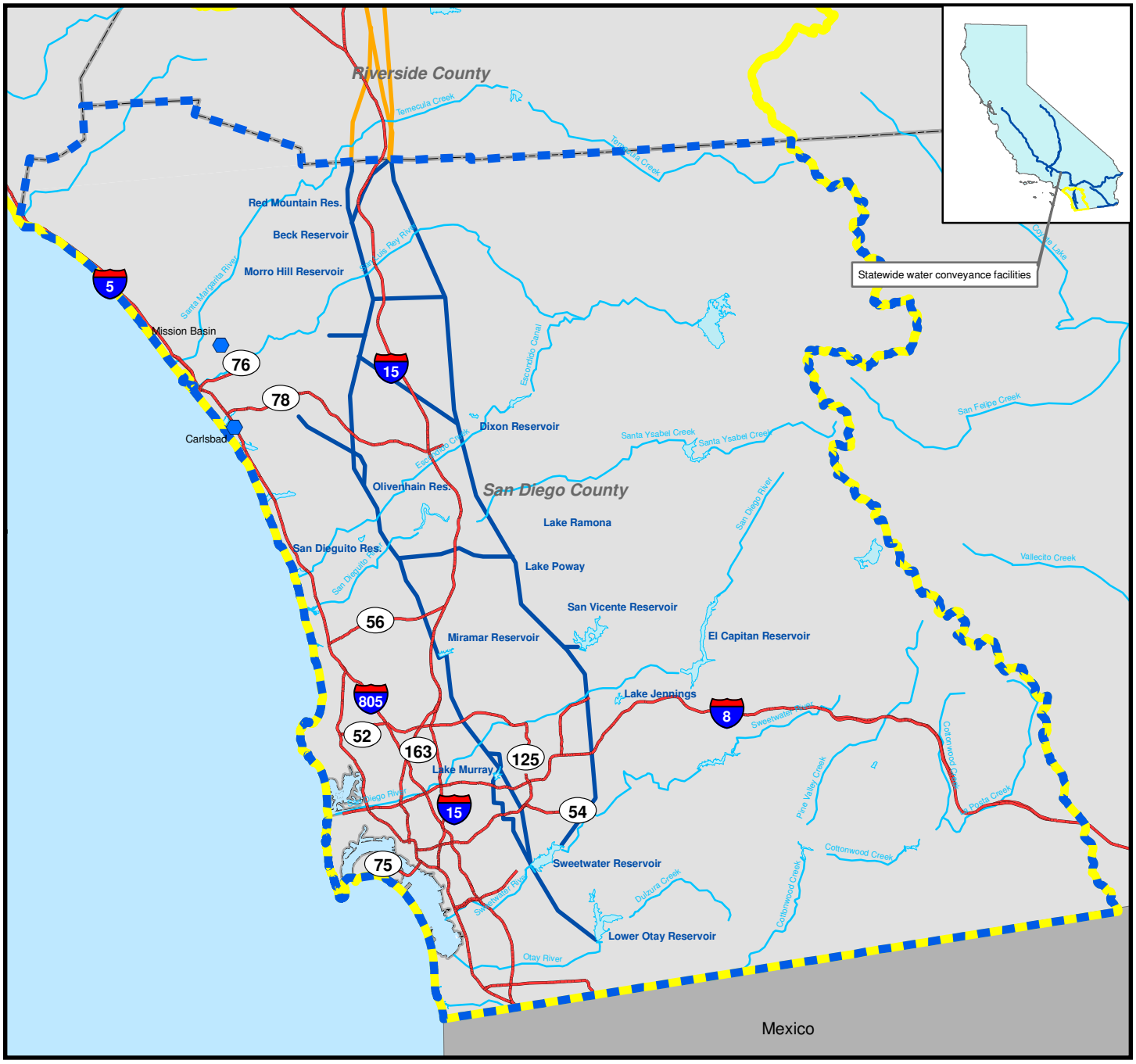
The San Diego Funding Area is comprised of eleven hydrologic units that originate in the highlands and flow west to the coast. These hydrologic units are further broken down into watersheds or hydrologic areas. From north to south these hydrologic units are covered by three IRWM Plans, as shown in Table 6-1. Six of the hydrologic units extend from the coast all the way to the eastern boundary of the San Diego Funding Area, about 50 miles inland. The other five hydrologic units extend some 10 to 25 miles inland from the coast.

As shown in Figure 2-4 (see **Section 2 of this RAP Application**), and discussed in detail in question five, two Watershed Overlay Areas will be managed by a Tri-County FACC Overlay Subcommittee. The Overlay Subcommittee will identify cross-boundary projects and common programs for the San Mateo Creek and the Santa Margarita River watersheds.

Most of the streams in the San Diego Funding Area are interrupted in character, with both perennial and ephemeral components due to variable precipitation patterns and the construction of surface water impoundments. Many of the major surface water impoundments contain a blend of natural runoff and imported water, and may be supplemented by reclaimed water.

The major hydrologic units in the San Diego Funding Area contain groundwater basins, developed mostly for municipal and agricultural supply purposes. The basins are relatively small in area and generally shallow. Because of the movement of groundwater to the surface and the movement of surface water into the ground, pollutants present in groundwater may be transported into surface waters and vice versa.

Figure 6-8: Regional Water Facilities



Legend

- Desalination Facility
- Metropolitan Aqueducts
- Water Authority Aqueducts
- San Diego IRWM Region
- Funding Area Boundary
- Ocean
- Waterbody - Labeled Reservoirs Connected to Aqueducts
- River
- Freeway
- County
- Mexico

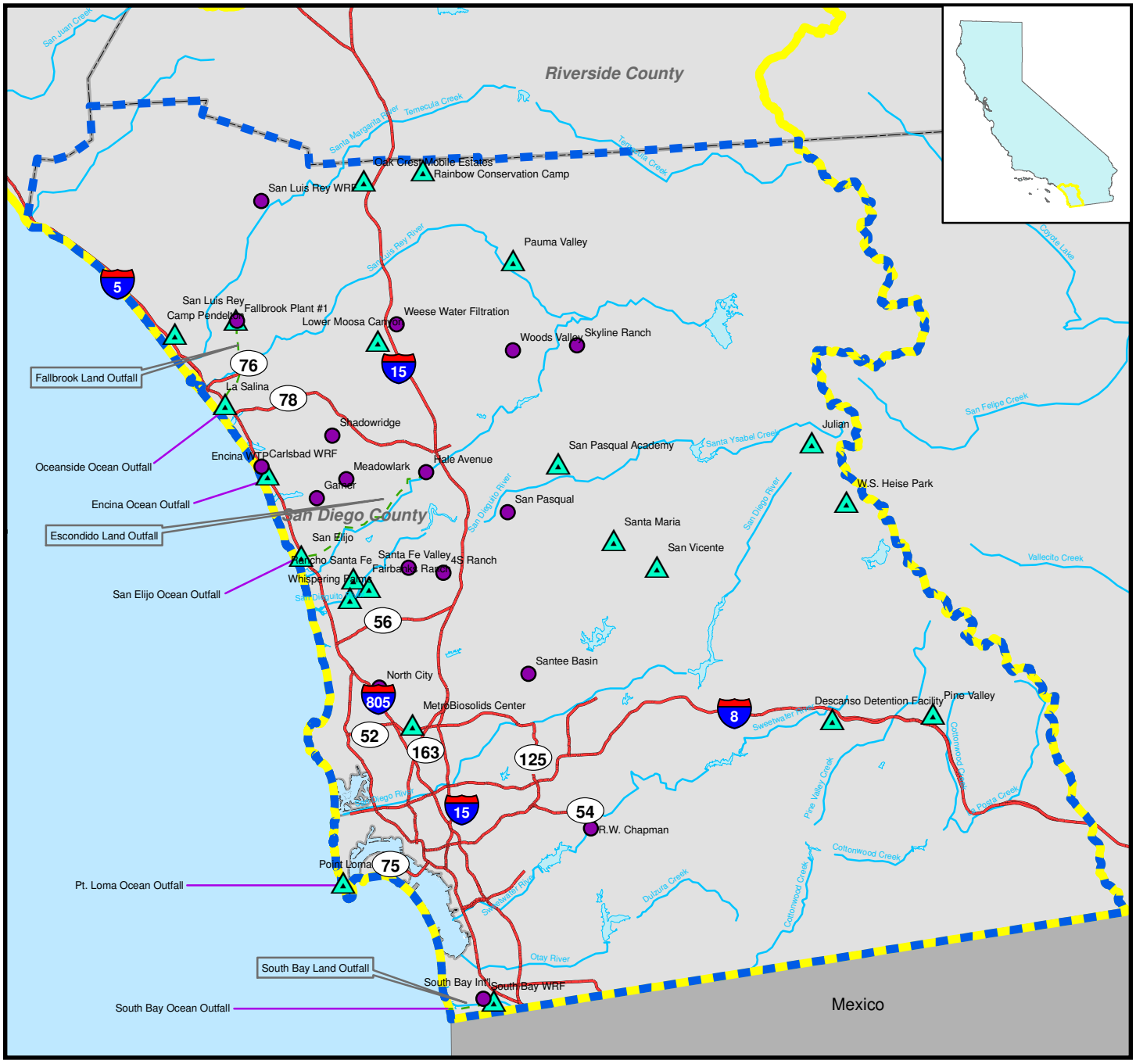
N

0 2.5 5 10
Miles

RMC

MWD Aqueducts, CWA Aqueducts, Desalination Facilities, Reservoirs Connected to Aqueducts, IRWM Plan 2007, Available: www.sdirwmp.org

Figure 6-9: Regional Wastewater/Recycled Water Facilities



Legend

- Water Reclamation Facilities
- Wastewater Treatment Plants
- OceanOutfalls
- LandOutfalls
- San Diego IRWM Region
- Funding Area Boundary
- Ocean
- Waterbody
- River
- Freeway
- County
- Mexico

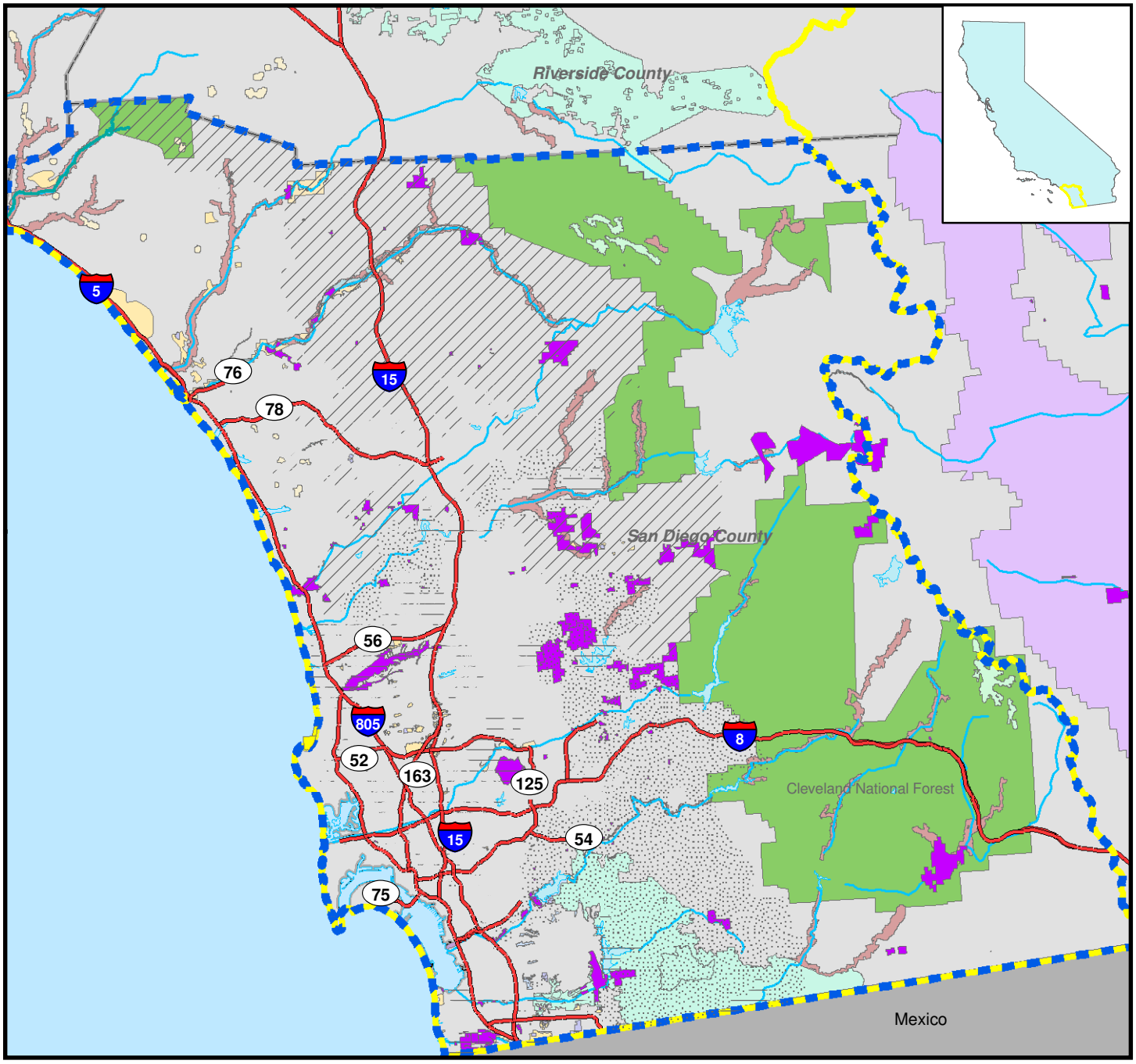
N

0 2.5 5 10
Miles

RMC

Water Reclamation Facilities, Wastewater Treatment Plants, Land and Ocean Outfalls, IRWM Plan 2007, Available: www.sdirwmp.org

Figure 6-10: Natural Resources



Legend

- San Diego MHPA
- North County MSCP Subarea
- South County MSCP Subarea
- SC Steelhead Habitat
- Bufo Californicus Habitat
- Thread-Leaved Brodiaea Habitat
- Deinandra Conjugens Habitat
- Least Bell's Vireo Habitat
- Laguna Mountains Skipper Habitat
- Spreading Navarretia Habitat
- Peninsular Big Horn Sheep
- Quino Checkerspot Butterfly Habitat
- Riverside Fairy Shrimp Habitat
- San Diego Fairy Shrimp Habitat
- Southwestern Willow Flycatcher Habitat
- Western Snowy Plover Habitat
- Area of Special Biological Significance
- Cleveland National Forest
- Parks
- San Diego IRWM Region
- Funding Area Boundary
- Waterbody
- River
- Freeway
- County

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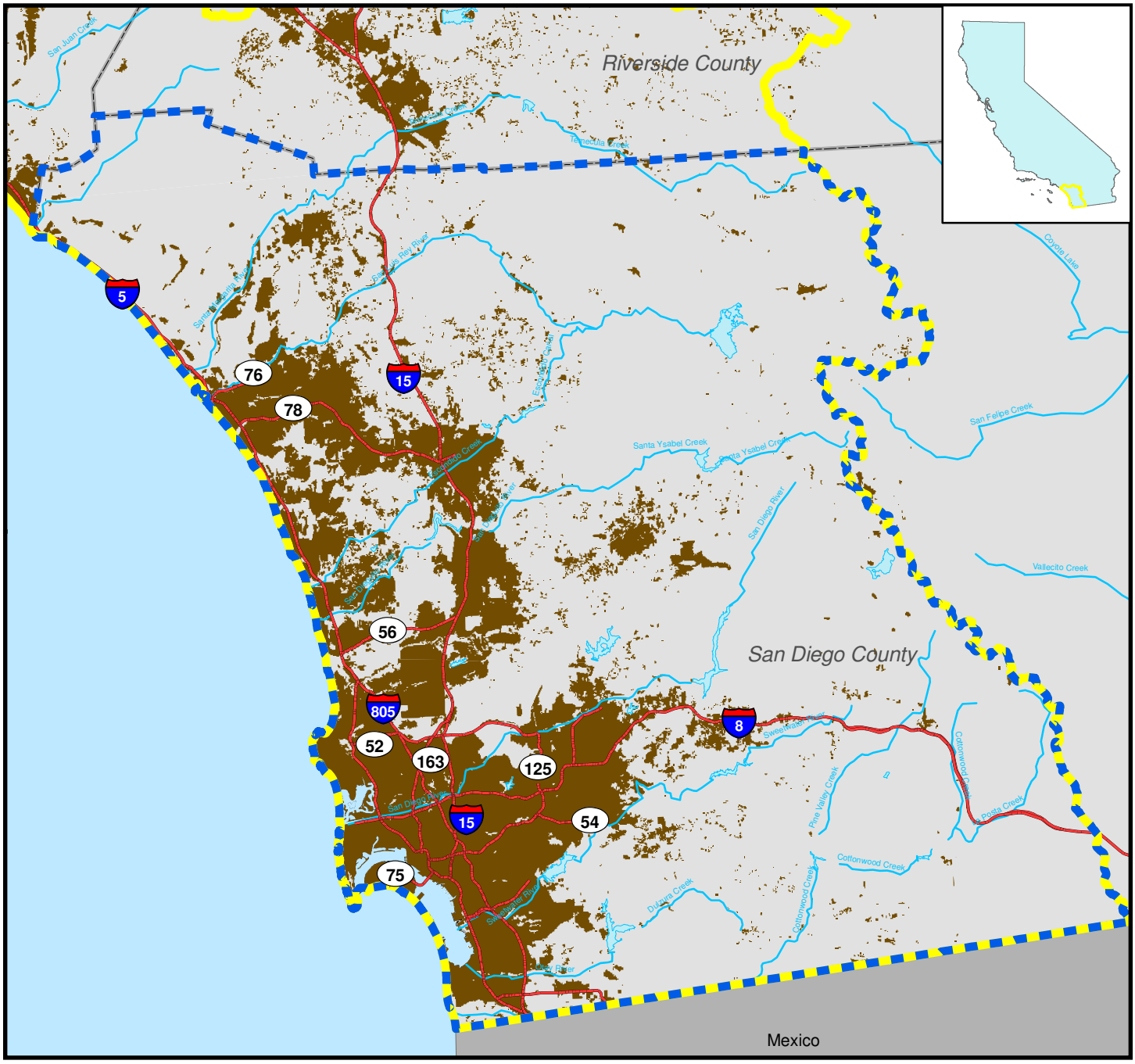
Miles

N

Critical Habitat, USFWS, Available: http://criticalhabitat.fws.gov/
Areas of Special Biological Significance, SWRCB, Available: http://www.swrcb.ca.gov/water_issues/programs/ocean/asbs_areas.shtml
Parks, Cleveland Nat'l Forest, MCSP & MHPA, SANGIS, Available: http://www.sangis.org/Download_GIS_Data.htm

RMC

Figure 6-11: Urbanization



Legend

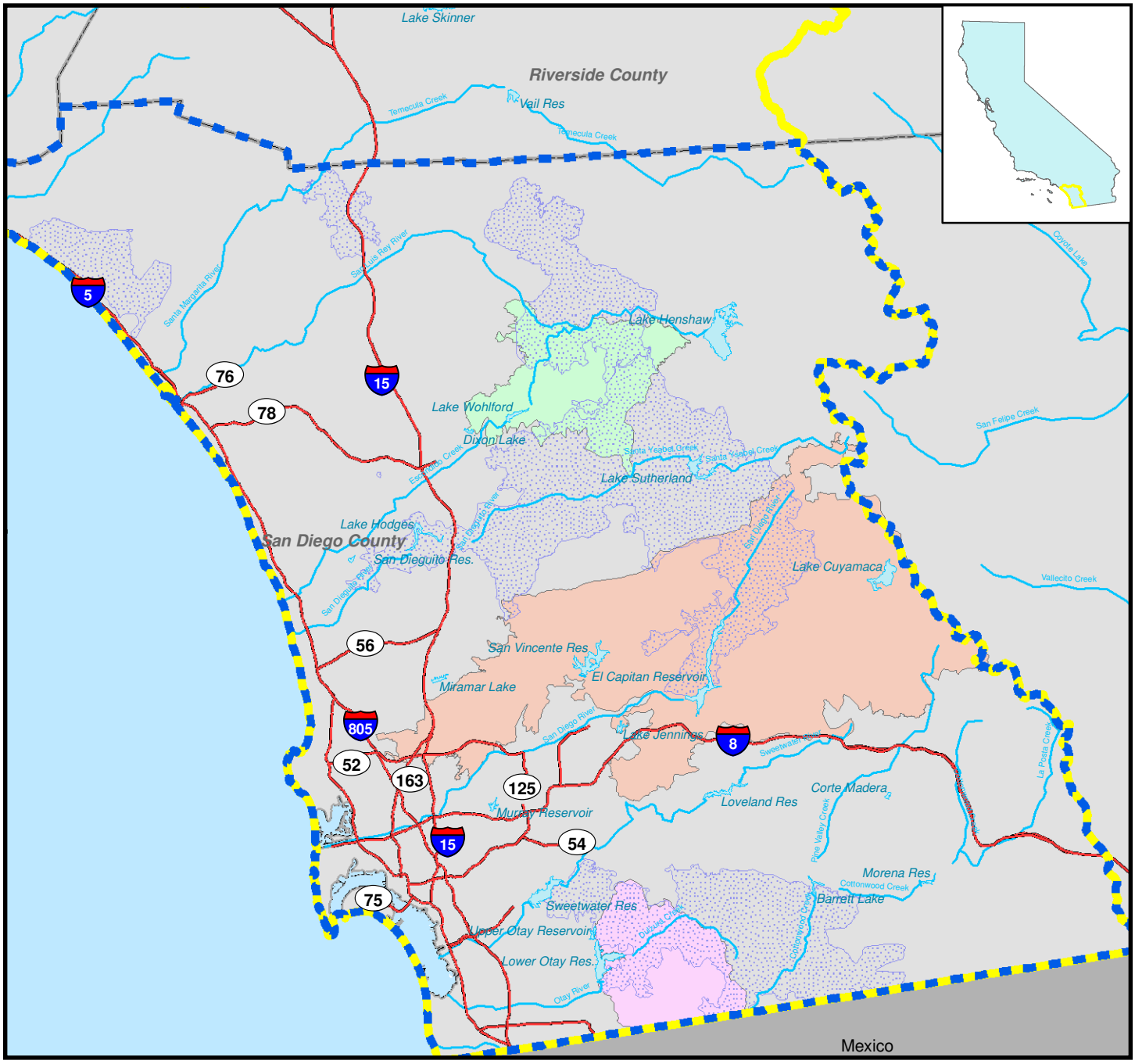
- Urban Areas
- San Diego IRWM Region
- Funding Area Boundary
- County
- Ocean
- Waterbody
- River
- Freeway
- Mexico

N

0 2.5 5 10
Miles

RMC

Figure 6-12: Wildfires



Legend

- 2007 Firestorm Perimeters
- Paradise Fire Perimeter
- Otay Fire Perimeter
- Cedar Fire Perimeter
- San Diego IRWM Region
- Funding Area Boundary
- Ocean
- Waterbody
- River
- Freeway
- County
- Mexico

N

0 2.5 5 10
Miles

RMC

Cedar, Otay, Paradise & 2007 Fire Perimeters, SANGIS, Available: http://www.sangis.org/Download_GIS_Data.htm

Table 6-1
San Diego Funding Area's Hydrologic Units[1]

HU	Name of HU	Area (sq. miles)	Watersheds or Hydrologic Areas	South Orange County IRWMP	Upper Santa Margarita IRWMP	San Diego IRWMP
901	San Juan	500	Aliso Creek	✓		
			San Juan Creek	✓		
			San Mateo Creek	✓	✓	
			San Onofre Creek			✓
902	Santa Margarita River	750	Santa Margarita River		✓	✓
903	San Luis Rey River	565	San Luis Rey River			✓
904	Carlsbad	210	Loma Alta Creek			✓
			Buena Vista Creek			✓
			Encinitas			✓
			Aqua Hedionda Creek			✓
			San Marcos Creek			✓
			Escondido Creek			✓
905	San Dieguito River	350	San Dieguito River			✓
906	Peñasquitos	170	Los Peñasquitos Creek			✓
			Rose Creek			✓
			Tecolote Creek			✓
907	San Diego River	440	San Diego River			✓
908	Pueblo	60	Chollas Creek			✓
909	Sweetwater River	230	Sweetwater River			✓
910	Otay River	160	Otay River			✓
911	Tijuana River	470	Tijuana River			✓

1. Adapted from basin descriptions presented in Water Quality Control Plan for the San Diego Basin (Regional Board 1994).

Land uses in the lower portions of the watersheds often differ from those in the upper watersheds. This difference in land use can translate into differences in water quality and beneficial use problems. The Overlay Subcommittee will address this situation as part of its deliberations and project solutions.

The San Diego Funding Area has formed the Tri-County FACC to balance the necessary autonomy of each planning region to plan for itself at the appropriate scale with the need to coordinate among ourselves to improve inter-regional cooperation and efficiency. In addition, the Tri-County FACC will allow for coordination of opportunities to integrate water management activities related to natural and man-made water systems, including water supply, reliability, water quality, environmental stewardship, and flood management.

6-4 References

State Board. 2006. 2006 Clean Water Act 303(d) List of Water Quality Limited Segments for California. USEPA Approval Date: June 28, 2007.

USFWS and CDFG. 1998. San Diego County Multiple Species Conservation Plan EIR/EIS.

7 Water Management Issues and Components

This section provides a detailed understanding of the issues, conflicts, and physical components of water management in the Region. Water and environmental management entities in the Region are described in **Section 2.3 of this RAP Application**.

7-1 History of IRWM Efforts

This section addresses the following Reviewer questions:

- *Is it clear how the history of water management in the region affects the boundaries that exist in the region and how it shapes the water management issues facing the region today?*

The San Diego IRWM effort initially began under the auspices of Project Clean Water, in the Watershed Protection Technical Advisory Committee (TAC). In August 2004, the TAC began discussing the draft *IRWM Grant Program Guidelines* and development of a regional water management program. At that time, the County suggested a possible partnership between the Water Authority, the City of San Diego, and the County to develop an IRWM Plan. The early vision was to incorporate all of the Region's existing watershed management plans into an IRWM Plan, with RWQCB review and contribution.

By late 2004, the Water Authority, the City, and the County had met and began coordination to bring the necessary elements to together to form an IRWM Plan. The Watershed Protection TAC was used as a forum to discuss regional goals and objectives, develop and distribute the Project Application Form, solicit projects for inclusion within the Plan, and prioritize projects for the Proposition 50 Implementation Grant Application (Round 1) in February 2005.

Numerous agencies, land-use jurisdictions, and organizations are involved in water management planning within the Region. Key to developing a long-term Region boundary was establishing an approach that provided for comprehensive stakeholder involvement, yet allowed for efficiency in managing and accomplishing the many responsibilities associated with IRWM planning. By June 2005, the Water Authority, the City, and the County had formalized the RWMG via MOU and expanded the IRWM program to include interested stakeholders with expertise in water supply, wastewater, recycled water, stormwater and urban runoff, natural resources, and environmental stewardship. Establishment of the RAC allowed for a broad stakeholder-driven planning process to identify and prioritize water management efforts in the Region.

Numerous public meetings, workshops, and presentations (refer to Table 3-1) occurred throughout 2006 and 2007 to invite participation in development of Plan goals and objectives, long-term targets, the proposed institutional structure, and project prioritization. Following a unanimous RAC endorsement at the July 10, 2007 RAC meeting, the RWMG governing bodies – the Water Authority Board of Directors, County Board of Supervisors, and City Council and Mayor – approved the IRWM Plan (see Attachment A).

Since that time, RAC meetings have been used as a forum for educating the group on issues that cut across various aspects of water management ("cross-threading") to build a knowledge base for ongoing IRWM planning. Updates on DWR's IRWM grant program, the Proposition 84/1E bond measures, and local water resources topics and events are conveyed to all interested parties. Additionally, the RWMG, RAC, Workgroups, and participating agencies and organizations have together been making steady progress toward the IRWM Plan targets (refer to Table 5-2).

Selection of Region Boundary

As described in **Section B (pages B-1 to B-4) of the IRWM Plan**, the Region is an appropriate area for regional water management based on the following rationale: the Region lies entirely within the jurisdiction of the San Diego Regional Board; the Region lies entirely within San Diego County; the eleven hydrologic units share common east-west trending flows and coastal destinations; and the Region depends significantly on imported water obtained through the Water Authority. Beyond this rationale, the IRWM Plan boundary makes sense because of the shared

infrastructure of wastewater and recycled water agencies; limited groundwater production within the Region; the independent flood control authority of local jurisdictions; and the adopted natural communities protection plans and programs within the County – all of these water management activities occur within the Region and have little relation to outside areas or agencies. **Section 6.1 of this RAP Application** provides a detailed discussion of the current water resources and historic water management issues that formed the basis of the Region boundary.

Tri-County FACC Evolution

During the Proposition 50 grant cycles, three IRWM regions emerged within the San Diego Funding Area – the San Diego, Upper Santa Margarita, and South Orange IRWM regions. Ongoing lawsuits between San Diego County and Riverside County agencies over water rights, wastewater disposal practices, and water quality have historically limited opportunities for inter-County information transfer and project coordination. Since that time, however, the three regions have developed and formalized a working relationship for joint IRWM planning in shared watershed areas.

The IRWM program has provided a unique opportunity to substantially increase coordination and collaboration between historical factions. Creation of the Tri-County FACC in late 2008 has produced a partnership between the three RWMGs for water resources planning and management. Per the adopted MOU, the Tri-County FACC agencies are committed to working together to "enhance the quality of planning, identify opportunities for supporting common goals and projects, and improve the quality and reliability of water in the Funding Area." **Section 8 of this RAP Application** provides a detailed discussion of the San Diego Region's commitment to collaboration with the adjacent Upper Santa Margarita and South Orange IRWM regions.

7-2 Water Management Issues and Conflicts

This section addresses the following Reviewer questions:

- *How has water conflict been resolved in the region?*
- *Have there been established water management groups that collaborated to resolve these differences?*
- *Is the RWMG associated with these groups?*
- *Conflicts may exist and is a common occurrence among any group. Hence, it is important to observe the process and effectiveness that the RWMG has managed to resolve past conflicts and establish procedures and tools to manage potential conflicts in the future. Likewise, it could be a concern if conflicts are known to reviewer(s), and yet, they are not identified and described in the submittal.*

The San Diego Region faces a variety of water management issues and challenges, many common to other IRWM regions in the State. Prolonged drought, increased salinity, and environmental concerns are triggering the need for alternative local supplies and associated debate. However, the establishment of a regional forum for discussion of water resources topics – through the IRWM program – has broken down the historical silos in water management. RAC members and interested parties from diverse functional areas (water supply, wastewater, natural resources, and at-large) are coming together on a bi-monthly basis for healthy debate and discussion. The information-sharing occurring at these RAC meetings has led to greater collaboration and support for resolving Regional issues. The following sections review the water management issues and conflicts facing the San Diego Region.

Drought

On February 27, 2009, Governor Schwarzenegger proclaimed a State of Emergency and ordered immediate action to address California's water shortage associated with the third consecutive year of drought. About 25 million Californians depend on Sacramento-San Joaquin Delta (Delta) water for at least some of their supply. Due to heavy dependence on imported water, drought is of significant concern to water supply agencies in the Region. Potential repercussions of drought on imported water reliability have led to an emphasis on demand management strategies (e.g., conservation), the development of local supplies (e.g., recycling, groundwater and desalination), and water transfer agreements. Many such water management projects were included in the IRWM Plan project list.

In 2007, the Water Authority adopted a Drought Management Plan that outlined the stages of water supply conditions and a series of potential actions to take at each stage when faced with a shortage of imported water supplies from Metropolitan due to drought conditions. The four stages of water supply conditions include the normal stage and three drought management plan stages (drought watch, drought alert, and drought critical/emergency).

Further, the Water Authority adopted a model Drought Response Ordinance in March 2008. The Ordinance identified four levels of water restrictions that span from 10% voluntary conservation to more than 40% mandatory conservation during an emergency. Water Authority member agencies have used the model ordinance to updating their own codes to help provide consistency in drought response levels and water conservation requirements throughout the region.

Global Climate Change

Global climate change is expected to impact the Region through changes in Statewide precipitation and surface runoff volume. Changes in annual precipitation across California may result in changes to surface runoff timing, volume, and form. By the end of the century, the Sierra Nevada snowpack is expected to decline as warmer temperatures raise the elevation of snow levels, reduce spring snowmelt, and increase winter runoff. Locally, climate change is expected to result in hotter summer months and more extreme winter storms. Winter runoff may result in increased flood hazards, with flows potentially exceeding reservoir storage capacity and resulting in discharges to the ocean. Higher flow volumes may scour stream and flood control channels, degrading aquatic and riparian habitats already impacted by shifts in climate. Environmental water supplies may need to be retained in reservoirs for management of in-stream flows necessary to maintain habitat for aquatic species throughout the dry season (California Climate Change Portal 2008; Cayan 2008; Hayhoe 2004). Further, hotter summer temperatures would increase wildfire hazards in the arid San Diego Region.

Impacts resulting from extreme sea levels associated with tides, winter storms, and other episodic events would be superimposed on the higher sea level. This rise could heavily impact the Region through inundation of low lying areas, causing severe coastal flooding and erosion, damage to coastal structures, and damage to coastal marshes and wildlife reserves (Cayan 2008; California Climate Change Portal 2008). All of these uncertainties related to climate change could potentially reduce delivery of imported supplies and the ability of local agencies to meet Regional water demand.

The State has mandated through Assembly Bill 32 that greenhouse gas (GHG) emissions be reduced to 427 million metric tons of CO2 by 2020. Further development of alternative local supplies throughout the Region will reduce GHG generation associated with long-distance conveyance. The Region's water suppliers, including the RWMG agencies, already have implemented numerous conservation, groundwater management, and water recycling programs which further reduce import volumes.

Environmental Concerns in the Sacramento-San Joaquin Delta

Uncertainty about the availability of imported water supplies from the Delta through the SWP is of primary concern to the Region. The Delta is the focal point of California's water supply system and home to a variety of native fish species. A federal court found that a 2004 biological opinion by the USFWS does not adequately protect sensitive fish populations when authorizing long-term operations of the State and federal water projects. Significant restrictions were placed on SWP pumping in accordance with the December 2007 federal court decision that imposed interim rules to protect the Delta smelt (*Hypomesus transpacificus*).

In addition to fisheries, other environmental concerns in the Delta relate to the potential impacts on water supplies from levee failures. The Final Delta Risk Management Strategy Phase 1 Risk Analysis Report (2009) identified the probabilities of Delta island flooding as a result of levee failures caused by seismic events, floods or other unforeseen occurrences. Levee failures may increase salinity in the Delta which could render water quality inadequate for use by the state and federal water projects and other users. Pumping may be disrupted for an unknown period, adding to the hardship on water customers. The Water Authority and other stakeholders are reviewing the impact of the federal ruling and possible future solutions.

Salinity

Salinity in both local and imported supplies will continue to be a challenge for local water agencies. Salinity sources in local groundwater supplies include agricultural runoff, imported water, seawater intrusion, discharge of treated wastewater, and recycled water. Salinity impacts residential, commercial, industrial, and agricultural water users, groundwater, wastewater, and recycled water resources, and utility distribution systems.

All of the imported water delivered to the San Diego Region is from the SWP or CRA. Colorado River water has a high average salinity content (700 milligrams per liter [mg/l]) compared to SWP water (250 mg/l). To control salt levels, Colorado River water is blended with SWP water (Atwater 2008). However, as environmental and urban

demands reduce exports of fresh water from the north, salinity levels in Southern California are rising. Further, the salinity of both SWP and CRA supplies continues to rise due to increased agricultural return flows and urban discharge. Abandoned groundwater basins, due to high salinity levels, have only recently been restored through brackish water desalting projects.

High salinity or total dissolved solids (TDS) in source water poses a problem for water treatment and/or recycling facilities because conventional treatment processes are designed to remove suspended, but not dissolved, particles. TDS removal, or demineralization, requires an advanced treatment process. Further, increased salt loads place a burden on wastewater treatment facilities in terms of hydraulic capacity of sewerage systems, infrastructure degradation of treatment plants from corrosion, loss of recycled water use due to higher salt loads, lowering of the value of and ability to reuse biosolids, and mineral salt pollutants that adversely affect downstream reuse of the watershed supplies.

Residential use of water typically adds 200 to 300 mg/l of TDS to the wastewater stream, and self-regenerating water softeners can add another 60 to 100 mg/l. Infiltration of brackish groundwater into sewer lines can also increase TDS. All of the inputs identified above could result in the production of water with TDS concentrations of 1,000 mg/l or higher at the recycling facility. Water with a TDS greater than 500 mg/l is problematic to many of the subtropical crops grown in the San Diego region, as crops do not produce well and irrigation management is more difficult when irrigated with high TDS water. Recycled water with a TDS 1,000 mg/l is virtually unusable for growers (Water Authority No Date).

To address the salinity problem, the Southern California Salinity Coalition (SCSC), led by MWD and consisting of water and wastewater agencies in Southern California, was formed in 2002. SCSC's purpose is to coordinate salinity management strategies and programs, including research projects, with water and wastewater agencies throughout Southern California. The Water Authority is an active member of SCSC.

Surface Water Quality

As described in **Section B (page B-38 to B-44) of the IRWM Plan**, over 40 inland surface water bodies in the San Diego Region are designated as not attaining applicable water quality objectives. On the basis of the 303(d) listings and monitoring conducted as part of region-wide monitoring programs, Table 7-1 summarizes region-wide water quality issues for inland surface waters and coastal waters of the Region's hydrologic units. Surface water quality concerns common to the Region's eleven hydrologic units include the following:

- **Coliform Bacteria**. Elevated concentrations of coliform bacteria indicate the potential for elevated concentrations of pathogens. High concentrations of coliform bacteria resulted in beach advisories along each of the Region's eleven hydrologic units. Observed elevated coliform bacteria concentrations have occurred as a result of stormwater runoff, urban runoff, and sewer spills. Coliform bacteria is designated a constituent of concern by the MS4 Copermittees in each of the Region's hydrologic units as a result of periodic elevated concentrations of coliform bacteria in inland surface waters, coastal waters, and beaches. (Weston Solutions 2006; Project Clean Water 2006)
- **Sediment and Turbidity**. Discharges of sediment can adversely impact water clarity, wildlife habitat, and aquatic habitat. Additionally, sediment can adversely affect the hydraulics of lagoons and estuaries, decrease tidal flushing, and contribute to the transport of bacteria. Turbidity can adversely affect aquatic habitats by limiting light penetration and overall aesthetics. Receiving water monitoring conducted by the MS4 Copermittees during 2001-2005 indicated that water quality objectives for total suspended solids were periodically exceeded in the Santa Margarita, Carlsbad, Peñasquitos, Pueblo, and Tijuana River hydrologic units. Sediment is listed as a constituent of concern in each of the watersheds that discharge to coastal lagoons or estuaries. Sediment and turbidity are also constituents of concern for watersheds that discharge to San Diego Bay. (Weston Solutions 2006; Project Clean Water 2006)
- **Nutrients**. Elevated concentrations of nitrogen and phosphorus can result in algal blooms and impacts associated with emergent and submergent vegetation. Nutrients are a particular concern in watersheds that discharge to coastal lagoons and estuaries, as summer temperatures and lagoon hydraulics that limit tidal flushing may lead to algal blooms and fish kills related to decreased dissolved oxygen levels. Nutrients can also be a concern in potable water reservoirs, as biostimulation effects can adversely affect reservoir dissolved oxygen, affect the treatability of supplies, and adversely affect taste and odor. Receiving water monitoring conducted by the MS4 Copermittees during 2001-2005 indicated that the Basin Plan's 0.05

mg/l phosphorus objective was exceeded in a significant majority of samples collected within the Region hydrologic units (Weston Solutions 2006).

- **Salinity**. Concentrations of TDS and dissolved mineral constituents can adversely impact aquatic and wildlife habitat and the usability of waters for municipal and irrigation supply. TDS concentrations in Region surface waters vary significantly, with TDS concentrations being lower during periods of extreme flow and higher during periods of lower flow. TDS is a constituent of concern within all of the Region's hydrologic units except Pueblo (which has no Basin Plan TDS objective).
- **Toxic Inorganic Compounds**. Toxic inorganic compounds (e.g., metals, nitrates, cyanide, and unionized ammonia) can adversely impact aquatic habitat, wildlife habitat, and water supply uses. As no inland point-source discharges of toxic inorganic pollutants exist within the Region, toxic inorganic compounds in the Region's surface waters can be presumed to originate from non-point sources. Stormwater monitoring conducted by the MS4 Copermittees during 2001-2005 showed the presence of metals in surface waters in all of the monitored hydrologic units. Chollas Creek (within Pueblo), however, was the only watershed that consistently exceeded water quality objectives for copper and zinc. Metals in marine sediments at concentrations that exceed the Effects Range-Low limits (ERL, the concentration adversely affecting ten percent of the studied organisms) were detected at seven of the nine watershed embayments. In addition to detecting sediment toxicity in San Diego Bay, the MS4 monitoring detected sediment toxicity in Batiquitos and San Dieguito Lagoons (Weston Solutions 2006).
- **Toxic Organic Compounds**. Toxic organic compounds (e.g., pesticides and other EPA-designated priority pollutants) can adversely impact aquatic habitat, wildlife habitat, and water supply uses. No inland point-source discharges of toxic organic pollutants exist within the Region, and toxic organic compounds in the Region's waters can be presumed to originate from non-point sources. Stormwater monitoring conducted by the MS4 Copermittees during 2001-2005 detected diazinon (a pesticide) in water samples collected from all of the monitored hydrologic units. Diazinon concentrations exceeded water quality objectives in samples collected from Chollas Creek (Weston Solutions 2006).
- **Total Organic Carbon (TOC)**. Urban runoff and decaying vegetation can result in increased levels of TOC. While TOC is not a measure of toxic organic compounds, elevated TOC concentrations in local reservoir supplies present treatment challenges for surface water filtration plans. Reaction of chlorine compounds and other disinfectants with TOC during the treatment process can result in elevated concentrations of disinfection byproducts in the treated water supply.

Surface water concerns in the Region's eleven hydrologic units are being addressed by the 21 MS4 Copermittees, led by the County, in coordination with the Regional Board.

Table 7-1
Summary of Key Water Quality Issues within Inland Surface Waters and Coastal Waters[1]

HU	Name	Constituents of Concern								
		Trash & Debris	Coliform Bacteria	Nutrients	Dissolved Oxygen	Turbidity	Sediment	Toxic Organics	Metals	TDS
901	San Juan							●	●	●
902	Santa Margarita River		●	●		●	●			●
903	San Luis Rey River		●	●			●	●		●
904	Carlsbad		●	●		●	●	●	●	●
905	San Dieguito River		●	●	●		●		●	●
906	Peñasquitos		●	●		●	●	●	●	●
907	San Diego River	●	●	●		●	●	●		●
908	Pueblo		●				●	●	●	
909	Sweetwater		●				●	●	●	●
910	Otay		●					●	●	●
911	Tijuana River	●	●	●	●	●	●	●	●	●

1. See footnotes in Table B-16 of the San Diego IRWM Plan (2007).

Groundwater Quality

As described in **Section B (pages B-46 to B-48) of the IRWM Plan**, While alluvial groundwater aquifers can be quickly recharged by stormwater or urban runoff, the porous nature of the aquifers render them susceptible to contamination by activities on the ground surface, contaminated stormwater infiltration, abandoned well heads, and from underground storage tanks. Table 7-2 summarizes key groundwater quality issues within the Region. Constituents of concern within Region's groundwater aquifers include the following:

- **Salinity**. TDS can affect both the usability of groundwater as a domestic water source and as an irrigation water source. Groundwater TDS concentrations within coastal groundwater basins vary significantly, but have generally exhibited a trend of deteriorating water quality in recent decades as a result of seawater intrusion and salt load imbalances associated with imported water use (Water Authority 1997). Coastal alluvial groundwater aquifers within the region that have experienced significant degradation from elevated TDS concentrations include: Lower Santa Margarita River Basin, Mission Basin (lower San Luis Rey Basin), Lower San Dieguito River Valley, Mission Valley (lower San Diego River Basin), Lower Sweetwater River Valley, and Lower Tijuana River Valley. Among the principal alluvial groundwater aquifers within the Region, only the Pala/Pauma Basin, Warner Basin, and the upstream portions of the San Pasqual, El Monte, and Middle Sweetwater Basins contain groundwater TDS concentrations within the recommended 500 mg/l state and federal secondary (non-enforceable) drinking water limits. Water quality in the San Diego Formation (central portion of the City of San Diego) is highly variable. Groundwater TDS concentrations within inland fractured rock aquifers are variable, but most wells produce groundwater that contains TDS concentrations that are allowable for potable water uses (Water Authority 1997).
- **Nitrate**. Alluvial aquifers are susceptible to nitrate contamination from fertilizer application, animal confinement, wastewater percolation, and septic tank discharges. Exceedance of the Basin Plan nitrate objectives has been documented in portions of the San Luis Rey River and San Dieguito River hydrologic units (Water Authority 1997).
- **Iron and Manganese**. Iron and manganese occur naturally in Region's alluvial groundwater. Groundwater from Region's coastal aquifers periodically exceeds recommended state and federal secondary (non-enforceable) drinking water standards (0.3 mg/l for iron and 0.05 mg/l for manganese). Aquifers that have exhibited iron and manganese compliance problems include portions of the Santa Margarita River, San Luis Rey River, San Dieguito River, and San Diego River hydrologic units (Water Authority 1997).
- **Toxic Organic Compounds**. Several toxic organic compounds have been detected in groundwater within the Region's aquifers. Underground fuel tanks are a common source of groundwater contamination that may result in noncompliance with state and federal drinking water limits for benzene, methyl-tertiary-butyl ether (MTBE), and other volatile organic compounds. MTBE, in particular, is a key contaminant due to its low State of California primary MCL of 5 µg/l and its ability to be rapidly dispersed by diffusion and advection throughout an aquifer. The State Board's Geotracker database system lists more than 100 sites of documented leaking underground fuel tanks within the Region's eleven hydrologic units. Although contamination effects from most of these sites are localized, a mile-long plume of petroleum derivatives from the Mission Valley Terminal (a fuel storage facility) contaminates portions of the Mission Valley aquifer in the San Diego River Watershed. The Mission Valley Terminal is under a Regional Board Order to clean up the site by year 2010 (Regional Board 2005b).

Groundwater quality concerns in the Region's aquifers are being addressed by the local water suppliers that extract groundwater, in coordination with the Regional Board.

Table 7-2
Summary of Water Quality Issues within the Region's Principal Groundwater Aquifers[1]

HU Name	HU Subarea	Aquifer	TDS Concentration Range (mg/l)	Water Quality Constituents of Concern			
				TDS	Nitrate	Iron & Manganese	Toxic Organics
San Juan	901.4	San Mateo	400 – 800	•	•		•
	901.5	San Onofre	600 - 1500	•	•		•
Santa Margarita	902.00	Lower Santa Margarita	600 – 750	•		•	•
San Luis Rey River	903.1	Mission	500 - 2000	•		•	•
		Bonsall	600 - 3400	•	•		
		Moosa Canyon	200 – 900	•	•		
	903.2	Pala/Pauma	350 - 1400	•	•		
	903.3	Warner	250 – 350				
San Dieguito River	905.1	Lower San Dieguito	1000 - 27,000	•		•	
	905.3	San Pasqual	320 - 2500	•	•		
	905.4	Santa Maria	500 - 1500	•	•		
San Diego River	907.1	Mission Valley	1000 - 3000	•		•	•
		Santee/El Monte	500 - 3000	•		•	
Sweetwater	909.1	Lower Sweetwater	1700 - 3100	•			
	909.2	Middle Sweetwater	300 - 1400	•			
Tijuana River	911.1	Lower Tijuana	500 - 3000	•			
Pueblo Sweetwater Otay River Tijuana River	908.00 909.00 910.00 911.00	San Diego Formation	340 – 12,000	•			

1. From Water Authority Groundwater Report (1997). See footnotes in Table B-18 of the San Diego IRWM Plan (2007).

Indirect Potable Reuse

Indirect potable reuse (IPR) occurs when advanced treated recycled water is discharged either into a groundwater aquifer or surface water body that ultimately supplies an area's drinking water system. Groundwater recharge methods include surface spreading, where recycled water is released into open basins and the water seeps down through the soil into the groundwater basin. When using IPR for reservoir augmentation, the treated water is allowed to reside under natural environmental conditions, providing for natural reduction of trace contaminants due to microbial degradation, oxidation, and dilution.

Extensive permitting and regulatory interaction is required prior to starting an IPR project. Specifically, regulations require advanced treated water to be stored in the reservoir for a minimum of 12 months to blend with the untreated water already within the reservoir. An issue of concern associated with IPR is unregulated compounds that have been detected in trace amounts in wastewater discharges. These include household and industrial chemicals such as flame retardants, plasticizers, detergent metabolites and commonly used pharmaceutical and personal care products (PCPPs) such as prescription and non-prescription drugs, fragrances and anti-microbial cleaning agents. Some of these compounds are known or suspected carcinogens; others are estrogenic and have the potential to adversely affect the endocrine system of humans and aquatic organisms. These compounds are not presently regulated at the federal, state or local level.

In the City's Water Reuse Study (2006), several City reservoirs were evaluated for reservoir augmentation concept projects. Sutherland, Morena and Barrett Reservoirs were determined to be unsuitable due to their distance from the City's recycled water facilities. Miramar and Murray Reservoirs were too small for further consideration, due to retention time requirements. San Vicente was determined most suitable for a large-scale reservoir augmentation project due to its large size and ability to provide the appropriate retention time.

Consideration of the various IPR options was resulted in substantial public debate. Although reclaimed water has been used successfully in many parts of the U.S. to meet non-potable water needs, citizens are just beginning to understand and accept the use of highly treated reclaimed water for potable uses. Through the course of the IRWM program, key supporters (City of San Diego) and opposition (CoastKeeper, Chamber of Commerce) were able to better understand the IPR proposal and reach agreement on its benefits.

Desalination

Desalination involves the removal of salts, minerals, and other biological or organic chemical compounds to produce a high quality water supply. Desalination methods include multi-stage flash distillation and, more recently, reverse osmosis. Desalination is being considered in the Region to help meet local water supply needs. A 50 MGD seawater desalination plant at the Encina Power Station in Carlsbad, a public-private partnership between the City of Carlsbad and Poseidon Resources, will be on-line by 2011. Nine water agencies have entered into long-term water purchase agreements with the Carlsbad desalination plant. The Water Authority and the Municipal Water District of Orange County (MWDOC) are considering building a 50-100 MGD seawater desalination plant at Camp Pendleton, using the intake and outfall structure from Unit 1 of the San Onofre Nuclear Generating Station, which is being decommissioned.

One of the main environmental considerations of seawater desalination plants is the impact of the open ocean water intakes on marine life from impingement and entrainment. Impingement takes place when organisms are trapped against the intake screens by the force of the water passing through the desalination facility intake structure. Entrainment occurs when organisms are drawn through the intake structure into the desalination plant. Organisms small enough to pass through the screens and become entrained in the desalination system include phytoplankton and zooplankton (e.g., larvae of benthic invertebrates and fish eggs). Depending on the design of the intakes, impingement and entrainment may result in a reduction of fish populations, including special-status fish species. Another environmental consideration is the impact of returning brine, a saline waste product, to the ocean. Brine disposal could increase the salinity and temperature of the receiving water and thus affect marine organisms, especially those that are sensitivity to such increases.

In addition to effects on marine resources, operation of desalination plants would require the use of a substantial amount of energy. Energy consumption indirectly increases the Region's reliance on fossil fuels, emissions of GHGs, and potentially contributes to long-term climate change. However, the energy requirements of a desalination plant must be weighed against the amount of energy required to pump water from the Delta to Southern California. Because of these concerns, numerous environmental groups have opposed construction of large-scale desalination plants. Many people support seawater desalination as a means to increase the Region's supply of highly reliable local water. A regional discussion of the benefits of desalination, including water supply reliability during prolonged drought, has occurred through the course of the IRWM program.

Tijuana River Valley

The Tijuana River watershed encompasses a region of approximately 1,750 square miles on either side of the California – Baja California border. The Tijuana River discharges into the Tijuana River Estuary in the U.S. The Tijuana River watershed is classified as a Category I (impaired) watershed by the State Water Resources Control Board due to a variety of water quality problems, including sewage, urban runoff, fertilizers and pesticides, and illegal dumping of toxics by industries and businesses in Mexico. The Tijuana River and Estuary are listed on the Section 303(d) list for the following pollutants/stressors: eutrophic, coliform bacteria, organic enrichment/ low dissolved oxygen, lead, nickel, pesticides, solids, synthetic organics, trace elements, thallium, and trash (State Board 2006). Experts have measured some of the highest concentrations of suspended solids, cadmium, copper, nickel, lead, zinc and poly-chlorinated biphenyls (PCBs) in Southern California in the Tijuana River discharges. Heavy metals can bioaccumulate in people and animals, causing health problems (SDSU 2009).

Problems also result from the hilly topography and unplanned squatter settlements on slopes, including erosion, flooding, and landslides. Intense precipitation resulted in severe floods in 1980, 1983, and 1993. These floods had devastating effects on natural habitat, structures, personal property, and transportation facilities in the Tijuana River Valley. It is anticipated that flooding will continue due to runoff from increased urbanization, clogging of stream channels from sediment and debris, and an inadequate municipal storm drainage systems (SDSU 2009).

The MS4 Permit requires the County, the City of San Diego, and the City of Imperial Beach (Tijuana Copermittees) to collaborate in the development and implementation of a WURMP that addresses surface water quality for the

Tijuana River watershed. By identifying and targeting the various causes of pollution within the watershed through a collaborative process, the WURMP strives to improve water quality and protect the beneficial uses that the watershed provides.

Santa Margarita Watershed

The Santa Margarita River watershed has been subject to over 80 years of water rights litigation, studies, and hearings. However, a partnership between San Diego and Riverside county agencies via the Tri-County FACC is helping to address those conflicts. In addition to the City, the County, and the Water Authority, a representative from FPUD (located in the lower Santa Margarita River watershed), a RAC member, also participates in the Tri-County FACC.

Water Rights

Water rights conflicts began in 1926 when Vail Ranch (the land grant occupying Temecula Valley) was sued by Rancho Santa Margarita (which later became U.S. Marine Corps Camp Pendleton) over water rights in the Santa Margarita River. This litigation was settled with the "1940 Stipulated Judgment" dividing the water resources between the litigants but setting the stage for the present, unresolved dispute since it failed to account for a 1930 appropriative permit issued to Fallbrook Irrigation District (Davies 2004).

In 1954, an effort was made to settle the controversy by legislation with the enactment by Congress of P.L. 83-547, the Santa Margarita Project Act. This Act provided for the construction of a dam and reservoir, and for the division of appropriated water on a 60-40 basis to the Navy (for Camp Pendleton) and FPUD. This provision for the division of water was not accepted by the Department of Justice, so litigation was resumed through 1963. The trial court ruled in favor of the federal government and declared the 1940 Stipulated Judgment null and void. The State of California interceded on FPUD's behalf before the Appellate Court. In 1966, the Appellate Court overruled the trial court, validated FPUD's water rights, and reinstated the 1940 Stipulated Judgment ("Modified Final Judgment and Decree" entered on April 6, 1966 by the U.S. District Court in United States v. FPUD) (Davies 2004).

In the 1980s, the U.S. Bureau of Reclamation, FPUD, and the Navy studied water supply and flood control projects in the watershed. The Navy's study determined that the base could resolve its flood control issues with levees and get a pipeline connection to the Water Authority to get access to imported water. FPUD's study determined that it was neither financially nor environmentally feasible to construct a dam at that time (Davies 2004).

Recycled Water / Water Quality

The Santa Margarita River water rights saga continued in 1990 with the "Four Party Agreement" between Rancho California Water District (RCWD), FPUD, Eastern MWD, and Camp Pendleton regarding discharge of recycled water to the Santa Margarita River for groundwater recharge. The agreement recognized that if upstream dischargers put recycled water into the Santa Margarita River, then suppliers in the lower watershed would benefit from the water supply. The parties agreed to develop a joint project – the Conjunctive Use Project – to operate the groundwater basin and treatment facilities (Davies 2004).

In 1992, Waste Discharge Requirements (WDRs) for Rancho's Santa Rosa Water Reclamation Facility (SRWRF) were adopted by the Regional Board (Order No. R9-2002-0104). The WDRs contain revised nutrient (nitrogen and phosphorous) effluent limitations in accordance with the Basin Plan. Wastewater from the SRWRF contains total nitrogen and total phosphorous at concentrations that comply with existing requirements for reclamation and discharge to groundwater, but that exceed the receiving water quality objectives applicable to Murrieta Creek. The ongoing conflict between the parties now involves uncertainty about meeting Regional Board effluent standards, which dictates the ability of RCWD to discharge into the watershed.

Groundwater

While the federal and local agencies were embroiled in ongoing litigation, groundwater withdrawals increased with urban and agricultural activities. The Santa Margarita groundwater basin is an adjudicated groundwater basin managed by Santa Margarita River Watershed Watermaster established by the U.S. District Court in "Modified Final Judgment and Decree." However, the "Four Party Agreement" was intended to provide adequate recycled water discharges to allow continued pumping in the basin. The nutrient exceedances and subsequent litigation described above also have a substantial bearing on groundwater resources.

7-3 Efforts to Develop Integrated Programs and Projects

This section addresses the following Reviewer questions:

- *Based on the efforts described, does it appear that multi-benefit, integrated, programs and projects will be developed to meet regional priorities? It is not necessary for the RWMG to identify or discuss specific projects. The purpose of this question is to determine if the described efforts and process would most likely result in a list of programs and projects that meet a shared vision of regional priorities.*

The IRWM planning process, by nature of encouraging multi-benefit water management projects, is the Region's foremost effort to develop integrated programs and projects. Through development of the IRWM Plan and associated Proposition 50 Implementation Grant proposal, agencies and organizations throughout the Region developed new partnerships and combined water management strategies into integrated projects. The 160 projects included within the 2007 IRWM Plan demonstrate the Region's efforts to develop integrated programs and projects. Attachment F contains a crosswalk of the IRWM projects and water management strategies.

As noted in **Section A (pages A-10 to A-12) of the IRWM Plan**, numerous water management plans have been developed by individual or multiple agencies or groups within the Region to address water supply, water quality, ecosystem and habitat protection, recreation, and land use controls. However, many of the plans overlap in geography, scope, or agency jurisdiction. Challenges to addressing water management issues identified within these local plans include: competing objectives among plans; unequal geographical representation; jurisdictional conflicts; regulatory constraints; and environmental impacts.

As shown in Table 7-3, the IRWM program provides a process to address and resolve conflicts within local plans through a collaborative regional effort. Additionally, the IRWM Plan may prove useful in addressing environmental and regulatory issues on a regional basis.

7-4 Water Related Components in Region

This section addresses the following Reviewer questions:

- *Does the submittal provide a comprehensive understanding of the water resources available to the region and provide context to the region's water management challenges today and into the future?*
- *Are the extent and conditions of the water infrastructure in the region well understood?*
- *Is it clear where the critical components of the water system reside and the parties responsible to manage and maintain them historically?*
- *When were they put into service and are there capital improvement plans to repair or replace them in the near future?*
- *Does the described system omit any obvious water-related components such as watersheds, surface water impoundments, ground water basins, water collection systems, distribution systems wastewater systems, flood water systems, or recharge facilities?*

The following sections describe the water management components within the Region, including watersheds, surface water resources, coastal waters, groundwater resources, the imported water system, local water supplies, and wastewater and recycled water facilities.

Overview of Regional Water Supply

Water is brought into the Southern California region from two major sources: the Sacramento-San Joaquin Delta and the Colorado River. Metropolitan, the water wholesaler for Southern California, imported an average of 703,000 AFY from the State Water Project (SWP) and 680,000 AFY or more from the Colorado River Aqueduct (CRA) (depending on the availability of surplus water) from 1972 to 2007. Metropolitan wholesales the water to a consortium of 26 cities and water districts, including the Water Authority, which in total serve nearly 18 million people that reside in the South Coast.

Table 7-3
How the IRWM Plan Can Help Resolve Challenges to Water Management in the Region

Challenges	Solutions
Potential for Competing Plans: Resolving competing objectives and conflicts within water supply, watershed protection, storm water management, and land use plans.	The IRWM Plan institutional structure (currently the RWMG and RAC) provides a mechanism to consider individual plans in a regional, more comprehensive manner, to determine where plans can complement each other and move forward more effectively with complimentary projects.
Jurisdictional Issues: Resolving jurisdictional interests or conflicts that may constrain the evaluation and implementation of individual water management projects.	The IRWM Plan institutional structure (currently RAC and RWMG) brings jurisdictions together to resolve potential conflicts and prioritize projects for potential state funding.
Conflicts Between Government Agencies and Non-Government Organizations: Resolving conflicts or competing interests between government agencies and non-government organizations or groups. .	The IRWM Plan institutional structure brings government agencies and non-government organizations together to address common issues, resolve potential conflicts, and prioritize projects for potential state funding. Such a forum did not previously exist on this scale.
Regulatory Constraints: Resolving regulatory conflicts or constraints associated with developing individual water management projects.	The IRWM Plan provides a unified regional approach for identifying and assessing regulatory compliance issues. Such a regional approach may provide greater opportunity for coordinating and resolving regulatory constraints than through implementation of individual projects.
Environmental Challenges: Resolving environmental conflicts or constraints associated with developing individual water management projects.	The IRWM Plan provides a unified regional approach for identifying and assessing environmental compliance challenges and environmental enhancement opportunities. A regional approach may provide greater opportunity for coordinating and resolving environmental issues than through implementation of individual projects.
Public Acceptance: Securing support from elected officials and public for development of water management projects.	The IRWM Plan allows for greater public understanding and acceptance of a proposed project in part because the project was considered in the context of the Region and other management strategies. Additionally, integration allows for the attainment of broad based objectives that benefit multiple aspects of water management planning.
Funding: Securing funding for developing water management projects and programs.	The IRWM Plan process will allow entities to identify opportunities for implementing a collaborative or regional funding approach. Projects included within the IRWM Plan may have an increased eligibility for some forms of state funding.

The California SWP is a system of reservoirs, pumps and aqueducts that carries water from Lake Oroville and other facilities north of the Delta to central and southern California. Metropolitan's contract with DWR, operator of the SWP, is for 1.91 million acre-feet (MAF) annually – about half the annual project yield (although the project seldom provides its entire contracted amount). SWP supplies are delivered to SWP contractors via the California Aqueduct and to sub-contractors through the regional conveyance system.

California water agencies are entitled to 4.4 MAF annually of Colorado River water. Of this amount, 3.85 MAF are assigned to agricultural users and 550,000 acre-feet per year (AFY) is Metropolitan's entitlement. Until a few years ago, Metropolitan routinely had access to 1.2 MAF annually because Arizona and Nevada had not been using their full entitlement and the Colorado River flow was often adequate enough to yield surplus water. Today, thanks to transfer programs with agricultural suppliers, Metropolitan receives between 660,000 and 850 AFY in a typical year through the CRA. Metropolitan delivers the available water via the 242-mile CRA and the regional conveyance system. Additionally, the Water Authority has established conservation and transfer agreements with IID and canal-lining projects to augment its supplies. When fully implemented, these programs will provide 277,000 AFY to the San Diego region. The Water Authority and its member agencies are pursuing supply diversification through the IID transfer; the canal-lining projects; water conservation measures; development of seawater desalination capability;

expanding use of recycled water; and increasing development of local groundwater and surface water storage capacity. The Water Authority expects to decrease its reliance on water imported through Metropolitan from 76 percent in 2008 to 29 percent in 2020.

As described below, demand for water in the Water Authority's service area includes approximately 80-85 percent municipal and industrial (M&I) demand and 10-20 percent agricultural demand. Approximately two-thirds of M&I demand is currently for residential use, much of which is used for outdoor landscaping. Virtually all of the Region's agricultural demands are used for crop irrigation. Because a significant portion of the overall regional water demand is for irrigation, weather and hydrologic conditions (precipitation, temperature, evaporation) have a significant effect on water demands within the Water Authority service area.

Following use of the Region's water supplies, wastewater is either reclaimed at one of 17 tertiary treatment facilities or discharged to one of five deep-water ocean outfalls. The use of tertiary treated recycled water within the Region is projected to increase to approximately 45,550 AFY by 2020.

Agencies Responsible for Water Management

As described in **Section 2 of this RAP Application**, there are numerous agencies and organizations throughout the Region with statutory authority over water management, including water supply, wastewater and reclamation, flood control, and environmental management. Table 2-5 provides a summary of the many agencies and organizations responsible for water management in the Region.

Watersheds

As described in **Section B.3 (pages B-14 to B-22) in the IRWM Plan** and on Figure 6-6 (previous), the proposed Region is comprised of eleven DWR-designated hydrologic units that are tributary to coastal waters. Table 7-4 summarizes characteristics of the eleven hydrologic units. Seven of the hydrologic units comprise watersheds for major water courses, while four of the hydrologic units are comprised of multiple watersheds that drain to coastal waters or coastal wetlands. Watershed-scale maps of each hydrologic unit and its principal features are included in **Appendix 1 of the IRWM Plan**.

San Juan Hydrologic Unit (901)

The San Juan Hydrologic Unit is comprised of five hydrologic areas. Two of the hydrologic areas are within the Region and are addressed in the IRWM Plan, including:

- San Mateo Hydrologic Area (the drainage area of San Mateo Creek) and
- San Onofre Hydrologic Area (which includes drainage areas of San Onofre Creek, Las Pulgas Creek, and Stuart Mesa).

The portion of the San Juan Hydrologic Unit that is within San Diego County covers approximately 150 square miles and lies within the jurisdiction of the U.S. Marine Corps Base Camp Pendleton. Camp Pendleton lands are largely open space and support nearly intact habitats. Water supply within the Camp Pendleton portion of the San Juan Hydrologic Unit is from local groundwater and treated waste-water that is percolated back into the ground.

Santa Margarita River Watershed (902)

The Santa Margarita River Watershed encompasses approximately 750 square miles in northern San Diego and southwestern Riverside Counties. Approximately 27% (200 square miles) of the watershed is within the Region. The Santa Margarita River is the primary watercourse in the watershed. The river is formed by the confluence of Temecula and Murrieta Creeks immediately upstream from the San Diego-Riverside County border. Rapidly urbanizing areas of Riverside County exist in the upstream portion of the basin, while the lower portion of the watershed within San Diego County is largely undeveloped and includes portions of Camp Pendleton. The watershed features chaparral-covered hillsides, riparian woodlands, and coastal marshes. The Santa Margarita River discharges to an estuary in an undeveloped downstream portion of Camp Pendleton.

Groundwater basins within the lower portion of the Santa Margarita Hydrologic Unit represent a most important local water supply source within the Region, and represent the primary source of supply to Camp Pendleton. Camp Pendleton is in the process of implementing a series of federally funded master-planned water supply projects that include groundwater treatment for iron and manganese and a future-proposed groundwater demineralization facility.

Table 7-4
Summary of the Region's Hydrologic Units[1]

HU	Name	Watershed Area (sq. miles)	Primary Watercourses or Hydrologic Areas	Approximate Length (miles)	Elevation Range (feet MSL)	Primary Tributaries
901	San Juan	150	San Mateo Creek San Onofre Canyon Las Pulgas Canyon	21	0 - 3575	Coastal estuaries/marshes Pacific Ocean
902	Santa Margarita River	200	Santa Margarita River	55	0 – 6190	Santa Margarita Estuary Pacific Ocean
903	San Luis Rey River	558	San Luis Rey River	52	0 – 6530	San Luis Rey River Mouth Pacific Ocean
904	Carlsbad	210	Loma Alta Creek	8	0 – 460	Loma Alta Slough Pacific Ocean
			Buena Vista Creek	11	0 – 1670	Buena Vista Lagoon Pacific Ocean
			Encinitas	4	0 - 350	Pacific Ocean
			Aqua Hedionda Creek	10	0 – 1300	Agua Hedionda Lagoon Pacific Ocean
			San Marcos Creek	14	0 – 1670	Batiquitos Lagoon Pacific Ocean
			Escondido Creek	24	0 – 2330	San Elijo Lagoon Pacific Ocean
905	San Dieguito River	346	San Dieguito River	42	0 – 5720	San Dieguito Lagoon Pacific Ocean
906	Peñasquitos	100	Los Peñasquitos Creek Rose Creek Tecolote Creek	18	0 – 2700	Los Peñasquitos Lagoon Mission Bay
907	San Diego River	440	San Diego River	44	0 – 6510	San Diego River Estuary Pacific Ocean
908	Pueblo	60	Chollas Creek	8	0 – 830	San Diego Bay Pacific Ocean
909	Sweetwater River	230	Sweetwater River	41	0 – 6510	Sweetwater River Estuary San Diego Bay
910	Otay River	160	Otay River	23	0 – 3720	San Diego Bay
911	Tijuana River	470	Tijuana River	47	0 – 6380	Tijuana River Estuary Pacific Ocean

1. Adapted from basin descriptions presented in r Quality Control Plan for the San Diego Basin (Regional Board 1994. See footnotes in Table B-9 of the San Diego IRWM Plan (2007).

San Luis Rey River Watershed (903)

The 558-square mile San Luis Rey River Watershed is the largest watershed completely within the Region. The San Luis Rey River is the primary watercourse within the watershed, and discharges to the Pacific Ocean northern Oceanside. The watershed is bounded by the Moserate Mountains to the north, Cleveland National Forest and Camp Pendleton to the northwest, and the Cities of Oceanside, Vista, San Marcos, and Escondido to the south and has two major drinking water reservoirs (Lake Henshaw and Dixon Lake). Roughly one-fourth of the land area in the watershed is located west of Interstate 15, and this area has multiple uses including open space/ undeveloped, residential, commercial/ industrial, and agricultural. East of Interstate 15, most of the land is either undeveloped or agricultural. Land use authorities include the County, the State, the Federal government, and several tribal nations.

Groundwater and surface waters in the upstream portion of the San Luis Rey River Watershed are an important local supply source for the Vista Irrigation District, City of Escondido, Pala/Pauma communities, and local Indian Tribes. However, several large water agencies within the watershed (e.g. Valley Center MWD, Rainbow MWD, FPUD) are virtually 100 percent reliant on the availability of imported water. The City of Oceanside is the only agency in the

downstream portion of the watershed that develops local supply. This supply is developed through demineralization of brackish Mission Basin groundwater.

Carlsbad Hydrologic Unit (904)

The Carlsbad Hydrologic Unit features a significant number of the Region's coastal lagoons. The Carlsbad Hydrologic Unit is comprised of six small hydrologic areas, five of which are tributary to major coastal lagoons:

- Loma Alta (904.1), which drains to Loma Alta Slough;
- Buena Vista Creek (904.2), which drains to Buena Vista Lagoon;
- Agua Hedionda (904.3), which drains to Agua Hedionda Lagoon;
- Encinas (904.4);
- San Marcos (904.5), which drains to Batiquitos Lagoon; and
- Escondido Creek (904.6), which drains to San Elijo Lagoon.

Approximately half of the 211 square mile Carlsbad Hydrologic Unit is urbanized, with a high percentage of the undeveloped land in private ownership. Urban and agricultural runoff is a critical concern within the Carlsbad Hydrologic Unit, and can impact both the coastal lagoons and local beaches.

Water supply reliability is also critical issue within the Carlsbad Hydrologic Unit, as some water agencies (e.g. City of Carlsbad) are currently 100 percent reliant on imported supply. Additional water supply agencies that provide service within portions of the hydrologic unit include the Olivenhain MWD, Vista Irrigation District, and San Dieguito Water District. Surface reservoirs within the hydrologic unit include Dixon, Maerkel, Olivenhain, San Dieguito, and Wohlford. Only a limited quantity of groundwater exists within the Carlsbad Hydrologic Unit, and groundwater salinity represents a limitation to its use as a potable supply.

San Dieguito River Watershed (905)

The San Dieguito River Watershed covers approximately 346 square miles. Approximately 80 percent of the watershed is within the unincorporated portion of the County. The watershed includes two major surface water reservoirs (Sutherland Reservoir and Hodges Reservoir). The City of San Diego owns a significant portion of the land in the immediate river valley between these two reservoirs and leases much of the land for agriculture. Land use within the watershed is currently 54 percent vacant or undeveloped and 29 percent parks or open space. Neither Sutherland Reservoir nor Lake Hodges is currently connected to the Region's imported water system, although Sutherland Reservoir water can be diverted to San Vicente Reservoir in the San Diego River Watershed. Future facility improvements proposed as part of the Water Authority's ESP, however, will connect Lake Hodges with the San Diego Aqueduct and Olivenhain Reservoir. As a result, Lake Hodges is projected to become an increasingly important component of the Region's water supply system.

Groundwater basins in the San Pasqual Valley are owned by the City of San Diego. While public water supply is not currently developed from the San Pasqual basins, the basins represent an important potential additional source of local water supply. High groundwater TDS concentrations in the downstream portion of the San Pasqual Valley and downstream from Lake Hodges limit the usability of groundwaters in those areas.

Despite two surface water reservoirs along the San Dieguito River, flood control issues remain a key concern. Lake Hodges spilled 13 times during the period 1955-2005, representing a once-in-four-years period or recurrence. In addition to flooding in the lower San Dieguito basin associated with the Lake Hodges spills, local flood threats to developed areas exist within the Escondido and Ramona portions of the watershed.

Peñasquitos Hydrologic Unit (906)

The Peñasquitos Hydrologic Unit is located within the Mission Bay watershed management area. The Peñasquitos Hydrologic Unit covers approximately 100 square miles primarily within the northern portion of the City of San Diego and the City of Poway. The hydrologic unit is densely developed with a population of approximately 400,000. The Peñasquitos Hydrologic Unit includes two important watershed areas, including:

- Miramar Reservoir (906.1) and Poway (906.2) Hydrologic Areas, which are drained by Los Peñasquitos Creek. Los Peñasquitos Creek discharges to Los Peñasquitos Lagoon and Torrey Pines State Beach.

- Miramar (906.4) and Tecolote (906.5) Hydrologic Areas and a portion of the Scripps (906.3) Hydrologic Area, all which drain to Mission Bay.

Los Peñasquitos, Rose, and Tecolote Creeks exist within undeveloped canyons that wind through the highly urbanized watershed. Los Peñasquitos Lagoon and Mission Bay are highly utilized recreational areas that support diverse native fauna and flora.

No significant groundwater resources exist within the Peñasquitos Hydrologic Unit. Except for a small amount of local runoff that enters Miramar Reservoir (a small reservoir used to store imported supply), no water supply is developed within the hydrologic unit.

Additionally, two ASBS are located offshore of La Jolla Shores Beach. The two ASBS extend westward from the shore as a broad sloping sandy shelf giving way to a submarine canyon (see detailed description below).

- La Jolla State Marine Conservation Area (ASBS No. 29) is a 518-acre refuge containing a wide variety of habitats including: a broad sloping sandy shelf, a submarine canyon, a small giant kelp forest, small submerged cobble patches, reefs composed of flat sandstone/shale ledges interspersed with patches of sand, and a boulder-strewn mudstone reef complex.
- San Diego-Scripps State Marine Conservation Area (ASBS No. 31) is a 92-acre containing three distinct habitats: a broad sloping sandy shelf concrete pier pilings that support the SIO pier; and a small intertidal and shallow subtidal mudstone reef complex of dikes, boulders and ledges.

San Diego River Watershed (907)

The San Diego River Watershed covers 440 square miles and supports a larger population than any of the Region's other hydrologic units. This population, however, is largely confined to the urbanized downstream portion of the watershed in the Cities of San Diego, El Cajon, La Mesa, Poway and Santee. Approximately 60 percent of the San Diego River Watershed is currently undeveloped, with most of this undeveloped land being in the eastern upstream portion of the watershed in the unincorporated county. Cleveland National Forest, Mission Trails Regional Park, and the river flood plain near Lakeside represent important undeveloped areas that support intact habitat and endangered species.

The San Diego River Watershed features two large water supply reservoirs (San Vicente and El Capitan). El Capitan is the largest reservoir in the County, but San Vicente is the most important reservoir in the region due to the following factors: it is a key terminus of the San Diego Aqueduct; it is the second-largest reservoir in the County; it can receive diverted supplies from both El Capitan Reservoir and Sutherland Reservoir; it is connected to the Region's largest water filtration plant (the 150 mgd City of San Diego Alvarado plant); and it can be used to divert stored supplies to South County water agencies.

Significant groundwater resources exist within the watershed, but groundwater use is limited in downstream portions of the watershed due to high TDS concentrations. Additionally, an underground fuel plume near Qualcomm Stadium impacts groundwater in Mission Valley.

Flood protection within Mission Valley is provided by the First San Diego River Project, but flooding issues exist within the middle portions of the basin that include the communities of Lakeside and Alpine.

Pueblo Hydrologic Unit (908)

The Pueblo Hydrologic Unit drains to the San Diego Bay, and covers approximately 60 square miles of urbanized land along San Diego Bay within the Cities of San Diego, La Mesa, Lemon Grove and National City. With a population of approximately 500,000, the Pueblo Hydrologic Unit is the most densely populated hydrologic unit in the County. Chollas Creek is the largest of several drainage courses within the hydrologic unit. A relatively large percentage of the Pueblo Hydrologic Unit land is used for transportation corridors and highways. Due to the high level of existing urbanization in the watershed, only small amounts of additional land are projected for development over the next 15 years.

Five sites in San Diego Bay that are impacted by runoff from the Pueblo Hydrologic Unit have been designated as toxic hot spots by California's Bay Protection Toxic Cleanup Program. No water supply is currently developed within the Pueblo Hydrologic Unit, but portions of the San Diego Formation (a deep confined groundwater aquifer) are believed to underlie portions of the hydrologic unit.

Sweetwater River Watershed (909)

The Sweetwater River Watershed drains to the San Diego Bay, and covers approximately 230 square miles in an area extending from the Laguna Mountains in the east to San Diego Bay. The Sweetwater River is the primary watercourse within the watershed, and two major reservoirs (Loveland and Sweetwater, both operated by Sweetwater Authority) exist along the river. The downstream portion of the watershed below Sweetwater Reservoir is urbanized, approximately 20 percent of the watershed is dedicated open space or used for agriculture, and an additional 50 percent is undeveloped. Much of the undeveloped land is in the upper one-third of the watershed and is within the unincorporated county, the Cleveland National Forest, and Cuyamaca Rancho State Park. The middle portion of the watershed (between Loveland and Sweetwater Reservoirs) includes the unincorporated communities of Jamul, Dehesa, and Harbison Canyon.

Significant groundwater resources exist in the Middle Sweetwater River Basin (between Loveland and Sweetwater Reservoirs) and the Lower Sweetwater River Basin (downstream from Sweetwater Reservoir). Sweetwater Authority develops potable supply from brackish groundwater from the Lower Sweetwater River Basin.

Otay River Watershed (910)

The Otay River Watershed drains to the San Diego Bay, and covers approximately 160 square miles. The Otay River is the primary watercourse in the watershed. Upper and Lower Otay Reservoirs (owned and operated by the City of San Diego) are within the watershed, and represent the southernmost terminus of the San Diego Aqueduct. Lower Otay Reservoir impounds imported water and local runoff diverted from the Otay River Watershed. Upper Otay Reservoir impounds only local runoff. Approximately two-thirds of the watershed is currently preserved as open space. The downstream portion of the watershed within the City of Chula Vista is rapidly developing. Urban and residential land use comprises approximately 20 percent of the watershed.

Approximately 36 square miles of the watershed is within the MSCP Plan area. Other important conservation areas within the watershed include the San Diego National Wildlife Refuge, the Rancho Jamul Ecological Reserve, and vernal pool lands. Water service within the upstream portion of the watershed is provided by the Otay Water District, which is dependent on the uninterrupted availability of Water Authority treated water supplies.

Tijuana River Watershed (911)

The Tijuana River Watershed encompasses approximately 1,750 square miles on either side of the U.S./Mexico border. Twenty-seven percent of the watershed area (470 square miles) is within California; essentially all of this area is in the upper reaches of the watershed. The downstream end of the Tijuana River flows from Mexico across the International Border to the Tijuana Estuary in California. Morena and Barrett Reservoirs are located in the upstream portion of the watershed. Water impounded in these reservoirs is transferred to the Otay River Watershed via the Dulzura Conduit. Urban centers within the watershed include the cities of Imperial Beach and San Diego in the United States, and the cities of Tijuana and Tecate in Mexico.

With a population of approximately one million people, urban stormwater runoff pollution from Mexico has created significant impacts within the downstream portion of the Tijuana River Watershed in the U.S. The State Board classifies the Tijuana River Watershed as an impaired watershed.

Surface Water Resources

As described in **Section B.5 (pages B-28 to B-33) of the IRWM Plan**, the Basin Plan designates beneficial uses for surface water, coastal waters, and reservoir and lake resources within each hydrologic area of the Region's eleven hydrologic units. **Appendix 2 in the IRWM Plan** presents beneficial uses designated in the Basin Plan for each of the hydrologic units. The Basin Plan designates wildlife habitat, water contact recreation, and non-contact recreation of surface waters as a beneficial use within each of the Region's hydrologic units. Additionally, portions of each hydrologic unit have been designated as warm-water or cold-water aquatic habitats. Municipal, agricultural, and industrial supplies are designated as beneficial uses of surface waters within ten of the eleven hydrologic units.

By volume, most of the surface flow in streams and rivers within the Region is from precipitation runoff (storm events). The amount of storm precipitation that becomes streamflow depends on (1) topography, land uses, and soil permeability, (2) the frequency and timing of storm events, and (3) stormwater management practices. Streamflows during non-storm periods are the result of urban runoff, agricultural runoff, and surfacing groundwater. Dry weather

flows, though small by volume, are significant in that they may carry pollutant loads and can alter the seasonal nature of aquatic and riparian habitats.

Stream gauging stations monitored as part of the U.S. Geological Survey (USGS) network currently exist in all but two of the Region's hydrologic units. Table 7-5 summarizes permanent streamflow monitoring stations within the region. As shown, more than 50 years of streamflow data are available from twelve of the Region's streamflow gages. The table also presents mean and median annual streamflow at each of the existing USGS stream gauging stations. Mean streamflow values are skewed upward by a few extreme hydrologic events, and surface flows in excess of the annual mean may only occur during a limited portion of the year. Median streamflows are more characteristic of the surface runoff that occurs on most days.

Table 7-5
U.S. Geological Survey Surface Flow Gauging Stations[1]

HU	HU Name	Historical Gaging Stations in Watershed	Currently Operating Stream Gages	Annual Streamflow (cubic feet per sec.)		Period of Record
				Median Value	Mean Value	
901	San Juan	11	Las Flores Ck. at Las Pulgas Cyn.	0.3	2.0	1999 - present
			Las Flores Creek near Oceanside	0.4	2.2	1952 – present
			San Onofre Creek at San Onofre	0.2	2.0	1947 – present
			Christianitos Ck. nr. San Clemente	0.5	4.9	1994 - present
			San Mateo Ck. near San Clemente	3.3	13.4	1953 – present
902	Santa Margarita River	10	Santa Margarita River at Ysidora	11.0	41.3	1923 – present
			Santa Margarita R. near Fallbrook	10.0	31.6	1924 – present
			O'Neill Spillway near Fallbrook	0.0	0.1	1998 - present
			Lake O'Neill outlet near Fallbrook	0.7	1.4	1998 - present
			Lake O'Neill trib. near Fallbrook	0.0	0.0	2001 - present
			Fallbrook Creek near Fallbrook	1.1	1.9	1993 - present
			DeLuz Creek near DeLuz	3.5	15.1	1992 - present
			DeLuz Creek near Fallbrook	0.8	4.3	1951 – present
			Rainbow Creek near Fallbrook	1.9	4.7	1989 - present
			Sandia Creek near Fallbrook	5.9	10.5	1989 – present
903	San Luis Rey River	11	San Luis Rey River at Oceanside	10.7	37.7	1912 - present
904	Carlsbad	1	[None currently operating]	NA	NA	NA
905	San Dieguito River	9	Santa Maria Creek near Ramona	0.9	6.8	1912 - present
			Guejito Creek near San Pasqual	0.4	3.0	1915 - present
			Santa Ysabel Creek near Ramona	1.7	10.9	1955 - present
906	Peñasquitos	10	Los Peñasquitos Creek at Poway	7.1	11.1	1964 - present
907	San Diego River	5	San Diego River at Fashion Valley	27.6	41.4	1982 - present
			San Diego River at Mast Blvd.	11.6	25.2	1912 - present
			Los Coches Creek near Lakeside	1.3	2.1	1983 – present
			Padre Barona Creek near Lakeside		5.52	2004- present
908	Pueblo	0	[None currently operating]	NA	NA	NA
909	Sweetwater	3	Sweetwater River near Descanso	2.0	9.1	1957 - present
			Sweetwater River near Dehesa			
910	Otay	2	Jamul Creek near Jamul	10.3	14.1	1940 - present
911	Tijuana River	7	Cottonwood Creek near Dulzura	1.2	15.5	1936 - present
			Campo Creek near Campo	0.3	3.5	1936 - present

1. Please see footnotes in Table B-12 of the San Diego IRWM Plan (2007).

Each of the watercourses follows the same general seasonal pattern of streamflow. As indicated by the monthly mean values in the figures, nearly 90 percent of the streamflow volume in the Santa Margarita, San Luis Rey, and San Diego Rivers occurs during the months of December through May. Most of this streamflow occurs as a result of

direct stormwater runoff from a few major storm events within each rainy season. Because significant precipitation within the region typically occurs on only 30 to 60 days of the year, streamflow on most days remains low.

Streamflow within the Region also varies markedly from year to year. During the 70-year period between 1935 and 2005, San Diego River flows at El Capitan Reservoir was less than 5,000 AF during 29 years, while ten years had greater than 50,000 AF of runoff. Streamflows at other gauging stations within the Region show a similar degree of year-to-year variability. Table B-13 compares pre-1975 and post-1975 summertime streamflow at the Santa Margarita, San Luis Rey, and San Diego River gauging stations. Each of these gauging stations includes significant upstream areas that have been urbanized within the past 30 to 40 years.

While runoff directly associated with precipitation contributes most of the annual volume of streamflow, urban runoff, agricultural runoff, and surfacing groundwater are the prime sources of surface flow during non-storm periods. The Region has experienced a trend of increasing non-storm flows during the past 30 years as the region has developed. Increased development has resulted in increased imported water use and increased urban runoff. Additionally, the availability of good-quality imported water within the Water Authority service area has resulted in reduced groundwater use in the Region's coastal areas during recent decades, increasing the amount of surfacing groundwater that contributes to streamflow in the downstream areas of the region.

As shown in Table 7-6, prior to 1975, San Diego and San Luis Rey median streamflows during July through October were zero. Since 1975, summertime streamflows of several cubic feet per second occur on a sustained basis.

Table 7-6
Comparison of Pre-1975 and Post-1975 Median Monthly Summer Streamflow
July through October[1]

Gaging Station	Median Monthly Summer Streamflow in Cubic Feet per Second (cfs)	
	Prior to 1975	After 1975
Santa Margarita River at Fallbrook	1.5	4.3
San Luis Rey River at Oceanside	0.0	3.8
San Diego River at Mast Boulevard	0.0	2.8

1. Mean monthly streamflow in cfs for the summer months June through October, as reported by U.S. Geological Survey (2006). Please see footnotes in Table B-13 of the San Diego IRWM Plan (2007).

Coastal Waters

As described in **Section B.5 (pages B-33 to B-34) of the IRWM Plan**, each of the Region's eleven hydrologic units features coastal water resources that support wildlife habitat, endangered species, and recreational uses. **Appendix 2 in the IRWM Plan** contains a list of the designated beneficial uses of Region coastal waters.

The Region's coastal lagoons represent a unique resource, and the Region features more coastal lagoons than any comparably-sized area in California. A total of eight of the eleven hydrologic units discharge to estuaries or brackish coastal lagoons, including:

- San Mateo Lagoon, San Onofre Lagoon, and Las Flores Lagoon (San Juan Hydrologic Unit),
- Santa Margarita River Estuary (Santa Margarita River Watershed),
- San Luis Rey River Estuary (San Luis Rey River Watershed),
- Loma Alta Slough, Batiquitos Lagoon, Buena Vista Lagoon, Agua Hedionda Lagoon, and San Elijo Lagoon (Carlsbad Hydrologic Unit),
- San Dieguito Lagoon (San Dieguito River Watershed),
- Los Peñasquitos Lagoon (Peñasquitos Hydrologic Unit),
- San Diego River Estuary (San Diego River Watershed), and
- Tijuana River Estuary (Tijuana River Watershed).

A portion of the Peñasquitos Hydrologic Unit (Rose and Tecolote Creeks) discharges to Mission Bay, a widely used regional recreational asset. Three Hydrologic Units (Sweetwater, Otay, and a portion of the Pueblo) discharge to San Diego Bay, an important regional commercial and recreational asset. Numerous recreational beaches also exist within the Region's eleven hydrologic units.

State Board Resolution No. 74-28 requires Regional Board's to designate coastal waters as Areas of Special Biological Significance (ASBS) if the waters contain "biological communities of such extraordinary, even though unquantifiable, value that no acceptable risk of change in their environment as a result of man's activities can be entertained." The Basin Plan designates two ASBS within the Region, both of which are coastal waters of the Peñasquitos Hydrologic Unit:

- **La Jolla State Marine Conservation Area (ASBS No. 29)** was set aside by the City of San Diego in 1971, in conjunction with CDFG. It extends from Goldfish Point northerly to the southerly end of the Scripps Institution of Oceanography and encompasses a surface area of 518 acres. This ASBS is also fully contained within the San Diego-La Jolla Underwater Park. It is somewhat pie-shaped, extending outward from the shore to a maximum distance of approximately one mile. The ASBS consists of a wide variety of habitats including: a broad sloping sandy shelf, a submarine canyon, a small giant kelp forest, small submerged cobble patches, reefs composed of flat sandstone/shale ledges interspersed with patches of sand, and a boulder-strewn mudstone reef complex. The submarine topography is similar to that of the San Diego Marine Refuge, consisting of a narrow continental shelf and submarine canyon. The La Jolla Canyon extends through the middle of the ASBS contributing to the wide variety of habitats. The La Jolla Canyon is a seaward extension of the Rose Canyon Fault that transects the watershed in a northwesterly angle.
- **San Diego-Scripps State Marine Conservation Area (ASBS No. 31)** was originally established in 1929 by the California Fish and Game Commission to allow licensees of the Regents of the University of California to take, for scientific purposes, any invertebrate (invertebrates include abalone, lobster, starfish, sea anemones, mussels, etc.) or specimen of marine plant life without a permit from CDFG. The refuge has a surface area of 92 acres, includes 0.6 miles of shoreline and extends 1,000 feet westward from the mean high tide line; just beyond the end of the Scripps Pier. This ASBS includes three distinct habitats: a broad sloping sandy shelf concrete pier pilings that support the SIO pier; and a small intertidal and shallow subtidal mudstone reef complex of dikes, boulders and ledges. Both the sandy shelf and reef complexes are entirely within the surf zone during periods of typical winter swell and storms. The ASBS contains organisms representative of sandy substrate and a rocky reef, and the pier supports only a limited hardbottom biota. The submarine topography consists of a narrow continental shelf with a deep submarine canyon immediately north of the ASBS.

Groundwater Resources

As described in **Section B.6 (pages B-44 to B-46) of the IRWM Plan**, the Basin Plan designates beneficial uses for groundwater within each hydrologic area of the Region's eleven hydrologic units. **Appendix 2 in the IRWM Plan** presents beneficial uses for groundwater designated in the Basin Plan. The Basin Plan designates municipal supply, agricultural supply, and industrial process supply as beneficial uses within a significant majority of the Region's hydrologic areas. Industrial service supply, fresh water replenishment (maintaining surface flows), and groundwater recharge are listed as beneficial uses within several of the Region's hydrologic areas. The Basin Plan does not designate wildlife habitat as a beneficial use of groundwater, but significant areas of riparian habitat and groundwater-dependent vegetation exist within each of the eleven hydrologic units.

Groundwater within the Region occurs in alluvial aquifers, aquifers comprised of semi-consolidated or consolidated sediments, and fractured rock aquifers. Table 7-7 summarizes characteristics of key groundwater aquifers within the Region. Except the Warner Basin, none of the Region's alluvial aquifers exceed a storage capacity of 100,000 acre-feet. Eight alluvial aquifers, however, are estimated to exceed a 50,000 acre-foot capacity. Aquifers comprised of alluvial deposits (alluvium) provide much of the current groundwater production capacity within the region. Yields from the Region's larger aquifers are typically on the order of several thousand acre-feet per year. (Water Authority 1997)

Significant groundwater resources have been found to exist in deeper aquifers comprised of semi-consolidated or consolidated sediments. Recent field investigations indicate that one such deep aquifer, the San Diego Formation, has significant unused water storage and groundwater production potential.

Table 7-7
Summary of the Region's Principal Groundwater Aquifers[1]

HU Name	HU Area	Name of Aquifer	Aquifer Media	Surface Area (sq. miles)	Estimated Storage Capacity (Acre-feet)	Estimated Potential Yield (Acre-feet per year)	Aquifer Depth (Feet)	
							Maximum	Average
San Juan	901.4	San Mateo	Alluvium	5	14,500	2,800	130	80
	901.5	San Onofre	Alluvium	2	6,000	760	100	60
Santa Margarita River	902.00	Lower Santa Margarita	Alluvium	7	69,200	8,500	225	100
San Luis Rey River	903.1	Mission	Alluvium	10	92,000	10,000	220	150
		Bonsall	Alluvium	7	25,000 - 40,000	5,400	130	80
		Moosa Canyon	Alluvium	1	4,000	400	150	100
	903.2	Pala/Pauma	Alluvium	78	50,000 - 75,000	8,000	150	130
	903.3	Warner	Alluvium	37.5	150,000	9,000	350	200
San Dieguito River	905.1	Lower San Dieguito	Alluvium	6	50,000	2,500	150	125
	905.3	San Pasqual	Alluvium	5	58,000	5,800	200	120
	905.4	Santa Maria	Alluvium and Residuum	24	36,000	500	225	40
San Diego River	907.1	Mission Valley	Alluvium	3	40,000	3,500	100	80
		Santee/El Monte	Alluvium	7	70,000	5,600	200	100
Sweetwater	909.1	Lower Sweetwater	Alluvium	3	13,000	1,700	145	80
	909.2	Middle Sweetwater	Alluvium	3	28,900	2,000	80	60
Tijuana River	911.1	Lower Tijuana	Alluvium	6	80,000	1,500	80	60
Pueblo Sweetwater Otay Tijuana River	908.00 909.00 910.00 911.00	San Diego Formation	Consolidated Sediments	200	200,000 - 2,000,000	10,000	1400	800

1. From Water Authority Groundwater Report (1997). Please see footnotes in Table B-17 of the San Diego IRWM Plan (2007).

Groundwater also exists within residuum and fractured crystalline rock that occurs throughout much of the eastern portion of the County. Groundwater yields from fractured rock and residuum can be sufficient to provide water supply for individual homes, but these aquifer types are typically not sufficiently productive to warrant supply development by water supply agencies. (Water Authority 1997)

Imported Water System

As noted in **Section B.9 (pages B-54 to B-55) of the IRWM Plan** and **Section 2 of this RAP Application**, the Water Authority serves as the Region's water wholesale agency. Depending upon local hydrologic conditions, water supplies delivered by the Water Authority to its member agencies comprise approximately 70 to 90 percent of the total water supply within San Diego County (Water Authority 2005). All of the water provided by the Water Authority to its member agencies is imported.(originating outside the Region).

The Water Authority provides imported water from three sources: the Metropolitan Water District of Southern California (Metropolitan), conserved agricultural water from the Imperial Irrigation District (IID), and conserved water from projects that are lining the All-American and Coachella Canals.

1. Metropolitan is Southern California's wholesale water agency, and the Water Authority is the largest customer among Metropolitan's 26 member agencies. Metropolitan derives its water supply from two sources: the Colorado River and the Delta. Metropolitan owns and operates the Colorado River Aqueduct to deliver Colorado River water to Southern California. Metropolitan is also the largest of the State Water Contractors that receive supply from the SWP. SWP water (originating in the Sacramento River) is delivered to Metropolitan via the California Aqueduct.
2. In 1998, the Water Authority entered into a transfer agreement with IID to purchase conserved agricultural water. Through the agreement, the Water Authority received 30,000 acre-feet in 2005; this amount will increase by 10,000 acre-feet per year until reaching 200,000 acre-feet in 2021. The volume then remains fixed for the duration of the 75-year agreement, which may be renewed. Metropolitan conveys the IID transfer water to the Water Authority via an exchange agreement.
3. In 2003, the Water Authority was assigned rights to 77,000 AFY of water to be conserved through the lining of 24 miles of the All-American Canal and 37 miles of the Coachella Canal in Imperial County. Through the agreement, the Water Authority received 26,000 AF in 2007. This amount is expected to increase to the full 77,000 AFY by 2010 and then remain fixed for the duration of the 110-year agreement. Another 16,000 AFY of water conserved by lining the All-American Canal will go the San Luis Rey Indian Water Rights Settlement Parties. Metropolitan conveys the transfer water to the Water Authority via an exchange agreement.

The Water Authority takes delivery of the Metropolitan and IID transfer supplies at a point located six miles south of the San Diego County-Riverside County border. The Water Authority conveys imported water to its member agencies through two aqueducts that consist of five large-diameter pipelines.

The aqueducts follow general north-to-south alignments, and the water is delivered largely by gravity. The First Aqueduct includes Pipelines 1 and 2, which are located in a common right-of-way and are operated as a unit. These pipelines have a combined capacity of 180 cubic feet per second (cfs). Pipelines 3, 4, and 5 are located in a right-of-way known as the Second Aqueduct. Pipelines 3, 4, and 5 have respective capacities of 280 cfs, 425 cfs, and 480 cfs. Key appurtenant facilities to the aqueduct system include flow control facilities, pump stations, control valves, and air release mechanisms. The Water Authority delivers the imported supply to member agencies via 88 turnouts along the aqueduct system.

The five pipelines of the First and Second Aqueducts allow the Water Authority to take delivery of both treated (filtered and disinfected) and untreated (raw) water from Metropolitan. The Water Authority delivers untreated water to member agency surface reservoirs or water treatment facilities. The Water Authority delivers treated water from Metropolitan's Skinner Water Treatment Plant (located at Lake Skinner in Riverside County) and the Water Authority's Twin Oaks Valley Treatment Plant (located north of San Marcos in northern San Diego County) directly to member agency potable water distribution systems.

Water Supplies

As presented in **Section B.9 (pages B-55 to B-57) of the IRWM Plan**, Table 7-8 presents a breakdown of member agency water supplies during Water Year 2004-2005. Approximately eleven percent of the overall regional supply was from local sources (groundwater, local surface water, and recycled water). A total of nine member agencies develop potable supplies from local surface waters, and nine member agencies develop local groundwater supplies. Additionally, a total of 14 of the 24 Water Authority member agencies provide recycled water supply to irrigation customers within their respective service areas.

Table 7-8
Member Agency Water Supply – Water Authority Service Area[1]

Water Authority Member Agency	2005 Water Supply in Acre-feet per Year			Percent of Supply from Local Sources	Source of Member Agency Local Supply		
	Total Agency Supply	Water Authority Imported Supply	Member Agency Local Supply		Recycled Water	Local Surface Water	Ground-water
Carlsbad MWD	21,497	20,155	1,342	6.2%	●		
City of Del Mar	1,377	1,324	54	3.9%	●		
City of Escondido	29,344	25,103	4,240	14.4%	●	●	
Fallbrook PUD	16,230	15,809	421	2.6%	●		
Helix Water District	38,785	32,060	6,726	17.3%		●	●
Lakeside Water District	5,400	3,940	1,460	27%			●
City of National City	6,741	2,366	4,376	64.9%		●	●
City of Oceanside	33,518	31,181	2,337	7.0%			●
Olivenhain MWD	21,834	21,052	782	3.6%	●		
Otay Water District	38,825	37,787	1,038	2.7%	●		
Padre Dam MWD	19,898	19,246	652	3.3%	●		
Camp Pendleton	9,245	834	8,411	91.0%	●		●
City of Poway	14,879	13,975	904	6.1%	●		
Rainbow MWD	25,252	25,252	0	0.0%			
Ramona MWD	11,299	10,359	939	8.3%	●	●	●
Rincon Del Diablo MWD	7,784	7,732	52	0.7%	●		
City of San Diego	226,906	204,039	22,866	10.1%	●	●	●
San Dieguito Water Dist.	7,904	5,605	2,298	29.1%	●	●	
Santa Fe Irrigation Dist.	13,796	9,737	4,059	29.4%	●	●	
South Bay Irrigation Dist.	16,817	8,965	7,852	46.7%		●	●
Vallecitos Water District	18,150	18,150	0	0.0%			
Valley Center MWD	38,459	38,105	355	0.9%	●		
Vista Irrigation District	22,398	21,299	1,170	5.2%		●	●
Yuima MWD	3,907	2,984	923	23.6%			●
Totals	644,845	573,048	71,797	11.1%			

1. 2005 water supply from Water Authority 2005 Annual Report (Water Authority, 2005) for FY 2004-2005. Please see footnotes in Table B-20 of the San Diego IRWM Plan (2007).

Local hydrologic conditions (precipitation, evaporation, and surface flows) influence both the quantity of water demand and the availability of local supplies within the Region. Table 7-9 summarizes the variation in Region's local water supplies from 1999-2005. As shown, imported water supplies provided through the Water Authority have comprised from 84 to 93 percent of the Region's water supply in recent years.

Table 7-9
Imported Water Reliance within the Region, 1999-2005[1]

Fiscal Year	Water Supply in Acre-feet per Year			Percent of Regional Supply from Imported Water
	Total Regional Supply	Water Authority Imported Supply	Member Agency Local Supply	
1999-2000	694,997	580,118	114,877	83.5%
2000-2001	646,387	564,140	82,247	87.3%
2001-2002	686,530	615,572	70,957	89.7%
2002-2003	649,622	586,849	62,773	90.3%
2003-2004	715,763	666,008	49,755	93.0%
2004-2005	644,845	573,048	71,797	88.9%

1. Water supply from Water Authority 2005 Annual Reports for FY 1999-2000 through 2004-2005. Please see footnotes in Table B-21 of the San Diego IRWM Plan (2007).

Regional Water Supply Infrastructure

As described in **Section B.9 (pages B-57 to B-60) in the IRWM Plan**, 25 surface water reservoirs, owned and operated by 15 water supply agencies, are located within the Region (see Table 7-10). As shown in the table, local water supply reservoirs exist within eight of the Region's eleven hydrologic units. A total of 17 reservoirs are currently connected to the Water Authority's aqueduct system.

None of the reservoirs are operated as hydroelectric power generation facilities, but power recovery opportunities exist downstream from several of the reservoirs. Forty megawatt (40 mW) power generation facilities are currently being constructed as part of a pumped storage project that links Olivenhain Reservoir and Lake Hodges. The pumped storage project would produce peak times of electrical usage within the Region.

Table 7-10
Principal Surface Water Reservoirs[1]

HU	Watershed	Reservoir	Operating Agency	Capacity (Acre-Feet)	Aqueduct Connection
903	San Luis Rey River	Red Mountain	Fallbrook Public Utility District	1,335	●
		Beck	Rainbow Municipal Water District	625	●
		Morro Hill	Rainbow Municipal Water District	465	●
		Turner	Valley Center Municipal Water Dist.	1,612	
		Henshaw	Vista Irrigation District	51,744	
904	Carlsbad	Maerkle	Carlsbad Municipal Water District	600	●
		San Dieguito	San Dieguito Water District Santa Fe Irrigation District	883	●
		Olivenhain	Water Authority[5] Olivenhain Municipal Water District	24,364	●
		Dixon	City of Escondido	2,606	●
		Wohlford	City of Escondido	6,506	
905	San Dieguito River	Hodges	City of San Diego	33,550	●
		Sutherland	City of San Diego	29,685	
		Ramona	Ramona Municipal Water District	12,000	●
906	Peñasquitos	Miramar	City of San Diego	7,185	●
		Poway	City of Poway	3,330	●
907	San Diego River	Murray	City of San Diego	4,818	●
		San Vicente	City of San Diego	90,230	●
		El Capitan	City of San Diego	112,807	●
		Cuyamaca	Helix Water District	8,195	
		Lake Jennings	Helix Water District	9,790	●
909	Sweetwater	Loveland	Sweetwater Authority	25,387	
		Sweetwater	Sweetwater Authority	28,079	●
910	Otay	Lower Otay	City of San Diego	49,510	●
911	Tijuana River	Barrett	City of San Diego	37,947	
		Morena	City of San Diego	50,207	

1. From Updated 2005 Urban Water Management Plan (Water Authority 2007). Please see footnotes in Table B-22 of the San Diego IRWM Plan (2007).

Table 7-11 summarizes regional water filtration facilities operated by the Water Authority and its member agencies and identifies associated sources of filtration plant raw water supply.

Table 7-11
Potable Water Filtration Facilities[1]

HU	Watershed	Treatment Facility	Operating Agency	Capacity (million gallons per day)	Aqueduct Connection
903	San Luis Rey River	Weese	City of Oceanside	25	•
		Escondido/Vista	City of Escondido Vista Irrigation District	75	•
904	Carlsbad	Badger	San Dieguito Water District Santa Fe Irrigation District	40	•
		Olivenhain	Olivenhain Municipal Water District	34	•
		Escondido/Vista	City of Escondido Vista Irrigation District	75	•
		Twin Oaks Valley	San Diego County Water Authority	100	•
905	San Dieguito River	Bargar	Ramona Municipal Water District	4	
906	Peñasquitos	Miramar	City of San Diego	225	•
		Berglund	City of Poway	24	•
907	San Diego River	Alvarado	City of San Diego	200	•
		Levy	Helix Water District	106	•
909	Sweetwater	Perdue	Sweetwater Authority	30	•
910	Otay	Lower Otay	City of San Diego	36	•

1. From Updated 2005 Urban Water Management Plan (Water Authority 2007). Please see footnotes in Table B-23 of the San Diego IRWM Plan (2007). This does not include Twin Oaks Valley plant, which went into operation in 2008..

Groundwater resources are developed for municipal supply within the following hydrographic units: San Juan (901), Santa Margarita River (902), San Luis Rey River (903), San Dieguito River (905), San Diego (907), and Sweetwater (908). Demineralization treatment of groundwater is utilized in two of these groundwater basins in order to comply with applicable drinking water standards for TDS. Table 7-12 summarizes groundwater demineralization treatment facilities within the Region.

Table 7-12
Groundwater Demineralization Facilities[1]

HU	Watershed	Groundwater Demineralization Facility	Operating Agency	Treatment Capacity (million gallons per day)	Source of Groundwater
903	San Luis Rey River	Mission Basin	City of Oceanside	6.37	Mission Basin
909	Sweetwater River	Reynolds	Sweetwater Authority	4.0	Lower Sweetwater Basin

1. From Updated 2005 Urban Water Management Plan (Water Authority 2007). Please see footnotes in Table B-24 of the San Diego IRWM Plan (2007).

Emergency Storage Program. Recognizing the Region's dependence on timely delivery of imported water supplies, the Water Authority initiated the ESP in 1998 to provide water to the Region during prolonged imported water interruptions or other emergencies. When completed in 2013, the ESP will consist of storage and conveyance facilities that will allow the Water Authority to maintain a 75 percent service level to member agencies during interruption of imported water deliveries. ESP facilities will be located in the north and east portions of the Water Authority service area, and will be constructed in phases. Table 7-13 summarizes existing and planned ESP facilities.

Table 7-13
Emergency Storage Program Facilities and Schedule

Phase	Facilities	Scheduled Completion
Phase 1	Olivenhain Dam Olivenhain Pipelines and Powerline Olivenhain Pump Station, Surge Control Pipe	Facilities Constructed in 2003
Phase 2	San Vicente Pipeline San Vicente/Moreno-Lakeside Interconnect Pipeline San Vicente Pump Station San Vicente Surge Control Facility	2002-2010
Phase 3	Lake Hodges Pipeline Lake Hodges Pump Station Pipeline 3 Pump Station and Interconnection Pipeline 4 Pump Station	2004-2010
Phase 4	San Vicente Dam Raise San Vicente Recreational Facilities Operations Center Upgrade	2008-2013

Four Reservoir Intertie. The Four Reservoir Intertie project, included in the Proposition 50 implementation grant package, would increase the Region's capability to manage and store imported water in four existing reservoirs, making the Region more resistant to drought and water delivery service interruptions. Connecting the San Vicente, El Capitan, Loveland, and Murray Reservoirs would create an enhanced and integrated reservoir system to more efficiently use the reservoirs and increase accessibility to approximately100,000 acre-feet of surface storage without creating new reservoirs or new storage capacity. The environmental effects of the future conveyance system would be minimal because each reservoir has been in place since the 1940s or earlier, and reservoir footprints would not increase. The Sweetwater Authority is serving as the lead agency for the regional intertie project.

Water Demand and Forecasts

As described in **Section B.10 (pages B-65 to -67) of the IRWM Plan**, demand for water in the Water Authority's service area includes M&I demand and agricultural demand. M&I demand currently comprises 80 to 90 percent of regional water consumption and can be subdivided into residential demand and commercial/industrial demand (Water Authority 2005). Approximately two-thirds of the M&I demand is currently for residential use. Residential water consumption includes both indoor and outdoor uses. Indoor water use includes sanitation, bathing, laundry, cooking, and drinking, while most outdoor use is for landscape irrigation. Outdoor residential M&I demands for single family homes may be at least 60 percent of total residential use (Water Authority 2005). Industrial water consumption consists of a wide range of uses, including product processing, aggregate washing, concrete batching, dust control, cooling, air conditioning, sanitation, and landscape irrigation. Commercial water demand is typically for sanitation, landscape irrigation, and drinking.

In recent years, agriculture has accounted for 10 to 20 percent of the Water Authority's total water demand. All but a small fraction of the agricultural demand is for irrigation. Primary crops within the Region include avocados, citrus, flowers, and nursery products. Agricultural water use within the Water Authority's service area is concentrated mainly in the northern portion of the Region within the FPUD, the City of Escondido, Rainbow, Valley Center, Ramona, and Yuima Municipal Water Districts (Water Authority 2005). The Water Authority is the largest consumer of agricultural water within the Metropolitan service area, accounting for over 65 percent of Metropolitan's agricultural water demands during FY 2004 (Water Authority 2005).

Because a significant portion of the overall regional water demand is for irrigation, weather and hydrologic conditions (precipitation, temperature, evaporation) have a significant effect on water demands within the Water Authority service area. Population, housing, and employment are also key factors in influencing the regional water demand.

Per a 1992 Memorandum of Agreement between SANDAG and the Water Authority, the Water Authority agreed to use SANDAG's most recent regional growth forecasts for planning purposes. Water demands presented in the Water Authority's *Updated 2005 Urban Water Management Plan* were developed using the CWA-MAIN model and the most current SANDAG 2030 population forecast that was available at the time. The CWA-MAIN model was adjusted to incorporate:

- estimated demands for Camp Pendleton that are based on historic trends (and added into the CWA-MAIN model),
- updated conservation forecasts that include implementation of water conservation BMPs developed by the California Urban Water Conservation Council (CUWCC), and
- a separate agricultural demand model that estimates demand on the basis of projected agricultural acreage, and updated crop distribution and irrigation management data.

Using this modeling approach, Table 7-14 presents projected water demands through 2030 under "normal year" hydrologic conditions. Information presented in this table reflects current demand projections presented within the *Updated 2005 Urban Water Management Plan*. Future updates of the Water Authority's water management plans will incorporate SANDAG's most recent growth forecast to ensure that the Region's water supplies met future growth.

Table 7-14
Normal Year Water Demand Forecast – Water Authority Service Area[1]

Demand Parameter	Projected Water Demand (acre-feet per year)				
	2010	2015	2020	2025	2030
M&I Baseline Forecast	699,250	739,020	780,350	830,550	877,740
Estimated Conservation Savings	79,960	87,310	94,170	101,950	108,400
M&I Forecast Reduced by Conservation	619,290	651,710	686,180	728,600	769,340
Agricultural Forecast	89,700	83,130	77,270	58,908	51,630
Total Projected Demand	708,990	734,840	763,450	787,508	820,970
Total Projected Demand with Pending Annexations	715,450	742,900	771,510	795,640	829,030

1 From *Updated 2005 Urban Water Management Plan* (Water Authority 2007). Water demand estimates for the portion of the Region outside the Water Authority service area are not available. Please see footnotes in Table B-28 of the San Diego IRWM Plan (2007).

Water Supply Diversification

As described in **Section B.10 (pages B-67 to B-74) of the IRWM Plan**, the *California Water Plan Update 2005* (DWR 2005) identifies short-term and long-term issues that may impact water supply availability, including (in part): drought, flood, earthquake, facility malfunction, sabotage, global climate change, and environmental restrictions. The *California Water Plan Update 2005* promotes integrated regional water management, which includes fostering regional partnerships and diversifying regional water portfolios.

Recognizing that imported SWP and CRA supplies are subject to legal, environmental, drought, and other uncertainties, the Water Authority's *Updated 2005 Urban Water Management Plan* develops a comprehensive plan to diversify the Region's water portfolio. This diversification plan is based on:

- implementation of additional water conservation measures and implementation of CUWCC BMPs,
- implementation of planned ESP facilities,
- implementation of water transfer agreements with IID for the conservation and transfer of conserved agricultural water from Imperial County,
- implementation of projects for the transfer of water conserved through lining the All-American and Coachella Canals in Imperial County,
- development of seawater desalination capability within the region,

- increasing the amount of recycled water use implemented by member agencies, and
- increasing development of local groundwater and increasing the quantity of poor-quality groundwater recovered through demineralization treatment.

Water conservation is a fundamental component of the Water Authority's water diversification plan. The Water Authority has been aggressively implementing water conservation since 1990. Substantial Water Authority and member agency funding has been directed toward implementing comprehensive water conservation programs (see inset below) to reduce water use for residential, commercial, and agricultural irrigation, and to reduce water use in homes, businesses, industries, and institutions.

California Urban Water Conservation Council
Water Conservation BMPs

As of October 2007, the Water Authority and its member agencies complied with all 14 water conservation BMPs developed by the CUWCC, including:

1. implementing a Residential Water Survey Program,
2. implementing residential plumbing retrofits (distributing water-efficient shower heads),
3. performing water distribution system audits to detect and repair system leaks,
4. metering water use and establishing use-based water rates,
5. implementing large landscape programs and incentives, including landscape incentive programs for commercial use, businesses, and homes,
6. implementing a high-efficiency washing machine voucher program,
7. implementing public information programs including a speakers bureau, newsletters, literature, websites, promoting media coverage, and issuing xeriscape awards,
8. implementing a comprehensive school education program,
9. implementing a commercial, industrial, and institutional voucher program for water-efficient appliances/fixtures and a program for water efficiency of industrial processes,
10. implementing wholesale agency assistance programs,
11. offering water pricing structures to encourage conservation,
12. staffing water conservation coordinator positions,
13. implementing prohibitions against water waste, and
14. implementing a residential ultra-low flush toilet voucher program.

The comprehensive water conservation program implemented by the Water Authority and its member agencies resulted in more than 50,000 acre-feet of water savings during 2005 (Water Authority 2005). Water savings are projected by the Water Authority and its member agencies to annually exceed 100,000 acre-feet by year 2025.

During 2006 and 2007, the Water Authority and member agencies began a transition in the approach to water conservation. Future conservation programs will de-emphasize ultra low flush toilets and other plumbing fixtures and increase the emphasis on landscape and commercial/industrial conservation. The Water Authority and member agencies sponsored region-wide conservation symposiums in 2006 and 2007 that brought in business and industry, land use planning agencies, environmental groups and other stakeholders to participate in a regional approach to landscape conservation. Post-event White Papers wereused as a basis for a strategic plan for conservation. Ongoing stakeholder participation is being implemented through a Conservation Action Committee. The Water Authority is also implementing conservation partnerships with its member agencies, the Water Conservation Garden, Metropolitan, and San Diego Gas and Electric.

Water transfers represent another key element of the Water Authority's water source diversity program. As described above, the Water Authority has an agreement with IID for the conservation and transfer of agricultural water. Additionally, the Water Authority has been assigned rights to 77,000 acre-feet per year of water that will be conserved through projects that would line 24 miles of the All-American Canal and 37 miles of the Coachella Canal in Imperial County. The Water Authority also is seeking spot transfers to reduce the impact of current water shortages.

Groundwater represents an additional key component of local supply within the Region. Water Authority member agencies develop groundwater supply through management and recovery of good-quality alluvial groundwater. Member agencies also recover poor quality groundwater through demineralization treatment. Groundwater represents the exclusive source of supply outside the Water Authority service area in the rural portion of the Region. Groundwater use and demand data for private wells and small community water systems in this rural area are unavailable; the lack of such data represents a significant water management challenge within these rural portions of the Region.

Seawater desalination is another element of the Water Authority's supply diversity program. As described above, work is under way on a seawater desalination facility at the Encina Power Station in Carlsbad that will be constructed as a public-private partnership between the City of Carlsbad and Poseidon Resources, Inc. At full production, the facility will produce 50 mgd of potable water from seawater.

Taking into account projected water conservation savings, Table 7-15 presents a breakdown of projected water supplies and compares projected supplies with the demand forecast for a normal hydrologic year. As shown in the table, imported supplies from Metropolitan are projected to comprise less than 45 percent of the total regional water demand by year 2030.

Table 7-15
Water Authority Water Supply Portfolio – Normal Water Year[1]

Demand Parameter	Projected Water Supply (acre-feet per year)				
	2010	2015	2020	2025	2030
Water Authority Supplies					
IID Water transfer	70,000	100,000	190,000	200,000	200,000
Canal Lining projects	77,700	77,700	77,700	77,700	77,700
Water Authority Member Agency Supplies					
Local surface water	59,650	59,650	59,650	59,650	59,650
Water recycling	33,670	40,660	45,550	46,490	47,580
Seawater desalination	0	34,700	36,060	37,750	40,000
Groundwater	17,180	18,950	19,780	19,780	19,780
Groundwater recovery	11,400	11,400	11,400	11,400	11,400
Metropolitan Supplies	445,860	399,860	331,370	342,870	372,920
Total Supplies	715,450	742,900	771,510	795,640	829,030
Total Projected Demand with Conservation	715,450	742,900	771,510	795,640	829,030

1 Verifiable expected water supplies for the Water Authority service area, as presented in *Updated 2005 Urban Water Management Plan* (Water Authority 2007). Water budget data for the rural portion of the Region outside the Water Authority service area not available. Please see footnotes in Table B-30 of the San Diego IRWM Plan (2007).

Water Supply Outside Water Authority Service Area

As discussed in **Section B (pages B-64 to B-65) of the IRWM Plan**, all but a small fraction of the Region's 3 million population lives within the Water Authority's service area. Rural residences and small communities that exist outside the Water Authority service area rely exclusively on individual groundwater wells or community water wells operated by small community water systems or private water companies (refer to **Section 2.2 of this RAP Application**).

While the Region's groundwater-dependent population is proportionately small (compared to the population served by the Water Authority), the population is spread over a significant geographic portion of the Region. The availability of groundwater in the portion of the Region that lies east of the Water Authority's service area is limited by (1) available precipitation recharge, (2) recharge infiltration limitations, (3) low aquifer yields, and (4) limited groundwater storage. The majority of this area is underlain by fractured rock aquifers. Such aquifers typically have well yields no more than several gallons per minute. Shallow alluvial valleys exist along several of the river and stream valleys in portions of the eastern section of the Region. Groundwater production from these shallow

aquifers, however, is constrained by the limited aquifer storage. Overall, the above groundwater-limiting factors severely limit the potential of additional growth and development in this area of the County.

While some community well systems outside the Water Service's area keep records of overall water production, very few wells are required to be metered for production. As a result, it is difficult to estimate the overall quantity of water supplies used. The low-density residential population in this area uses a small fraction of water when compared to of the overall Water Authority supply. However, non-residential water use within this area (e.g. agriculture, golf courses, campgrounds, resorts, retreat centers, public parks, casinos, hotels, and industrial uses) can represent a sizable demand on available groundwater resources.

Wastewater and Recycled Water

Water recycling (developing a usable water supply from wastewater) is an important component of the Region's local water resources. During 2005, Water Authority member agencies reported the use of approximately 11,480 acre-feet of recycled water, which included approximately 9,240 acre-feet of tertiary treated recycled water and 2,240 acre-feet of secondary treated effluent. The use of tertiary treated recycled water within the region is projected to increase to approximately 45,550 acre-feet per year by 2020. (Water Authority 2007)

Figure 6-9 (previous) presents the location of water recycling facilities within the Region that produce tertiary treated (filtered and disinfected) recycled water. Such tertiary treated recycled water is suitable for all landscape and agricultural irrigation uses. Table 7-16 summarizes the Region's 17 tertiary treatment water recycling facilities.

Recycled water is primarily used to irrigate parks, campgrounds, golf courses, freeway medians, community greenbelts, school athletic fields, food crops, and nursery stock. Recycled water is also used to augment supplies in recreational or ornamental lakes or ponds, to control dust at construction sites, to recharge groundwater basins, and for such industrial purposes as power plant cooling water. Currently, most of the recycled water supply is used for agriculture, landscape irrigation, and other municipal and industrial uses. Recycled water is also used to recharge groundwater basins.

Table 7-16
Recycled Water Tertiary Treatment Facilities[1]

HU	Name	Recycled Water Agency	Recycled Water Facility	Permitted Tertiary Treatment Capacity (mgd)	Reported Year 2005 Recycled Water Use (acre-feet per year)
902	Santa Margarita R.	Camp Pendleton	Southern Regional	5.0	0
903	San Luis Rey River	City of Oceanside	San Luis Rey	0.7	110
		Fallbrook Public Utility District	Plant No. 1	2.7	315
		Valley Center Municipal Water Dist.	Woods Valley Ranch	1.47	0
		Valley Center Municipal Water Dist	Lower Moosa Canyon	1.0	N/A
		Valley Center Municipal Water Dist	Valley Center	0.2	N/A
904	Carlsbad	Vista Irrigation District	Shadowridge	1.16	0
		Carlsbad Municipal Water District	Carlsbad	4.0	0
		Leucadia Wastewater District	Gafner	1.0	250
		Vallecitos Water District	Meadowlark	2.25	1,100
		City of Escondido	Hale Avenue	9.0	110
		San Elijo Joint Powers Authority	San Elijo	2.48	1,050
905	San Dieguito River	Olivenhain Municipal Water District	4-S Ranch	2.0	440
		Olivenhain Municipal Water District	Santa Valley	0.5	N/A
		Ramona Municipal Water District	Santa Maria	0.35	180
		Fairbanks Ranch CSD	Fairbanks Ranch	0.30	N/A
		City of San Diego	San Pasqual	1.0	N/A
		Whispering Palms CSD	Whispering Palms	0.4	N/A
906	Peñasquitos	City of San Diego	North City	30.0	3,320
907	San Diego River	Padre Dam Municipal Water District	Santee Basin	2.0	650
		Ramona Municipal Water District	San Vicente	0.6	680
910	Otay River	Otay Water District	R.W. Chapman	1.3	1,040
911	Tijuana River	City of San Diego	South Bay	15.0	0

1. Compiled from adopted recycled water discharge permits adopted by the Regional Board and Water Authority website (http://www.sdcwa.org/manage/recycled-facilities.phtml). See footnotes in Table B-26 of the San Diego IRWM Plan (2007).

Since most recycled water demands are for irrigation, recycled water demands vary significantly during the year. A key and necessary component of water recycling is providing means of disposal or storage of excess recycled water supplies during periods of limited demand. Local agencies may utilize either storage ponds or regional ocean outfall facilities to handle excess recycled water or wastewater flows during periods of inclement weather or limited demand. (An exception to this is Padre Dam MWD, which has an NPDES permit to discharge recycled water to the Santee Lakes, which can overflow to the San Diego River.) Table 7-17 summarizes the deep-water ocean outfalls located within the Region.

Table 7-17
Municipal Wastewater Ocean Outfalls[1]

HU	Name	Outfall	Operating Agency	Discharge Distance Offshore (ft)	Permitted Discharge Flow (mgd)	Agencies Served
903	San Luis Rey River	Oceanside	City of Oceanside	8,050	22.9	City of Oceanside
					3.6	U.S. Marine Corps Base Camp Pendleton
					2.4	Fallbrook Public Utility District
904	Carlsbad	Encina	Encina Wastewater Authority	7,800	43.3	Encina Wastewater Authority
		San Elijo	San Elijo Joint Powers Authority	8,000	18.0	City of Escondido
					5.3	San Elijo JPA
908	Pueblo	Point Loma	City of San Diego	23,470	240	San Diego Metropolitan Sewerage System
911	Tijuana River	South Bay	City of San Diego	23,600	15	San Diego Metropolitan Sewerage System

1. Compiled from adopted recycled water discharge permits adopted by the Regional Board. See footnotes in Table B-27 of the San Diego IRWM Plan (2007).

In addition to providing means for wastewater and recycled water disposal, the outfalls can also be used as a salinity management asset. Three of the regional municipal wastewater outfalls are currently being used for disposal of saline or brackish water, including:

- Oceanside Ocean Outfall, used for disposal of demineralization brine from the City's groundwater desalter and demineralization brine from a local industry,
- San Elijo Ocean Outfall, used for disposal of brackish cooling tower blowdown from the Palomar Energy Plant in Escondido, and
- Point Loma Ocean Outfall, used for disposal of demineralization brine from the City's North City Water Recycling Plant.

Capital Improvement Programs

As described in **Section K (pages K-5 to K-10) of the IRWM Plan**, the primary means of financing IRWM capital projects will be through government agency Capital Improvement Program (CIP) budgets. State of California grant funds are also an important potential source of funding for capital projects. Following is a summary of capital improvement plans for the RWMG's regional facilities.

The Water Authority initiated the CIP in 1989 to plan and implement projects to meet the region's future water needs. The CIP improves water reliability by diversifying the region's water supply portfolio, while also enhancing the aqueduct system that delivers water to Water Authority member agencies. The Water Authority's *Regional Water Facilities Master Plan* (2002) is a long-term plan to meet member agency demands through 2030. In 2004, the Water Authority Board approved the addition of the *Regional Water Facilities Master Plan* projects to the agency's CIP. Current projects include the following:

- Rehabilitation of existing pipelines;
- Construction of the ESP, including San Vicente dam raise and construction or strengthening of pipelines, treatment plants and other infrastructure to facilitate delivery of water during emergencies;
- Upgrading the water pipelines running beneath western portions of Mission Trails Regional Park;
- Expanding capacity at the Otay 14 Flow Control Facility;
- Relining pre-stressed concrete cylinder pipes (PCCP) pipelines with steel liners; and

- Creation of the Tijuana River Valley Wetlands Mitigation Project, which will establish approximately 40 acres of native wetlands and transitional uplands within the Tijuana River Valley to offset impacts created by the ESP.

The City's *Strategic Plan for Water Supply* was developed to outline the capital improvement projects necessary to continue serving its residents. Key capital improvement projects currently underway by the City of San Diego include the following:

- Replacement of aging water and wastewater pipelines;
- Upgrade and expansion of the City's Alvarado Water Treatment Plant (1998-2013);
- Upgrade and expansion of the City's Miramar Water Treatment Plant (2001-2010); and
- Upgrade of the Otay Water Treatment Plant (2003-2009)

The County maintains a 5-year CIP for flood control projects and wastewater facilities owned and operated by the County. The County's *Five Year Capital Improvement Plan FY 2008/09-FY 2012/13* identifies 19 drainage improvements and 19 wastewater system improvements within unincorporated areas.

7-5 References

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8 Coordination with Adjacent Regions

This section provides an overview of the Region's commitment to inter-regional collaboration within the San Diego Funding Area via the Tri-County FACC.

8-1 Coordination within San Diego Funding Area

This section addresses the following Reviewer questions:

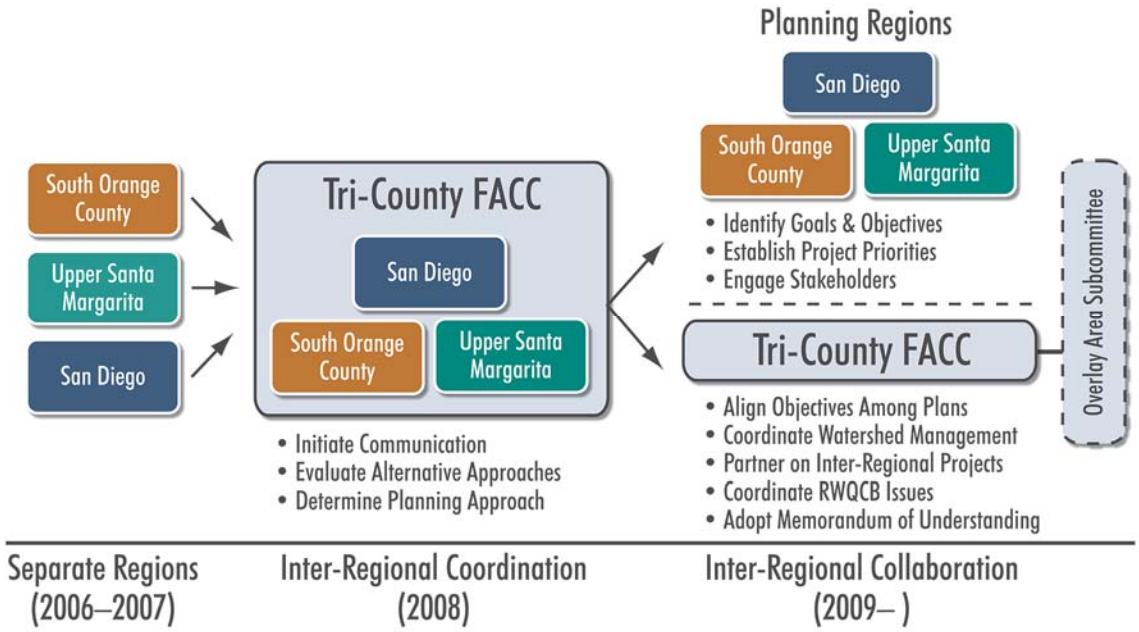
- *It is important to note that not only do the region boundaries need to make sense from hydrological, water system, and water issue perspectives; but we also need to consider a broader view of how all the IRWM boundaries fit together to achieve benefits statewide.*
- *Consider the shape of the IRWM; and how it relates to other regions nearby.*

During the Proposition 50 grant cycles, three IRWM regions emerged within the San Diego Funding Area – the San Diego, Upper Santa Margarita, and South Orange County IRWM regions. As described in **Section 2 of this RAP Application**, the San Diego IRWM program is managed by the Water Authority, City of San Diego, and County of San Diego; the Upper Santa Margarita IRWM program is managed by RCFCWC, County of Riverside, and RCWD; and the South Orange IRWM program is managed by the County of Orange, MWDOC, and SOCWA.

Evolution of Inter-Regional Planning

The three separate IRWM planning regions – San Diego, Upper Santa Margarita, and South Orange County – were established and formalized in 2006 and 2007 during development of their IRWM Plan documents. Since that time, the three regions have developed and formalized a working relationship for joint IRWM planning in shared watershed areas (see Figure 8-1).

Figure 8-1: Evolution of Regional Planning in the San Diego Funding Area



In early 2008, the three regions submitted a letter to DWR expressing their interest in serving as a 'test case' for the RAP process. Throughout that year, the three RWMGs undertook a coordinated evaluation of the planning region boundaries and potential alternatives for reformulation. By late 2008, the three RWMGs had determined that major differences between the three regions indicated that water management planning is better and more efficiently conducted at the local scale. However, formalizing the Tri-County FACC would allow the RWMGs to better coordinate on water management issues, objectives, and projects within watershed areas that cross regional boundaries. Moving forward, the Tri-County FACC will enable a high level of coordination for water resources management issues that are common to the three regions.

Committed Inter-Regional Process

Figure 2-2 (**Section 2 of this RAP Application**) illustrates the boundaries of the three IRWM planning regions and the Tri-County FACC. The Tri-County FACC will build a foundation that ensures sustainable water resources planning within the Funding Area by serving as an umbrella organization, allowing the three IRWM regions to coordinate water resources planning activities and pool resources. Because man-made water infrastructure systems are the key water management units in the Funding Area, the planning regions reflect this reality and cross-boundary watershed issues are addressed via a collaborative subcommittee process.

The three RWMGs will undertake coordinated planning within the Watershed Overlay Areas, which comprise the Santa Margarita River and San Mateo Canyon watershed areas (refer to Figure 2-2). A Watershed Overlay Subcommittee will be organized to consider issues and develop projects pertaining to the Overlay Areas. Water resources projects and programs that may benefit from Funding Area-wide coordination, administration, funding, or support will be identified by the Tri-County FACC and/or Subcommittee. Projects within the Watershed Overlay Areas identified as valuable and benefiting from cross-boundary coordination will be recommended in the three IRWM project selection processes.

All three IRWM Plans – San Diego, Upper Santa Margarita, and South Orange County – will contain references to the entire Funding Area, to the coordination that is occurring among planning regions, and to the MOU governing the Tri-County FACC. Each IRWM Plan will identify common goals and objectives, water management strategies, issues, and challenges being addressed via inter-regional collaboration.

To facilitate DWR's review process, all three planning regions will coordinate their RAP submittals and IRWM grant applications. Further, the three RWMGs will coordinate on grant funding requests to ensure that the sum of the total grant requests does not exceed the amount identified for the San Diego Funding Area.

IRWM planning under the proposed region boundaries allows for agency, regulatory, non-profit, and public participation at the local scale. For example, public workshops are hosted in different locations throughout the San Diego Region to enable more convenient access by participants and DAC representatives. The creation of larger planning regions would limit local involvement and reduce the value of the IRWM planning process to the regions, the Funding Area, and the State.

Memorandum of Understanding

In March and April 2009, the nine RWMG agencies that comprise the Tri-County FACC jointly adopted an *MOU for Integrated Regional Water Management Planning and Funding in the San Diego Funding Area* to outline their commitment to inter-regional coordination (see Attachment F). The efforts of the Tri-County FACC are intended to enhance the quality of water resources planning, identify opportunities for supporting common goals and projects, and to improve the quality and reliability of water in the Funding Area. **Section 5 of this RAP Application** contains an overview of the agreements set forth in the Tri-County FACC MOU.

8-2 Water Management Differences

This section addresses the following Reviewer questions:

- *Are there distinct water management differences between adjacent or overlapping IRWM regions and the proposed IRWM region to support being separate IRWM regions?*

In early 2008, DWR suggested that the three adjacent planning regions in the San Diego Funding Area might reconsider their regional boundaries. The three RWMGs began meeting in February 2008 to discuss ways to collaborate on IRWM planning. At DWR's suggestion, the group developed a matrix of five planning region

alternatives and evaluated 15 factors to determine the most appropriate and productive approach (see Attachment D). The San Diego Region presented this alternatives matrix to the RAC for discussion, and incorporated RAC suggestions into the Tri-County FACC final draft.

Through the course of this evaluation, the three RWMGs determined that the multiple regional differentiators that spurred development of three separate IRWM Plans held true. Clear division within the following water management factors warrants three separate planning regions.

Water Supply. Each of the three IRWM regions contains independent water supply agencies drawing from different water sources. The South Orange region is comprised of Municipal Water District of Orange County (MWDOC) and member agencies; the Upper Santa Margarita region is comprised of Rancho California Water District, Elsinore Valley MWD, Eastern MWD, and Western MWD; and the San Diego Region is comprised of the Water Authority and its 24 member agencies, as well as numerous small water systems in rural areas. One water supply agency, South Coast Water District in the South Orange region, serves a small portion of northern Camp Pendleton. Agencies in both Upper Santa Margarita and San Diego receive imported water from Metropolitan's Skinner Treatment Plant, a treatment facility of Statewide importance. With one minor exception, water supply agency service areas do not overlap across the IRWM regions.

Additionally, each of the three IRWM regions depend to a varying degree on imported water supply and receives deliveries are from a different combination of sources. Because of this, the quality of water supply and necessary treatment differs across the Regions. The Upper Santa Margarita and South Orange planning regions rely more heavily on local supplies (including groundwater), while the San Diego Region depends primarily on imported water. Although supply diversification planning is underway in all three regions, development of local supplies is, by definition, conducted at the local scale.

Wastewater/Recycled Water. Each of the three IRWM regions contains separate wastewater agencies, reclamation plant operators, and water recycling programs. South Orange County's wastewater is managed by the South Orange County Wastewater Authority (SOCWA), while Riverside and San Diego each contain multiple water and wastewater agencies. None of these wastewater agencies or their recycled water infrastructure overlaps across the IRWM regions.

Wastewater disposal practices also vary between the regions, with Upper Santa Margarita exporting treated wastewater to the Santa Ana River watershed and Orange and San Diego discharging through its deep ocean outfalls. Riverside County (unlike Orange and San Diego counties) has no connection to regional ocean outfall disposal systems. Ongoing conflicts related to discharge of recycled water to the Santa Margarita River have not yet been resolved. Collaboration through the Tri-County FACC provides the adjacent regions with an opportunity to find common ground and develop solutions to these water management conflicts.

Groundwater. Each of the three IRWM regions maintains a different level of dependence on groundwater supply. In contrast with San Diego's limited groundwater production (2%), a larger proportion of South Riverside and Orange county supplies are obtained from groundwater. Groundwater accounts for 19% of overall supplies in the South Orange region. A bedrock constriction preventing the subsurface movement of groundwater between the upper and lower Santa Margarita River basins limits extraction within the northern San Diego Region. Groundwater extraction and recharge facilities are localized within each region. No groundwater basins are shared across the IRWM regions.

Land Use Planning. Each of the three IRWM regions contains different local and regional land use planning authorities and transportation programs, as well as different development trends. The South Orange region is comprised of Orange County and 12 cities, and regional coordination occurs through Southern California Association of Governments (SCAG)/Orange County Council of Governments (OCCOG); the Upper Santa Margarita region is comprised of Riverside County, four cities, and SCAG/Western Riverside Council of Governments (WRCOG); and the San Diego Region is comprised of San Diego County, 18 cities, and SANDAG. None of these land use authorities overlap across the IRWM regions.

Flood Protection. Each of the three IRWM regions contains independent flood control agencies and programs. The South Orange region contains Orange County Flood Control District (OCFCD); the Upper Santa Margarita region contains Riverside County Flood Control and Water Conservation District (RCFCWCD); and the San Diego Region contains San Diego County Flood Control District and 18 municipalities. None of these flood control agencies overlap across the IRWM regions.

Runoff Water Quality. Each of the three IRWM regions has obtained and complies with separate NPDES MS4 permits, urban runoff management planning, and regional pollution prevention programs. The County of San Diego is the Principal Copermittee for the San Diego MS4 permit (Order R9-2007-0001); RCFCWCD for the Riverside County MS4 permit (Order R9-2004-001); and County of Orange for the Orange County MS4 permit (Order R9-2008-0001). Stormwater compliance measures, monitoring programs, and BMPs used in Orange and Riverside counties vary from those used by San Diego County. None of these permits nor their associated stormwater programs overlap across the IRWM regions.

Environmental Resources. Each of the three IRWM regions contains different habitat conservation planning efforts and nature reserves. The County of San Diego led development of the San Diego County MSCP (with the City preparing an MSCP for lands within their jurisdiction), while the County of Riverside led development of the Western Riverside Multi-Species Habitat Conservation Plan (MSHCP). South Orange County does not contain an MSCP effort. None of these habitat conservation planning efforts overlap across the IRWM regions.

Political Realities. Each of the three IRWM regions contains separate legal (both regulatory and legislative), taxing, and funding authorities. For example, the Orange County Transportation Authority administers Measure M (a half-cent local transportation sales tax) which includes a water quality program for transportation-related pollution; this contributes to IRWM Plan implementation in Orange County. Each of the three IRWM regions has identified an appropriate means of administering and funding integrated regional planning within their proposed regional boundary. None of these political boundaries overlap across the IRWM regions.

The water management, land use planning, and natural resources authorities in the upper portions of the Santa Margarita and San Mateo watersheds are different from those in the lower portions. Because of these differentiators, the watershed areas have been divided into adjacent IRWM planning regions.

Following the RWMG's determination that the existing IRWM regions are appropriate planning-level entities, the Tri-County FACC was established in as a means of coordinating planning within the Funding Area. This approach allows the three RWMGs to balance the necessary autonomy of each planning region to plan at an appropriate scale with the need to improve inter-regional cooperation and efficiency. To address DWR's concerns, the three planning regions are committed to identifying cross-boundary projects and common programs that address key challenges. This approach will capture the integration of water supply, wastewater, and watershed planning across regions in three coordinated IRWMs.

Santa Margarita River Watershed Differentiators

Table 8-1 provides further detail on the major differentiators and conflicts between the upper and lower portions of the Santa Margarita River watershed. Water rights conflicts date back to a 1940 Stipulated Judgment and a 1966 Modified Final Judgment and Decree and associated groundwater adjudication. A 1990 Four Party Agreement between RCSD, FPUD, Eastern MWD, and Camp Pendleton addresses discharge of recycled water to the Santa Margarita River for groundwater recharge. However, reclaimed water from the SRWRF contains nutrient concentrations that exceed the receiving water quality objectives applicable to Murrieta Creek/Santa Margarita River. These conflicts, however, are reaching resolution through newfound collaboration. NEED LANGUAGE FROM PERRY.

These stark differences were a key factor in the Tri-County FACC's decision to collaborate via inter-regional MOU versus joining together. The regional solution developed by all three parties strikes an appropriate balance of coordination and independence. The Tri-County FACC provides the three regions with the benefits of inter-regional planning without requiring renegotiation of the existing successful governance structures, which have been approved by the RWMG governing bodies in all three regions. Rather, the Tri-County FACC will enable the three planning regions to identify and collaborate on potential solutions to the conflicts recognized within the watershed.

Table 8-1
Differentiators between Lower and Upper Santa Margarita River Watersheds

	Upper Santa Margarita River	Lower Santa Margarita River
Separate RWMG Agencies	County of Riverside, RCFCWCD, and RCWD	County of San Diego, Water Authority, and City of San Diego
Separate Water Supply Agencies	RCWD, Eastern MWD, Elsinore Valley MWD, Western MWD	Water Authority, FPUD, Rainbow MWD, Camp Pendleton
Different Imported Water Supply	Metropolitan (SWP and CRA)	Metropolitan (SWP and CRA) and Water Authority Conserved agricultural water from IID Conserved water from the All-American and Coachella Canal Lining Projects
Separate Recycled Water Facilities	SRWRF (RCWD), Temecula Valley Regional Water Reclamation Facility (Eastern MWD), March Wastewater Reclamation Facility (Western MWD), Railroad Canyon Water Reclamation Facility (Elsinore Valley MWD), Horsethief Canyon Water Reclamation Facility (Elsinore Valley MWD)	Southern Regional Recycled Water Facility (Camp Pendleton)
Separate Groundwater Basins	Temecula Valley (9-05) – Pauba Valley, Lower Mesa, Upper Mesa, North Murrieta, South Murrieta, San Gertrudis, Wolf Valley, and Palomar subbasins	Santa Margarita Valley (9-04) – Lower Ysidora, Chappo, and Upper Ysidora subbasins
Separate Land Use Authorities	County of Riverside, City of Temecula, City of Murrieta, San Bernardino National Forest, Cleveland National Forest, Bureau of Land Management	County of San Diego (incl. Fallbrook and Rainbow communities), Camp Pendleton, Cleveland National Forest
Separate Regional Planning Entities	SCAG/WRCOG	SANDAG
Separate Flood Control Agencies	RCFCWCD and 4 municipalities	San Diego County Flood Control District and 18 municipalities
Separate NPDES Permits	Riverside County NPDES/ Municipal Storm Water program (Order R9-2004-001)	San Diego County NPDES/ Municipal Storm Water program (Order R9-2007-0001)
Separate Wastewater Agencies	RCWD, Eastern MWD, Elsinore Valley MWD, Western MWD	FPUD, Rainbow Municipal Water District, Camp Pendleton
Wastewater Disposal	Wastewater is locally recycled and/or exported to the Santa Ana River basin	Wastewater is locally recycled and/or exported to a regional ocean outfall disposal system
Separate Habitat Conservation Plans	Western Riverside County MSCP	San Diego County MSCP – North County and East County Subareas

8-3 Coordination with Colorado River Funding Area

During the Proposition 50 grant cycles, three IRWM regions emerged within the Colorado River Funding Area – the Mojave Water Agency, Salton Sea, and Calexico New River IRWM regions. Additionally, a new group is in the process of forming for IRWM planning under Proposition 84 in Anza Borrego. The Mojave Water Agency region is not located adjacent to the San Diego Region, and is therefore not addressed further. The Calexico New River region did not meet minimum IRWM Plan Standards in 2005; further activity from this region is unknown.

During the Proposition 50 grant process, the Salton Sea Authority submitted the Salton Sea Restoration, Final Preferred Project Report (2004) as a "functionally equivalent document" for an IRWM Plan. The IRWM region was described as the Salton Sea Basin, in Riverside and Imperial counties. However, the region is not actively engaging in IRWM planning and no coordination has yet occurred.

In October 2008, the Borrego Water District issued draft No. 4 of an *Integrated Water Resources Management Plan*, which was also intended to serve as the initial step in the IRWM planning process. Borrego Water District's service area includes the northeastern portion of San Diego County, but is not part of any of the 11 hydrologic units in the San Diego Planning Region. The isolated region's sole source of water is the Borrego Valley Aquifer, which is the focus of its current planning effort. However, the current effort does not meet the *IRWM Grant Program Guidelines* definition of a 'region' nor minimum IRWM Plan Standards and no coordination has yet occurred.

8-4 Overlapping and Void Areas

This section addresses the following Reviewer questions:

- *Determine if the RWMG has successfully managed overlaps or gaps within and outside of the region boundary. If there are overlapping IRWM regions, is there a clearly defined relationship between the IRWM planning regions?*
- *Are there indications the overlapping regions have discussed their water management issues and coordinated on activities occurring in overlapping areas?*
- *Is there sound reasoning for having more than one RWMG planning water management issues for the same area?*
- *Does the submittal describe any areas within the region that are excluded or create a void area, and if so, explain why this is reasonable and appropriate?*
- *Has the boundary been drawn so that the region leaves uncovered or void areas within the region or immediately outside the boundary?*
- *Will the region boundary create a planning gap in the region?*
- *Are there overlaps, gaps, or holes in the region coverage that do not seem to make sense?*

The San Diego Region does not overlap with any other proposed IRWM region.

In establishing the Tri-County FACC, the three RWMGs identified one small void area between the three planning regions utilized for the Proposition 50 grant funding cycle. The Upper Santa Margarita IRWM region has incorporated that small area (a portion of the upper San Mateo Canyon watershed) into its region boundary in order to ensure that all land area within the San Diego Funding Area is addressed in an IRWM planning effort. Additionally, the Tri-County FACC Overlay Subcommittee will be working collaboratively to define water management projects and programs that address common goals and objectives within the three IRWM Plans.

9 RAP Interview Team

This section lists the entities and representatives that will participate in the RAP interview.

9-1 RAP Interview Team

This section addresses the following Reviewer questions:

- *DWR will use this list when determining who to invite to the interview.*
- *Do the interview attendees selected by the RWMG represent a cross section of the region's water management interests and geographic area?*
- *Are the number of interview attendees and spokespersons conducive to a thorough and effective discussion of the region and its definition?*

The San Diego RWMG anticipates inviting the following six representatives to participate in the RAP interview. However, these representatives may change based on interview scheduling.

1. Mark Stadler, San Diego County Water Authority, MStadler@sdcwa.org, (858) 522-6735. *Mark Stadler will serve at the primary spokesperson for the San Diego Region.*
2. Toby Roy, San Diego County Water Authority, TRoy@sdcwa.org, (858) 522-6743.
3. Cathy Pieroni, City of San Diego, CPieroni@sandiego.gov, (619) 533-6612 or
   Jeff Pasek, City of San Diego, jpasek@sandiego.gov, (619) 533-7599.
4. Sheri McPherson, County of San Diego, Sheri.McPherson@sdcounty.ca.gov, (858) 495-5285 or
   Jon Van Rhyn, County of San Diego, jon.vanrhyn@sdcounty.ca.gov, (858) 495-5133.
5. Keith Lewinger, Fallbrook Public Utilities District, klewinger@fpud.com, (760) 728-1125.
6. Rosalyn Stewart, RMC Water & Environment, rstewart@rmcwater.com, (858) 875-7400.

As described in **Section 2 of this RAP Application**, the Water Authority, the City, and the County are members of the RWMG implementing the San Diego IRWM program. The combined jurisdiction of the three agencies comprises the entire Region, and their combined responsibilities address all facets of water management.