

# SAN DIEGO REGION INTEGRATED WATER MANAGEMENT DRAFT PLAN

## SAN DIEGO REGIONAL WATER MANAGEMENT GROUP

**San Diego County Water Authority**

**County of San Diego**

**City of San Diego**

**With support and cooperation from**  
Mission Resource Conservation District

San Diego River Park Foundation

University of California at San Diego

San Diego State University

**Prepared by**

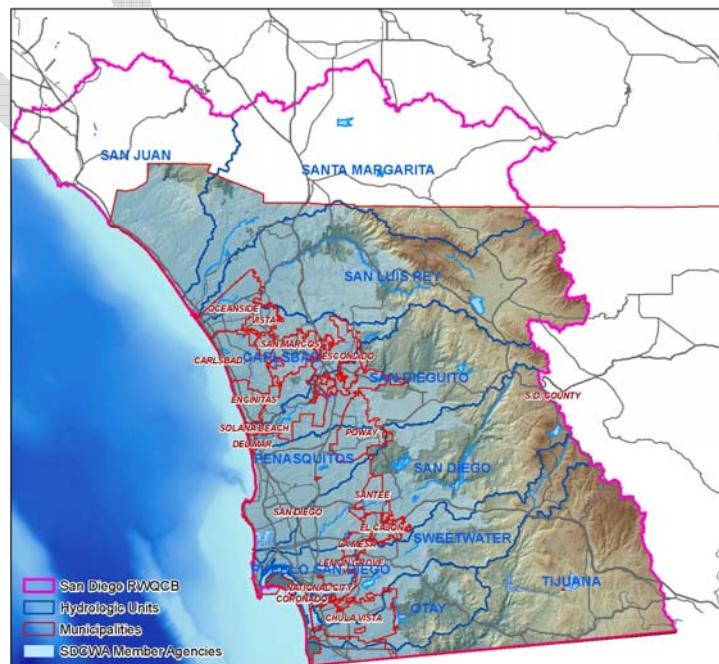
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Appendix A San Diego Region



## List of Acronyms and Abbreviations

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AF	acre-feet
APCD	San Diego County Air Pollution Control District
ARB	State Air Resources Board
ASBS	Areas of Special Biological Significance
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
cfs	cubic feet per second
the City	City of San Diego
CMP	Congestion Management Program
the County	County of San Diego
CWA	Clean Water Act
CWC	California Water Code
CWD	Carlsbad Watershed Network
DEH	County of San Diego Department of Environmental Health
DWSAP	Drinking Water Source Assessment and Protection
FEP	functionally equivalent plan
FY	Fiscal Year
HCP	Habitat Conservation Plan
IID	Imperial Irrigation District
IRWMP	Integrated Regional Water Management Plan
IWR-MAIN	Institute for Water Resources - Municipal And Industrial Needs
M&I	municipal and industrial
MF	multi-family residential
MHI	Median Household Income
MOA	memorandum of agreement
MOU	memorandum of understanding
MS4	Municipal Separate Storm Sewer Systems
MSCP	San Diego County Multiple Species Conservation Program
MWD	Metropolitan Water District of Southern California
NCCP	Natural Communities Conservation Planning
NGO	Non-Governmental Organizations
RAQS	San Diego Regional Air Quality Strategy
RWMG	Regional Water Management Group



## List of Acronyms and Abbreviations

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SAMP	Special Area Management Plan
SANDAG	San Diego Association of Governments
SCWRP	Southern California Wetlands Recovery Project
SDIRWM	San Diego Integrated Regional Water Management
SDRWMG	San Diego Regional Water Management Group
SDWA	Safe Drinking Water Act
SF	single-family residential
SIP	State Implementation Plan
SUMPs	Standard Urban Stormwater Mitigation Plans
SWAs	source water assessments
TAC	Technical Advisory Committee
TDS	total dissolved solids
TMDL	Total Maximum Daily Loads
TOC	total organic carbon
TRC	Technical Review Committee
USEPA	U.S. Environmental Protection Agency
the Water Authority	San Diego County Water Authority
WPTAC	Watershed Protection Technical Advisory Committee
WURMP	Watershed Urban Runoff Management Plan



# 1 INTRODUCTION TO THE PLAN

## 1.1 Background

Like many urbanized areas in California and throughout the nation, the San Diego Region currently faces a number of key challenges in ensuring the long-term sustainability and enhancement of its water supply, water quality, and watershed resources. The San Diego Integrated Regional Water Management (IRWM) Plan (or “IRWM Plan”) provides a framework for guiding future efforts to protect these valuable resources through increased coordination and integration of a variety of existing management and planning programs and approaches. To define and formalize a core commitment to developing the IRWM Plan, a Regional Water Management Group (RWMG), consisting of the following three agencies, has been established:

- San Diego County Water Authority (the Water Authority),
- County of San Diego (the County), and
- City of San Diego (the City) Water Department

Water demand projections and water supply diversification strategies developed by SDCWA are acknowledged by the State of California Department of Water Resources in the draft *California Water Plan Update 2005* (Bulletin No. 160). The draft version of the *California Water Plan Update 2005* notes importance of regional water supply planning, and describes water supply diversification strategies of SDCWA and other Southern California agencies. While noting that both water quality and water supply challenges exist, the draft *California Water Plan Update 2005* concludes that Southern California regional water agencies have “developed a diverse water portfolio that is balanced between local and imported supplies” and have solid plans for adapting to changing conditions and meeting future water needs.”

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“developed a diverse water portfolio that is balanced between local and imported supplies” and have “solid plans for adapting to changing conditions and meeting future water needs.”

The IRWM Plan is being developed under the guidelines contained in California Water Code (CWC) §79570 *et seq.*, but also serves as a basis for a longer-term process that exceeds the minimum requirements of that section. The RWMG is committed to completing and adopting the IRWM Plan prior to January 1, 2007, and has entered into a Memorandum of Understanding (MOU) to cooperatively accomplish this undertaking. Building on the adoption of the IRWM Plan, an extended process will then be initiated to develop a broader and more inclusive commitment to integrated water planning in the Region. During this second planning phase, the RWMG will be expanded to include other agencies and stakeholders with a role to play in integrated water planning. This extended process is expected to require a minimum of two additional years beyond the adoption of the IRWM Plan. While the IRWM Plan is intended to be comprehensive in the identification of issues and strategies to be addressed, it is expected that additional refinement of vision and strategies will occur during this phase.

The primary purpose of the IRWM Plan is to identify and prioritize regional issues and concerns related to water supply, water quality, and watershed protection, and to formally establish a process and commitment to addressing them. This reflects both the need for initially establishing the core commitment of the RWMG, as well as the longer-term need to expand that commitment to all of the agencies and stakeholders with a role in regional, integrated water management.

## **1.2 IRWM Plan Approach**

The overall approach to be followed in the development of an IRWM Plan, and in subsequent planning and implementation stages, is to provide a process for moving stakeholders toward the realization of common objectives, but that leaves room for continuous and iterative improvement.

The RWMG, utilizing extensive input from stakeholders and consulting agencies has created a plan for integrated resource planning which includes short- and long-term goals and objectives, a description of the existing regional conditions, a description of the

strategies employed to address regional water management issues, information on the public involvement and outreach taken to develop the Plan, and a discussion of the method of evaluation and use of data generated through implementation of the Plan. The analyses of the strategies include a discussion of the current water management objectives, capabilities, and economic conditions, and identification of the risks associated with Plan implementation. This Plan also includes the roles of the stakeholders, their respective tasks, and the challenges of plan implementation (regulatory compliance, timelines, costs, etc.).

The Plan, as envisioned by the RWMG and other stakeholders in this process, will foster cooperation and integration between the on-going processes currently taking place in our Region. It is through integration of the existing (and future) activities related to improvement of water quality, water supply, and water reliability that we can address our regional water related issues. The RWMG desires to foster the integration of existing efforts rather than work from umbrella or top-down structure. The RWMG will emphasize voluntary cooperation among entities through forums and other coordinated activities, and set the stage for moving forward with implementation of policies, programs, and projects that are recommended for the benefit of the Region.

In developing this draft Plan, the RWMG has identified the necessary actions to be taken in the short-term and in the long term for meaningful regional planning to occur. In the adopted IRWM Plan, the approach will be fully developed and defined by these actions:

- Involve stakeholders now (feedback) and as part of expanded commitment (partners)
- Integrate, build on, and support existing efforts rather than creating something entirely new
- Relate vision, objectives, and strategies to approach
- Establish core commitment
- Establish a process for completion of IRWM Plan and long-term regional planning)
- Support the efforts of those already working on these issues
- Balance the need for further exploration / planning with tangible short-term achievements (emphasize implementation projects)

- Increase communication (and therefore understanding) between different types of planning and management efforts to support common objectives, implement via existing channels
- Fully define the range of issues that must be addressed for long-term success

The following targeted timelines will guide to completion of the Plan prior to the mandatory January 1, 2007 adoption date:

<b>Date</b>	<b>Activity</b>
July 14, 2005	Step 1 IRWM Application Submitted
August 2005-June 2006	Stakeholder Outreach and Plan Refinement
August 4, 2005	Step 2 PSP Public Meeting
TBD	Submittal of Step 2 Application
October 15, 2005	First draft of updated IRWM Plan
November 15, 2005	First public meeting
January 15, 2006	Second draft of updated Plan
February 15, 2006	Second public meeting
June 30, 2006	Completion of IRWM Plan
November 30, 2006	Formal adoption of IRWM Plan

Beyond the adoption of the IRWM Plan, we will establish a blueprint to coordinate the development of water supply, water quality, and protection projects. This blueprint will be further defined and described in the adopted IRWM Plan.

## 2 OVERVIEW OF WATER MANAGEMENT PLANNING IN THE SAN DIEGO REGION

### 2.1 Why Regional Water Management Planning?

The San Diego Region (Figure 2-1) has a \$126 billion economy and nearly 3 million residents. Since 1946, the Region has increasingly relied on imported water to support its economy. Due to limited local water supplies and our semi-arid climate, more than 90 percent of our Region's water is imported from the Colorado River and Northern California. Water use in the San Diego area is closely linked to the local economy, population, and weather. Over the last half century a prosperous local economy has stimulated population growth, which in turn produced a relatively steady increase in water demand. In 2002, this demand reached over 686,000 acre-feet (AF), and this is projected to reach 872,400 AF, an increase of approximately 26 percent, by 2030. Municipal and industrial uses currently constitute about 80 to 85 percent of this usage, and agricultural uses the remaining 15-20 percent.

Management of our watershed resources has also recently become increasingly prominent. Among the many issues of highest importance in our watersheds is habitat quality. The San Diego Region has more rare, threatened, and endangered plant and animal species than any comparable land area in the continental United States. For instance, the California Native Plant Society lists a total of 154 rare or endangered species of flora, many of which are not found in any other county or state. Urbanization, and habitat destruction in particular, has also significantly impacted wildlife abundance and diversity. Protecting this diversity remains a key concern for the Region, and must be balanced with other watershed and water management issues.

Concerns about the quality of receiving waters have become increasingly pronounced in the past few decades. As of 2002, the San Diego Region had a total of 114 separate Clean Water Act section 303(d) listings. Of particular concern are bacteria, eutrophication / nutrients, and metals. Multiple Total Maximum Daily Loads (TMDLs) are now either adopted or in development. Increasing recognition of the role of urban runoff in water quality degradation also led to the February 2001 adoption of a regional General Municipal Stormwater Permit (NPDES Order No. 2001-01) that is one of the most aggressive in the nation. In response, local municipalities have significantly stepped up their efforts to decrease the impacts of non-point source pollution within their jurisdictions. Although the Region has seen tangible progress, resolution of many of the Region's most pressing water quality issues is years away.



The difficulty of understanding and integrating disparate management and planning approaches points to a need for new approaches and increased effort. As is illustrated further throughout this document, most major water management issues are addressed either wholly or partially through one or more programs, plans, or efforts. Most often, programs have been established through legislation or regulatory mandates to respond to a specific issue or set of issues. In many cases, these approaches often neglect crucial aspects of inter-connections to other existing programs or efforts. As the number of water management issues and concerns continues to increase, as well as the complexity of each individual effort, the identification and implementation of coordinated strategies for achieving greater integration will become increasingly important.

## 2.2 Regional Water Management Participants

As required by California Water Code (CWC) §79570 *et seq.*, the San Diego Regional Water Management Group (RWMG) is comprised of three agencies, each possessing responsibility and statutory authority for key aspects of water management. In addition to the core commitment of these three agencies, the involvement of a variety of stakeholders is crucial to the success of integrated water planning in the Region. The IRWM process therefore builds on the experience and commitment of a large number of individuals and organizations that are already providing extensive coordination of water supply, water quality, and watershed issues. While not exhaustive, Table 2-1 illustrates the diversity of agencies and organizations that are necessary for a regional, integrated planning effort to be successful in the San Diego Region.

**Table 2-1  
Cooperative Efforts in the San Diego Region**

Program, Agency, or Organization	Purpose	Affiliates
Project Clean Water	To provide a broad and inclusive forum for exploring water quality issues of regional significance	Broad group spanning governmental agencies, nonprofits, academia, and citizens
Think Blue	Stormwater pollution prevention	City of San Diego, Caltrans, Regional Stormwater Copermittees
San Diego County Water Authority, City of San Diego Water Department	Conservation programs Recycling Projects Water Facilities Master Plan Mutual Aid Agreements Treated Water Management Plan	Agribusiness, industry, member agencies, homeowners, schools Member Agencies Metropolitan Water District Skinner Area Operating Group

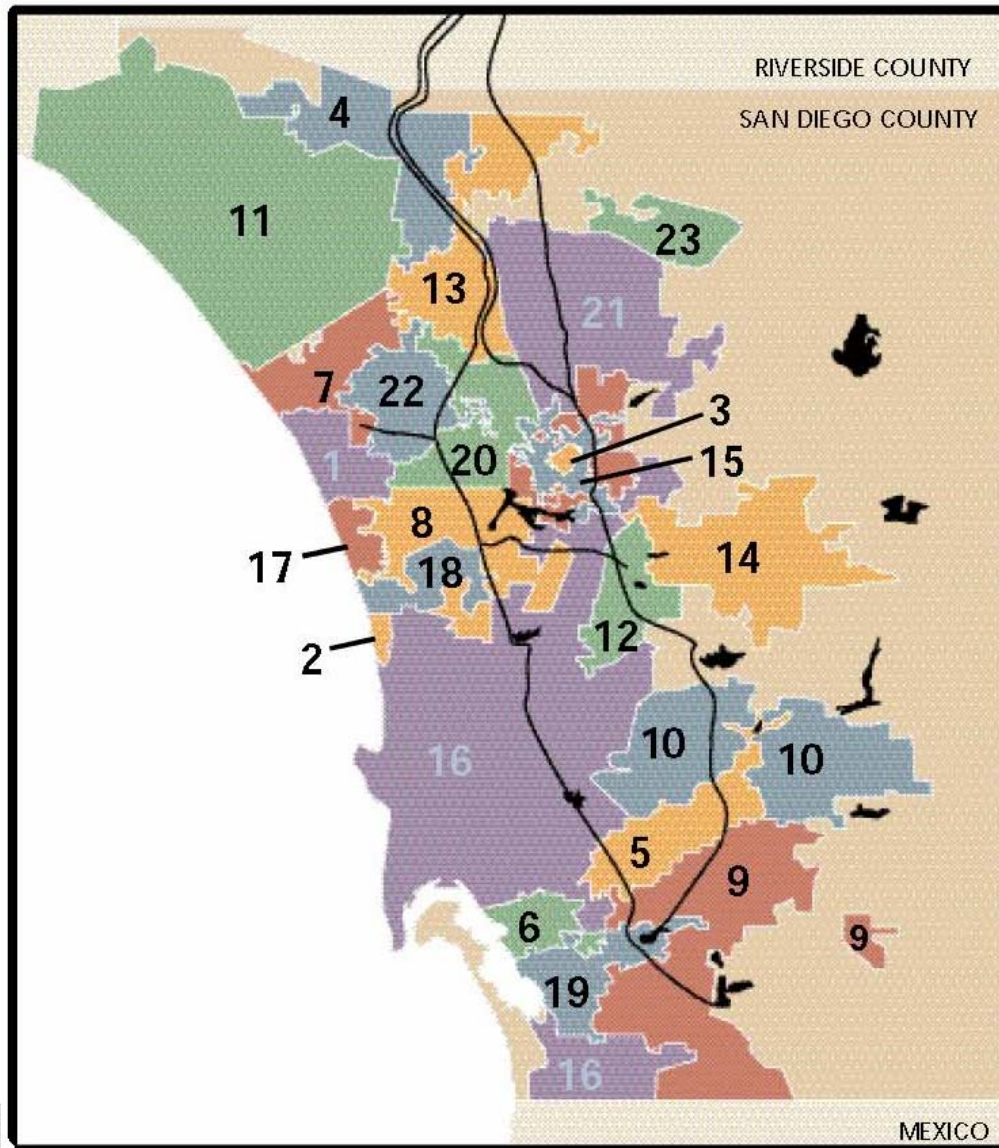
<b>Program, Agency, or Organization</b>	<b>Purpose</b>	<b>Affiliates</b>
Municipal Stormwater Copermittee Management Committee	Regulatory compliance with Municipal Stormwater Permit	County of San Diego City of San Diego Port of San Diego San Diego County Airport Authority All incorporated cities in County of San Diego
U.S. Army Corps of Engineers	Special Area Management Plan (SAMP) for Santa Margarita River Watershed	County of San Diego City of Temecula City of Murrieta Water agencies US Marine Corps Base Camp Pendleton
	Special Area Management Plan for Otay River Watershed	City of Chula Vista, the City of Imperial Beach and the Port of San Diego
La Jolla Shores Coastal Watershed Management Group	Critical Coastal Area Planning and Protection	City of San Diego Scripps Institution of Oceanography San Diego BayKeeper
Watershed Urban Runoff Management Program Workgroups	Regulatory compliance with the watershed requirements of Municipal Stormwater Permit	County of San Diego City of San Diego Port of San Diego San Diego County Airport Authority All incorporated cities in County of San Diego
Santa Margarita River Watershed Workgroup	Integrated Watershed Planning and Protection	County of San Diego City of Temecula City of Murrieta Water agencies US Marine Corps Base Camp Pendleton
San Luis Rey Watershed Council	To develop and implement a comprehensive resource management plan for the San Luis Rey River and its tributaries.	A partnership of local landowners, agricultural growers, Native American bands, community and environmental organizations, government agencies and special districts with ties to this watershed
Carlsbad Watershed Network	To coordinate planning, share resources and find solutions for the benefit of the entire Carlsbad watershed.	Nonprofit Environmental Interest Groups, local jurisdictions in the watershed, other interested groups such as the NRCS, SANDAG, and SDRWQCB.
San Dieguito River Watershed Stewardship Initiative Group	Integrated Watershed Planning and Protection	Representatives from the community groups, governmental jurisdictions, agriculture, environmentalists, and water agencies.
Los Peñasquitos Lagoon Foundation	To prioritize measures to preserve and/or improve the health of the watershed based on an assessment of existing watershed resources and issues	Cities of San Diego, Del Mar and Poway, and the County of San Diego
San Diego River Watershed Workgroup	Integrated Watershed Planning and Protection	San Diego River Foundation, County of San Diego, City of San Diego, incorporated cities in the watershed
Bi-national Watershed Advisory Committee	Binational watershed planning and protection	United States, Mexico, County of San Diego, City of San Diego, City of Tijuana



<b>Program, Agency, or Organization</b>	<b>Purpose</b>	<b>Affiliates</b>
San Diego River Foundation	Address issues of concern in the San Diego River Watershed	Consortium of non profit organizations within San Diego River Watershed
San Elijo Lagoon Foundation	Restoration and preservation of San Elijo and other coastal lagoons	
City of San Diego Multiple Species Conservation Program (MSCP)	Comprehensive habitat conservation planning program	Local jurisdictions and special districts
San Diego County MSCP		

### **2.2.1 The San Diego County Water Authority**

The Water Authority is the predominant purveyor of water in the San Diego Region, supplying from 75 to 95 percent of the Region’s needs, depending on annual surface water runoff into local reservoirs. The Water Authority is governed by a 34-member Board of Directors, and is comprised of 23 member agencies that purchase water for use at the retail level. The County of San Diego is an ex-officio member. Member agencies (six cities, four water districts, eight municipal water districts, three irrigation districts, a public utility district, and a federal military base) have diverse and varying water needs. The locations of member agency service areas in Figure 2-2. In terms of land area, the largest member agency is the City of San Diego, with 210,626 acres. The smallest agency is the city of Del Mar, with 1,159 acres. Some member agencies, such as the Cities of National City and Del Mar, use water almost entirely for municipal and industrial purposes. Other agencies, including Valley Center, Rainbow, and Yuima municipal water districts, deliver water mostly for agricultural production.



- |    |                                  |    |                                |
|----|----------------------------------|----|--------------------------------|
| 1  | CARLSBAD M.W.D.                  | 12 | CITY OF POWAY                  |
| 2  | CITY OF DEL MAR                  | 13 | RAINBOW M.W.D                  |
| 3  | CITY OF ESCONDIDO                | 14 | RAMONA M.W.D                   |
| 4  | FALLBROOK P.U.D.                 | 15 | RINCON DEL DIABLO M.W.D        |
| 5  | HELIX WATER DISTRICT             | 16 | CITY OF SAN DIEGO              |
| 6  | CITY OF NATIONAL CITY*           | 17 | SAN DIEGUITO WATER DISTRICT    |
| 7  | CITY OF OCEANSIDE                | 18 | SANTA FE IRRIGATION DISTRICT   |
| 8  | OLIVENHAIN M.W.D                 | 19 | SOUTH BAY IRRIGATION DISTRICT* |
| 9  | OTAY WATER DISTRICT              | 20 | VALLECITOS WATER DISTRICT      |
| 10 | PADRE DAM M.W.D                  | 21 | VALLEY CENTER M.W.D            |
| 11 | CAMP PENDLETON MARINE CORPS BASE | 22 | VISTA IRRIGATION DISTRICT      |
|    |                                  | 23 | YUIMA M.W.D.                   |

\*The Sweetwater Authority is a service organization for the City of National City and the South Bay Irrigation District.

**Figure 2-2  
Authority Service Area with District Boundaries**

The Water Authority is the lead agency for preparing both the draft and final IRWM Plan, as well as submitting the application for Prop 50 funds. As the designated project lead per the RWMG Memorandum of Understanding (MOU), the Water Authority will be also responsible for contracting assistance in the development of the Plan and for receiving State funding to the Region for implementation projects.

### **2.2.2 The County of San Diego**

The County of San Diego has a number of water and watershed-related program responsibilities. In addition to implementing its own municipal stormwater management program in unincorporated areas, the County acts as Principal Copermittee for the 21 Copermittees of the Regional Municipal Stormwater Permit. The County also implements a variety of other water quality, environmental, watershed, and public health programs. Among these programs and responsibilities, which parallel many of the water management strategies discussed in Section 4.4, are:

- Watershed Planning
- Recreational Water Quality
- Groundwater Protection
- Wastewater Management
- Flood Control
- Habitat and Species Conservation
- Air Quality
- Agricultural Water Quality
- Commercial and Industrial Regulatory Oversight (CUPA, CURFFL, etc.)

Implementing these and a myriad of other programs, both regionally and sub-regionally, provides the County a unique perspective for pursuing the integration of approaches that span multiple agencies and jurisdictions. Since 2000, the County's Project Clean Water efforts have provided a broad-based forum for developing stakeholder-driven solutions to pressing water quality problems in the Region. Through Project Clean Water, the County has assumed the primary responsibility for coordinating stakeholder input into the development of the IRWM Plan and a regional implementation project list. In future phases of Plan development and implementation,

the County will continue to oversee and coordinate stakeholder participation. Stakeholder participation is discussed further in **Section 6**.

### **2.2.3 The City of San Diego**

The City of San Diego has a number of water, wastewater, stormwater, and watershed-related program responsibilities. The City has implemented its own stormwater program and is one of the 21 co-permittees of the Regional Municipal stormwater permit.

The City also operates an extensive wastewater treatment system inside the City limits of San Diego with 2,900 miles of sewer line servicing a 330-square mile area with a population of 1.3 million and operates the Metropolitan system with 15 member agencies covering a 450-square mile area with a population of 2.2 million treating 180 mgd of wastewater every day of the year.

The City has a wastewater treatment plant and two reclamation plants where reclaimed water is treated in north and south parts of the county. The treatment plant provides reclaimed water to customers in the northern and southern part of the county.

The water department of the City operates an extensive water system with 1.3 million customers. The City also provides water to two other agencies. The water system has 3,000 miles of water lines, three treatment plants, and nine raw water reservoirs.

The responsibilities are:

- Water supply reliability
- Water conservation
- Water recycling
- Watershed planning
- Recreation and public access
- Flood management
- Land use planning
- Water quality protection
- MSCP

The City operates a number of programs which provide the City an opportunity to pursue integration approaches with other agencies and jurisdiction.

#### **2.2.4 Regional Stakeholders**

The San Diego Region is somewhat unique in the degree to which stakeholder input and participation is utilized in local programs. As discussed further in Section 6, the County of San Diego has conducted its Project Clean Water program since July 2000. As part of this effort, more than 750 people have participated in the collaborative discussion of regional water quality issues. Much of the content of this integrated regional water planning effort was developed by these stakeholders during Project Clean Water's first four years. More importantly, the existence of a network of interested and committed partners is one of the keys to ensuring long-term success. The RWMG partners have taken advantage of that network by utilizing the Watershed Protection Technical Advisory Committee (WPTAC) as the primary vehicle for vetting early ideas on integrated water planning, and for soliciting and coordinating implementation project proposals. Stakeholder involvement to date has included a broad cross-section of regulatory agencies, local jurisdictions, utilities, academic institutions, non-governmental organizations (NGOs), special interest groups, and the interested public. Although future efforts will necessarily require reaching out to an even broader group of participants, this network will continue to be heavily relied on.

### **2.3 Status of the Planning Process**

In September 2004, the Water Authority, the City, and County met to discuss the Integrated Regional Water Management Plan out of which grew the Regional Water Management Group (RWMG). The RWMG solicited input and grant pre-applications from the Project Clean Water Technical Advisory Group (TAC), Water Authority member agencies and other interested parties. After a series of meeting with stakeholders, five regional objectives were adopted.

To accomplish the complex tasks of developing an IRWM Application and Plan and managing grant funds for multiple projects, the RWMG entered into a Memorandum of Understanding to fund the process, establish Water Authority as the lead agency, and hire a consultant team. This draft IRWM Plan written collectively by the RWMG and the

consultant team of Anchor Environmental will be submitted with the Step 1 application on July 14, 2005.

The RWMG fully expects the completed IRWM Plan to be a document that will be refined and updated to meet community needs. Existing avenues of input and review, including the Technical Review Committee (TRC) and WPTAC, will continue to be utilized to obtain stakeholder input. Additionally, Water Authority member agencies and other interested partners will be consulted extensively. The Plan will be circulated on the Project Clean Water and other applicable web sites. Upon completion of this process, the Plan will be adopted by the RWMG by January 1, 2007. We currently anticipate adoption as early as November 30, 2006.

Adoption of the IRWM Plan will complete the first phase of planning, after which a more inclusive and extensive process will be initiated to develop a blueprint for regional water management. This Blueprint will build on the IRWM Plan by bringing other members to the RWMG, and refining and expanding the vision, objectives, strategies, and implementation project priorities to reflect a broader and more extensive dialogue. Blueprint development and adoption is expected to take an additional two years beyond the initial adoption of the IRWM Plan.

### 3 PLAN PURPOSE, VISION, AND OBJECTIVES

#### 3.1 Purpose

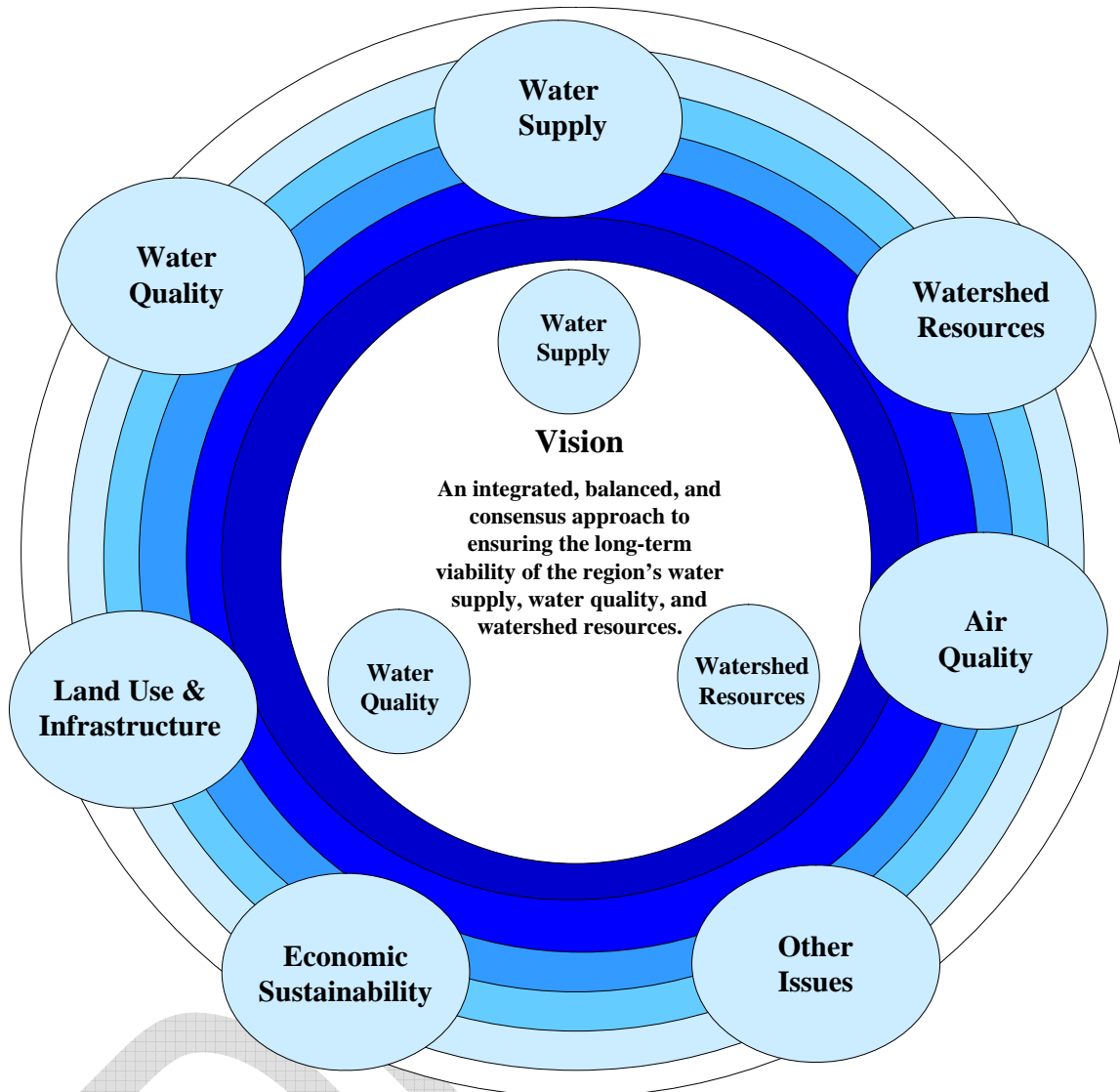
The primary purpose of the IRWM Plan is to define and implement a regional vision for integrated water management. This will initially be achieved through the identification and prioritization of regional issues and concerns related to water supply, water quality, and watershed protection, as well as the formal establishment of a process and commitment to addressing them. While this effort is ostensibly focused on compliance with the minimum requirements of California Water Code (CWC) §79570 *et seq.*, it also serves as a basis for a longer-term process that exceeds those requirements. This distinction is critical because it not only reflects the need for initially establishing the core commitment of the RWMG, but also underscores the need to expand that commitment to all of the agencies and stakeholders with a role in regional, integrated water management.

#### 3.2 Vision

The following vision statement has been established to guide the development and implementation of a long-term strategy for regional, integrated water management:

*An integrated, balanced, and consensus approach to ensuring the long-term viability of the Region's water supply, water quality, and watershed resources*

This vision of integrating regional issues is shown on Figure 3-1.



**Figure 3-1**  
**Vision of Regional Water Management Group and Blueprint Element**

### 3.3 Regional Objectives

In November 2004, the RWMG selected five objectives to serve as guideposts in developing an IWRM Plan that supports our regional vision and meets our regulatory obligations. Fifteen draft objectives were initially developed by RWMG members, and discussed and refined with stakeholders at the October 13, 2004 meeting of the Project Clean Water, WPTAC. These objectives, each of which is described further below, are:

1. Facilitate the integration of programs and strategies for enhancing the Region's water supply, water quality, and watersheds

2. Improve the reliability of the Region's imported and local water supplies
3. Reduce the Region's reliance on imported water
4. Protect and enhance the health and viability of the Region's watersheds
5. Support regional efforts to attain or be consistent with statewide regulatory standards and priorities.

These regional objectives will continue to be periodically reviewed and refined as appropriate with stakeholders and the general public prior to and after IRWM Plan adoption.

### ***3.3.1 Facilitate the Integration of Programs and Strategies for Enhancing the Region's Water Supply, Water Quality, and Watersheds***

While water supply, water quality, and watershed management are in many ways distinct disciplines, experience has shown that numerous issues and concerns cut across these broad program approaches. For example, although for different reasons, urban runoff managers and water conservation staff share a common objective of reducing water use. Likewise, healthy riparian corridors that are free of invasive species have much lower water needs than those that are not, and provide much greater ability to buffer the effects of urban runoff contamination. These similarities are compelling reasons to plan on a regional basis. Land use, water quality, and water supply managers have come to understand that greater integration of existing programs, such as water quality monitoring, water conservation, ecosystem restoration, water supply infrastructure, and pollution prevention will also help the Region reduce its dependence on imported water.

"Facilitation" projects as termed by the RWMG are those programs and projects that span watersheds, that generally focus on one objective, and that offer on-the-ground results. These are also the types of regional projects targeted by the San Diego Regional Water Quality Control Board -- projects that eradicate, control, and prevent introduction of invasive non-native species, maintain and sustain landscaping without the use of fertilizer or chemical pesticides, and environmental education and awareness.

The watershed management plans developed to date also contain specific “facilitation” projects or identify these kinds of activities as high priority projects. Most watershed management plans in the Region include action plans that contain cross-watershed actions, such as gathering a more comprehensive understanding of the groundwater resources, taking inventory hydromodifications, and developing mutually-acceptable goals for water quality improvement and a watershed-wide monitoring program to reach those goals.

### **3.3.2 Improve the Reliability of the Region’s Imported and Local Water Supplies**

Approximately six miles south of the Riverside-San Diego County line, the Water Authority takes delivery of imported water that the Metropolitan Water District of Southern California (MWD) has conveyed from Lake Skinner in Riverside County. This water is delivered to Water Authority member agencies through five large-diameter pipelines that traverse the County north to south. These pipelines have a combined capacity to carry 900 million gallons a day, enough water to fill more than 3,000 bathtubs per minute, every minute of the day. In spite of the great volume of water delivered to the Region each day, demand remains high.

A great number of factors can affect the reliability of water supplies (Water Authority Facilities Master Plan, Appendix D). While many of these (such as weather, storage facilities, market demands, etc.) are beyond the purview of a regional, integrated planning effort, the need to continue identifying and pursuing measures for ensuring the reliability of imported and local supplies remains paramount.

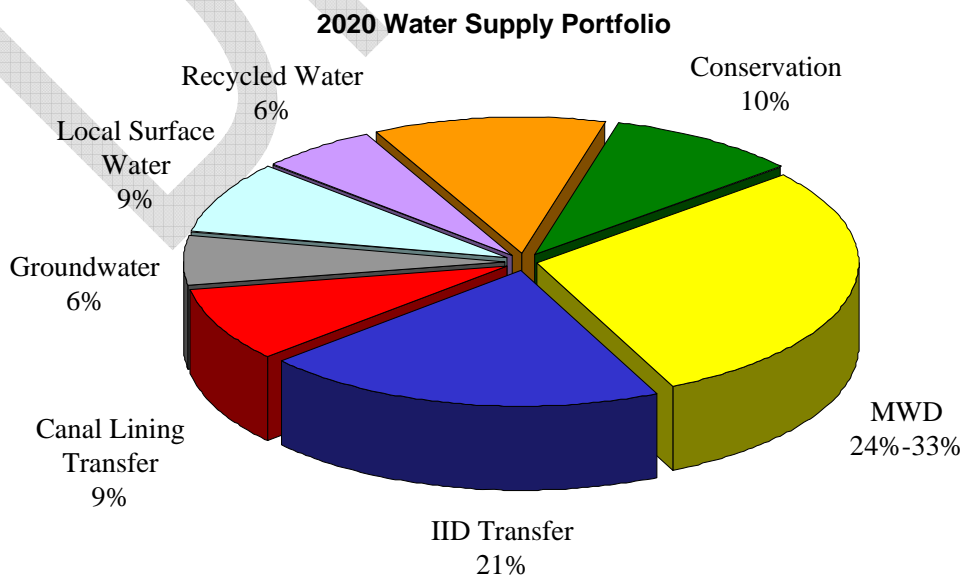
### **3.3.3 Reduce the Region’s Reliance on Imported Water**

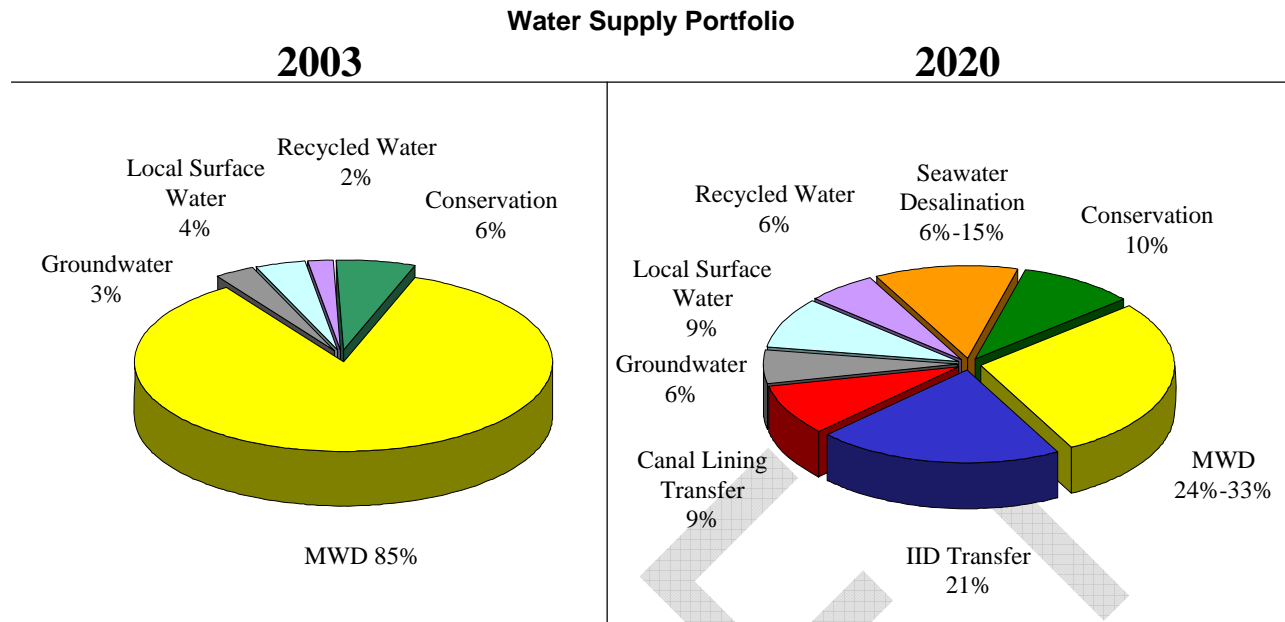
This objective underscores the need to balance efforts directed solely at the reliability of imported water supply with the diversification of sources and decreases in demand. In this respect, other strategies such as water conservation, increased reliance on local supplies, or recycling are important. In several instances, local watershed management plans (e.g., the Santa Margarita River Watershed Management Plan) have addressed this issue by identifying the need for expanding existing conservation efforts, developing additional local sources of water supply, and protecting groundwater.

As a major component of its diversification effort, the Water Authority entered into an agreement with the Imperial Irrigation District (IID) for the transfer of 200,000 AF of conserved water in April 1998. During the next five years, it is expected that this transfer agreement, along with other water transfers, will significantly increase the Water Authority's water supply reliability and reduce the Region's reliance on water from the Colorado River and Northern California.

Conservation and recycling also reduce dependence on imported water. The 1988-1992 drought led to many emergency water conservation measures. Since that time much has been learned about devices, cost-effectiveness, research, financing, and public and governmental acceptance of conservation measures. In Fiscal Year (FY)05, Water Authority programs saved 45,000 AF with the goal of saving 90,000 AF per year by 2020. Conservation is the most cost-effective source of water available to the region at \$50 - \$500 per AF and cheaper than imported water.

Recycling of municipal wastewater for use on landscape and some industrial settings is also an important part of a comprehensive water management strategy, but is also more technical and challenging than simple conservation. Wastewater must be treated to exacting standards and then delivered through a separate pipeline system. Despite these and other obstacles, recycled water is one of the best ways to drought-proof a region.





### 3.3.4 Protect and Enhance the Health and Viability of the Region's Watersheds

Although watershed protection is desirable as an end in itself, healthy and viable watersheds are desirable for a variety of other reasons. For instance, they provide habitat for threatened and endangered species, increase the reliability of water supplies, and protect the quality of receiving waters. While all of the major watershed areas in the Region have completed or will soon complete a watershed management plan, this process is ongoing and must adapt as new constraints and opportunities present themselves. This regional objective acknowledges the importance of that process as part of a broader integrated regional water management planning effort.

Several management strategies support this objective. Land acquisition is a high priority because property is expensive and costs are unlikely to decrease or stop their current rate of appreciation. Watershed restoration activities such as wetland restoration, removal of invasive species, stream daylighting, and native plant installations, are also priorities. Public education spans several Regional Objectives, but is a particularly important part of regional watershed protection strategies.

### **3.3.5 Support Regional Efforts to Attain or be Consistent with Statewide Regulatory Standards and Priorities**

This objective reflects the importance of working within the existing regulatory framework to achieve the other water supply, water quality, and watershed goals and objectives described above. Rather than supporting regulatory compliance per se, this objective emphasizes the need to ensure that the Region's priorities are conceptually aligned with those of the state. Of particular importance in this respect is the Water Quality Control Plan for the San Diego Basin (Basin Plan). The Basin Plan designates the beneficial uses of the Region's surface and ground waters, water quality objectives their protection, and establishes implementation programs and plans to achieve those objectives<sup>1</sup>. Compliance with water quality standards is ultimately manifested in a variety of programs and initiatives such as Clean Water Act Section 303(d) listing, TMDLs, and Municipal Stormwater and other NPDES discharge permits. Other important statewide priorities are embodied in the State Water Resources Control Board Nonpoint Source Control Program and the Regional Board's Watershed Management Initiative.

The Urban Water Management Planning Act of 1983 (CWC §10610 – §10656) requires all urban water suppliers within the state to prepare Urban Water Management Plans and update them every five years. The Water Authority and the City's Urban Water Management Plans were last revised in 2000, and are currently being updated for 2005. These requirements define a water management framework for the Region that is ultimately manifested in the specific water supply and conservation programs of the Water Authority and its member agencies. As such, the objectives of both state and local agencies are mutually supportive.

Numerous other statewide standards and priorities are relevant to water quality, water supply, and watershed resource protection issues. A key focus of IRWM planning will be to thoroughly characterize and incorporate these as appropriate. To this end, it should be emphasized that regulatory compliance often offers opportunities for innovation as evidenced by the MSCP and SAMP processes. By targeting broad habitat

protection goals, rather than only approaching compliance on a site-by-site basis, these programs illustrate how environmental outcomes and regulatory compliance can both be achieved more efficiently.

The Safe Drinking Water Act of 1996 requires the preparation of source water assessments for all drinking water sources. These assessments must be submitted to the Environmental Protection Agency (USEPA). In California, source water assessments are referred to as the Drinking Water Source Assessment and Protection (DWSAP) Program. The DWSAP fulfills the requirement for source water assessments and will also help to facilitate the development of protection programs for both groundwater and surface water sources.

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<sup>1</sup> The California Ocean Plan serves a parallel function for ocean waters. Since this IRWM Plan seeks to integrate across watershed and coastal issues, consideration of, and adherence to, Ocean Plan standards and policies will also be a priority.

## 4 IMPLEMENTATION STRATEGY

### 4.1 Implementation Overview

The implementation overview will be provided in the adopted IRWM Plan. The Plan will include, but be limited to, the following discussion items:

- Pursuit of project funding
- Process to update of regional objectives and strategies
- Entering into nformal and formal agreements
- Disucssions with cooperating agencies

### 4.2 Regional Priorities for Implementation

Priorities for IRWM Plan Implementation will be addressed in two primary phases, short-term and long-term.

*Short-term priorities for IRWM Plan implementation* are actions that will be completed prior to IRWM Plan adoption. The RWMG fully expects the completed IRWM Plan to be a document that will be refined and updated to meet community needs. Existing avenues of input and review, including the TRC and WPTAC, will continue to be utilized to obtain stakeholder input. Additionally, Water Authority member agencies and other interested partners will be consulted extensively. The Plan will be circulated on the Project Clean Water and other applicable web sites. Upon completion of this process, the Plan will be adopted by the RWMG by January 1, 2007. We currently anticipate adoption as early as November 30, 2006.

Short-term actions to be taken are:

- Complete and adopt the IRWM Plan prior to January 2007 (target is November 30, 2006)
- Establish regional priorities for continued discussion, initially relying on the priorities already stated in existing regional planning documents (include the Wetlands Recovery Project, watershed management plans, water supply planning documents, etc.)
- Develop a web-based data management system as a tool for facilitating coordination and encouraging public access

- Utilize a variety of stakeholder and public input processes to ensure adequate review of IRWM Plan vision, objectives, and strategies.
- Begin to build public/private partnerships to address regional priorities and to create vision for the Region
- Create a mechanism for modifying the adopted IRWM Plan in response to regional changes and expanded stakeholder participation

*Long-term priorities for IRWM Plan implementation* will be targeted for completion after IRWM Plan adoption. Adoption of the IRWM Plan will complete the first phase of planning, after which a more inclusive and extensive process will be initiated to develop a blueprint for regional water management. This Blueprint will build on the IRWM Plan by bringing other members to the RWMG, and refining and expanding the vision, objectives, strategies, and implementation project priorities to reflect a broader and more extensive dialogue. Blueprint development and adoption is expected to take an additional two years beyond the initial adoption of the IRWM Plan.

Long-term actions to be taken are:

- Continue to build on the IRWM Plan framework
- Expand the first phase regional data management system to support the expanded objectives and content of the Regional Water Blueprint process
- Develop updated regional implementation project lists and cooperatively seek funding
- Adjust Plan to reflect changing priorities as projects are completed
- Build alliances between individual project partners (land use authorities, etc.) and promote unified strategies for water management in the Region

### **4.3 Statewide Priorities for Implementation**

Just as the San Diego Integrated Regional Water Management (SDIRWM) Plan has articulated regional priorities, so has the State of California. These statewide priorities are well established through research and assessment, and consistency between the Regional and state priorities further validates the projects that will be implemented to support these priorities. A particular strength of the IRWM Plan is the breadth and depth of statewide priorities that have been considered. A discussion detailing how IRWM Plan development

and implementation project selection will ensure consistency with Statewide Priorities will be included in the completed IRWM Plan.

#### **4.4 Water Management Strategies**

##### **4.4.1 Strategies Addressed**

To ensure a sufficiently broad approach to integrated water management, the IRWM Plan will incorporate many different water management issues and strategies. This section provides an overview of the major issues and strategies that are currently being considered for inclusion in the completed IRWM Plan. Prior to Plan completion, extensive stakeholder input will be solicited to ensure; this is necessary ensure that the Plan is sufficiently comprehensive and properly focused on the strategies most important to long-term success. It is expected that some strategies not discussed here will be added; likewise, some existing elements may be dropped if not determined to be priorities for the Region. The completed IRWM Plan will contain a much more extensive analysis of each water management strategy, including initial recommendations on where to focus longer-term discussions and, to the degree possible, specific changes that might be considered or pursued. This expanded content will form the basis for subsequent dialogue and development of the Regional Water Blueprint over the following two years.

Table 4-1 below compares the content of the remainder of this section to the state's required and recommended Water Management Strategies. In doing so, it illustrates the comprehensive nature of this San Diego Regional effort. All told, each of the 20 state water management strategies is addressed, and another nine specific elements added. This section will be expanded in the adopted IRWM Plan.

**Table 4-1  
Comparison of Draft IRWM Plan Content and State Water Management Strategies<sup>2</sup>**

<b>Draft Plan Section</b>	<b>Water Management Strategy Addressed</b>
<b>Water Supply</b>	<ul style="list-style-type: none"> <li>• Water supply reliability</li> <li>• Water transfers</li> <li>• Imported water</li> <li>• Water conservation</li> <li>• Water recycling</li> <li>• Conjunctive use</li> <li>• Surface storage</li> <li>• Desalination</li> <li>• Groundwater management</li> </ul>
<b>Water Quality</b>	
Surface Water Quality	<ul style="list-style-type: none"> <li>• Water quality protection and improvement</li> <li>• NPS pollution control</li> <li>• Stormwater capture and management</li> </ul>
Groundwater Quality	<ul style="list-style-type: none"> <li>• Water quality protection and improvement</li> <li>• Groundwater management</li> </ul>
Coastal and Ocean Water Quality	<ul style="list-style-type: none"> <li>• Water quality protection and improvement</li> </ul>
<b>Watershed Resources</b>	
Watershed Planning	<ul style="list-style-type: none"> <li>• Watershed planning</li> </ul>
Resource Protection Programs	<ul style="list-style-type: none"> <li>• Ecosystem restoration</li> <li>• Environmental and habitat protection and improvement</li> <li>• Wetlands enhancement and creation</li> </ul>
Recreation and Public Access	<ul style="list-style-type: none"> <li>• Recreation and public access</li> </ul>
<b>Land Use and Infrastructure</b>	
Land Use Planning	<ul style="list-style-type: none"> <li>• Land use planning</li> </ul>
Flood Management	<ul style="list-style-type: none"> <li>• Flood management</li> </ul>
Transportation Management	<ul style="list-style-type: none"> <li>• Not addressed by State</li> </ul>
Wastewater Management	<ul style="list-style-type: none"> <li>• Water and wastewater treatment</li> </ul>
Growth Management	<ul style="list-style-type: none"> <li>• Not addressed by State</li> </ul>
<b>Air Quality</b>	Not addressed by State
<b>Economic Sustainability</b>	Not addressed by State
<b>Other Issues</b>	Not addressed by State
Environmental Education	
Agriculture	
Public Health	
Tribal Issues	
Fire Management	

<sup>2</sup> This Table is only intended to illustrate the general relationship of the two sets of strategies. In many instances, an individual water management strategy will have applicability in multiple sections. For example, "environmental and habitat protection and improvement" could be listed in numerous sections. This additional level of detail will be reflected in the completed IRWM Plan.

#### 4.4.1.1 Water Supply

The Urban Water Management Planning Act of 1983 (CWC §10610 – §10656) requires all urban water suppliers within the State to prepare Urban Water Management Plans and update them every five years. The Water Authority and the City's Urban Water Management Plans were last revised in 2000, and are currently being updated for 2005. This Plan defines a broad and diversified water management framework for the Region that addressed each of the following Water Management Strategies:

- Water supply reliability
- Water transfers
- Imported water
- Water conservation
- Water recycling
- Conjunctive use
- Surface storage
- Desalination
- Groundwater management

Water Transfers. As a major component of its diversification effort, the Water Authority entered into an agreement with the IID for the transfer of 200,000 AF of conserved water in April 1998. During the next five years, it is expected that this transfer agreement, along with other water transfers, will significantly increase the Water Authority's water supply reliability and reduce the Region's reliance on water from the Colorado River and Northern California.

Conservation. Conservation also reduces dependence on imported water. The 1988-1992 drought led to many emergency water conservation measures. But at that time, it was not well understood what measures were effective, how best to implement them, the true cost and benefits or the public's acceptance. At the same time, many people pressed for maximum conservation before additional water was developed. To address these issues, the Memorandum of Understanding for Urban Water Conservation with 15 Best Management Practices (BMPs) was developed in 1992. To

support the MOU and conservation work, the California Urban Water Conservation Council (CUWCC) was organized to assist MOU signatories in BMP implementation. Signatories pledged that they would voluntarily implement all cost-effective BMPs. Since that time much has been learned about devices, cost-effectiveness, research, financing, and public and governmental acceptance of conservation measures.

In the San Diego Region, conservation began in the depths of the drought with the Landscape Audit Program and the Agricultural Water Management Program in August 1990 to be followed shortly by one of the state's earliest ultra-low-flush toilet (ULFT) incentive programs and showerhead distribution programs. Conservation programs have continued to grow to include high-efficiency clothes washers, pre-rinse spray nozzles, cooling tower conductivity controllers, urinals, X-ray water recycling machines, water brooms, and dual-flush toilets.

In FY06, the focus and budget for water conservation shifted to the landscape. Water Authority provides incentives for artificial turf for public sports fields and playgrounds, self-adjusting, weather based irrigation controllers (WBICs), matching grants for commercial landscape irrigation hardware and a water budget program for commercial landscapes.

The Water Conservation Garden on the campus of Cuyamaca College is the centerpiece for landscape water conservation, education, composting and run-off prevention. Most of all it provides a setting, where residents can see, touch and learn how beautiful a water conserving landscape can be. Landscape remains the single greatest opportunity for water conservation and the single greatest challenge due to the behavioral and educational efforts needed to change practices.

Recycling. Recycling of municipal wastewater for use on landscape and some industrial settings is a more technical and challenging process than simple conservation. Wastewater must be treated to exacting standards and then delivered through a separate pipeline system. Sites receiving recycled water must be modified to accept it safely and staff must attend training to learn how to safely use it.

Problems with high levels of total dissolved solids in potable water are magnified in recycled water requiring careful irrigation practices. Despite these obstacles, recycled water is one of the best ways to drought-proof a region.

Water Authority manages a Financial Assistance Program to provide funding to member agencies to develop recycling facilities and install delivery pipelines. Metropolitan also provides \$250/AF to water districts to produce and beneficially use recycled water. In FY05, the Water Authority's recycling program received a grant of \$715,000 from The State Water Resources Control Board and the U.S. Bureau of Reclamation for the Phase II Regional Recycling Study. The study will examine obstacles to greater water recycling, find ways to overcome the obstacles, and investigate how to provide funds to member agencies for recycling projects. Federal funds of \$6.9 million in Title XVI were designated for San Diego recycling projects.

Surface Storage. The Metropolitan Water District of Southern California (MWD), the Water Authority, and the City recently approved agreements for the Surface Storage Program (Program). The overall intent of the Program is to improve the reliability of the imported water system to the region by shifting imported treated water demands from peak periods to off-peak periods through utilization of surface storage in San Diego County.

This five-year Program is intended to shift imported water demands of the imported treated water aqueduct system from peak to off-peak periods, while maximizing the use and efficiency of local surface water reservoirs. Imported water will be stored in local surface reservoirs during the November to May lower water demand period. The stored water will then be withdrawn for local use during the higher treated water demand period of June through October, thereby "shifting" demands on the imported water aqueduct system under this Program. MWD assumes storage operational losses due to evaporation, leakage and spills for water stored. The City and other participating local water agencies will receive a \$70 per acre-foot (AF) discount for water "shifted" through this Program. An additional \$35 per acre foot discount (\$105/AF Total Discount) may also be achieved if MWD makes an additional request to participating member agencies to further decrease their treated

water demands during specific high demand events which may last up to 7 days. The City will maximize its participation in this Program and expects to shift between 25,000 AF and 35,000 AF of water per year, depending on availability. This will result in annual savings to the City of between \$1.75 million and \$2.5 million.

Desalination. While a secure supply of imported water is fundamental to the Region's water supply reliability, seawater desalination emerged as a preferred means of developing new local water supplies. Seawater desalination provides multiple benefits from a single investment. A new, drought-proof water supply, it also provides high-quality treated drinking water to the Region. It is a critical component of the Water Authority's water supply diversification program.

The Water Authority initiated an environmental impact report for a 50-million-gallon-per-day regional seawater desalination facility. The Water Authority proposed a facility for the coastal Encina Power Station in the city of Carlsbad that would initially produce 56,000 AF of water annually. The Water Authority is studying other potential desalination plants sites on the coastline. Initial studies prepared for the Water Authority suggest that seawater desalination could provide up to 15 percent of the County's water supply by 2020.

Groundwater Development and Conjunctive Use. Groundwater supplies in San Diego County represent an important element in the existing and future water supply for the County. Currently, local water districts develop approximately 24,000 acre-feet per year (AFY) of water supply from local groundwater sources. Private well owners within the County develop an additional unquantified amount of water supply.

Sufficient undeveloped groundwater supplies exist within the Water Authority's service area to help meet a portion of San Diego County's future water demand. Water Authority member agencies have identified projects that could increase groundwater production by an additional 35,000 AFY. In addition to these identified projects, the *2000 Urban Water Management Plan* and the Water Authority's *1997 San Diego County Water Authority Groundwater Report* note that the potential

exists for an even larger degree of groundwater supply development, primarily through three means:

- Groundwater extraction and disinfection projects
- Brackish groundwater recovery projects
- Groundwater recharge and recovery projects

Groundwater extraction and disinfection projects are applicable to groundwater aquifers that have sufficiently good quality of water so that the extracted groundwater requires minimal treatment. Because of the minimal treatment needs, such extraction and disinfection projects provide low-cost groundwater.

Brackish groundwater recovery projects are appropriate in groundwater basins that have concentrations of salinity that are in excess of potable water standards. The city of Oceanside and Sweetwater Authority currently operate groundwater desalination plants.

Groundwater recharge and recovery projects involve artificial recharge of groundwater basins with subsequent recovery. In addition to providing groundwater supply, such recharge/recovery projects also offer benefits of

- Providing local water storage
- Allowing for management of groundwater resources
- Potentially improving groundwater quality

As an example of future groundwater supply potential, the City of San Diego (the largest Water Authority member agency) identified that brackish groundwater recovery could be used to develop an additional 6,000-20,000 AFY of supply from key City aquifers. An additional 10,000-48,000 AFY of groundwater supply could be developed by groundwater recharge and recovery projects. (*Draft Water Resources Implementation Plan*, City of San Diego, 2004; *Long-Range Water Resources Plan*, City of San Diego, 2002).

Other Water Authority member agencies have identified a number of beneficial groundwater supply development projects to help meet future San Diego County water needs.

Overview of San Diego County Groundwater Resources. Groundwater in San Diego County occurs in several general classes of aquifers:

- alluvial aquifers,
- deep semi-consolidated or consolidated aquifers,
- fractured rock aquifers, and
- residuum.

Aquifers comprised of shallow alluvial stream sediments or alluvial fan deposits provide much of the current groundwater production yield within the Water Authority's service area. Alluvial aquifers will typically yield large quantities of water at rates sufficient for development of agricultural and municipal supply. Alluvial aquifers exist along portions of all major streams and rivers within the Water Authority's service area. Alluvial sediments can extend to a depth of nearly 200 feet in some of the aquifers. The larger and more productive alluvial aquifers within the Water Authority's service area include:

- Santa Margarita River (Lower Ysidora, Chappo, and Upper Ysidora basins)
- San Luis Rey River (Mission, Bonsall, Pala, and Pauma basins)
- San Dieguito River (San Dieguito, San Pasqual, and Santa Maria Valley basins)
- San Diego River (Mission Valley and Santee/El Monte basins)
- Sweetwater River (Lower Sweetwater and Middle Sweetwater basins)
- Tijuana River Basin (Lower Tijuana River Valley basin)

Groundwater quality within the alluvial aquifers is typically brackish near the coast, but groundwater quality typically improves with distance upstream. While alluvial groundwater basins can be quickly recharged by storm runoff, the porous nature of

the aquifers renders them susceptible to contamination by activities on the ground surface.

#### 4.4.1.2 *Water Quality*

A number of programs and initiatives are concurrently directed at the management of receiving waters and impacts to them. Regulatory programs have traditionally formed the first line approach to protecting water resources, but other planning efforts, especially those at the watershed level, have become increasingly relevant in the past few years. From a regulatory perspective, the most important plan affecting water quality in the San Diego Region is the Water Quality Control Plan for the San Diego Basin (Basin Plan), initially adopted by the San Diego Regional Board in 1975, and periodically updated since then. The purpose of the plan is to (1) designate beneficial uses of the Region's surface and ground waters, (2) designate water quality objectives for the reasonable protection of those uses, and (3) establish an implementation plan to achieve the objectives. Both State and federal law mandate the periodic review and update of Basin Plan water quality standards. A number of crucial programs and directives derive from or support the basic mandates of the Basin Plan. Several of these are described further below.

**Surface Water Quality.** Nonpoint source pollution, and urban runoff in particular, is widely recognized as a major contributor to receiving water quality impairment. While nonpoint source discharges have traditionally been addressed through programs such as the State's Nonpoint Source Control Program, the advent of urban stormwater permits in 1990 significantly changed the regulatory landscape by defining urban runoff flows from Municipal Separate Storm Sewer Systems (MS4s) as point source discharges. With some exceptions, this conferred the primary responsibility for managing urban runoff discharges to local municipalities. In July 1990, the San Diego Regional Water Quality Control Board issued the first San Diego Regional Municipal Stormwater Permit to the County of San Diego, the 18 incorporated cities in the Region, and the San Diego Unified Port District. The Permit was re-issued in February 2001, and the San Diego County Airport Authority added as a Copermittee shortly thereafter.

The Municipal Stormwater Permit lays out two types of planning and implementation programs directed at reducing discharges of pollutants from MS4s to the maximum extent practicable. The first, a Jurisdictional Urban Runoff Management Program (JURMP), is required of each individual Copermittee, but many JURMP activities are coordinated or implemented regionally. Additionally, each of the Copermittees within each of eight watershed management areas are responsible for collaboratively developing and implementing Watershed Urban Runoff Management Programs (WURMPs). In practice, JURMPs and WURMPs are distinct primarily at the planning level, and less so during program implementation. Building on and complementing the efforts of municipal stormwater managers, the City's Water Department developed Source Water Protection Guidelines for New Development in January 2004 to protect drinking water reservoirs from future development in portions of the San Diego County watersheds draining into them. These Guidelines help to provide additional protection of City Reservoirs by providing developers detailed information on a variety of site design, source control, and treatment Best Management Practices (BMPs).

Total Maximum Daily Loads (TMDLs) are also an important piece of the local regulatory landscape. Through 2002, there were 39 separate Clean Water Act section 303(d) listings in the San Diego Region corresponding to 35 unique pollutants and 109 separate waterbody-pollutant combinations. A primary vehicle for TMDL implementation will be the Municipal Stormwater Permit, but numerous pollutant sources outside the purview of those programs must also be addressed through this process. This implies a much greater need for coordination and cooperation in managing both point and nonpoint source pollutant discharges in the Region.

**Groundwater Quality.** The development of groundwater supplies is an important component of the water supply goals of the Region. The State of California Groundwater Management Act (AB 3030) provides that groundwater management can include (1) water quality improvement, (2) groundwater replenishment, (3) groundwater monitoring, (4) conjunctive use,

and (5) coordinating with land use planning agencies. While several Water Authority agencies have explored groundwater management opportunities under AB 3030, no formal groundwater management plans have yet been developed within San Diego County. The County of San Diego implements land use controls in groundwater-dependent areas outside the Water Authority's service area through its Groundwater Ordinance.

Strategies for managing both groundwater quality and supply must address a number of crucial and inter-related issues. While important opportunities exist within the County, development of groundwater resources depends on resolving a number of key challenges, such as jurisdictional and legal issues, data gaps and uncertainties, water quality degradation, water regulations, environmental impacts, and financing.

**Coastal and Ocean Water Quality.** The San Diego Region's coastal and ocean resources not only provide recreation, habitat, fisheries, and water supply, they are an important driver for the Region's economy. Each year, tens of millions of residents and tourists visit San Diego area beaches. Over the past several decades the recreational water quality of the Region's beaches and bays has been a major focus of coastal water quality regulation. Beaches and other recreational waters commonly become polluted from stormwater pollution, sewage spills, or natural sources such as soils, decaying vegetation, wildlife, and birds. In 1997, Assembly Bill 411 amended the California Health and Safety Code (Sections 115880-115915) to standardize and expand bacterial monitoring at public beaches. The County of San Diego Department of Environmental Health (DEH) samples affected recreational waters following sewage spills, and coordinates routine monitoring of recreational waters from more than 110 shoreline locations in conjunction with coastal cities and wastewater agencies. In spite of aggressive efforts to prevent recreational water contamination, there are currently 27 separate Clean Water Act section 303(d) listings for bacterial indicators in the San Diego Region. Underscoring the critical role of watershed sources to beach contamination, two bacteria Total Maximum Daily Loads are currently underway and expected to be

adopted within the next year; the first addresses inland surface waters (rivers and creeks) and coastal marine waters adjacent to open beaches, and the second enclosed bays and lagoons.

The San Diego coastline is also endowed with unique natural marine resources including the La Jolla Ecological Reserve and the San Diego Marine Life Refuge, both designated Areas of Special Biological Significance (ASBS). A La Jolla Shores Coastal Watershed Management Plan is currently under development to provide a blueprint for actions that will be taken locally to protect and improve the water quality of protected marine environments offshore of La Jolla Shores and to comply with California Ocean Plan discharge prohibitions for ASBS. The plan will build upon the City's Urban Runoff Management Plan and Scripps Institute of Oceanography's Stormwater Management Plan.

#### *4.4.1.3 Watershed Resources*

Several types of activity are important to the management, protection, and enhancement of the Region's watershed resources. In some instances, these are focused directly at the watershed level. But other more broadly focused efforts also provide crucial support for habitat and species preservation, as well as ensuring opportunities for the public to appreciate and enjoy these resources.

**Watershed Planning and Coordination.** The past decade has given rise to a number of efforts and plans that are focused exclusively on watershed-specific issues and concerns. This underscores a keen appreciation of the importance of addressing the unique issues that face our watersheds according to hydrological rather than jurisdictional boundaries. More importantly, the broad recognition of watersheds as functional units reflects the inherent limitations in approaching their protection exclusively through other existing planning forums. Watershed-based planning and coordination is addressed through many types of programs and plans. Table 4-2 below lists several of these, but is not intended as an exhaustive list.

**Table 4-2**  
**Examples of Watershed Planning and Coordination in the San Diego Region**

<b>Watershed / Region</b>	<b>Watershed Planning &amp; Coordination Groups</b>
<b>Regional</b>	- Regional Watershed Urban Runoff Management Program (WURMP) Workgroup
	- Watershed Protection Technical Advisory Committee (WPTAC)
<b>Santa Margarita</b>	- Santa Margarita Watershed Management Plan (Proposition 13 Grant)
	- Santa Margarita WURMP Workgroup
<b>San Luis Rey</b>	- The San Luis Rey Watershed Council
	- San Luis Rey WURMP Workgroup
<b>Carlsbad</b>	- Carlsbad Watershed Network (CWN)
	- Carlsbad WURMP Workgroup
<b>San Dieguito</b>	- San Dieguito River Watershed Stewardship Initiative Group & San Dieguito Watershed Technical Advisory Committee (TAC)
	- San Dieguito River Park
	- San Dieguito WURMP Workgroup
<b>Peñasquitos (including Mission Bay)</b>	- Peñasquitos Watershed Management Plan (Proposition 13 Grant)
	- Peñasquitos Watershed Urban Runoff Management Program (WURMP)
	- Mission Bay and La Jolla WURMP Workgroup
	- La Jolla Shores Coastal Watershed Management Plan
<b>San Diego River</b>	- The San Diego River Watershed Workgroup
	- San Diego River Watershed Forum
	- The 606 Studio's "Conceptual Plan"
	- San Diego River WURMP Workgroup
<b>San Diego Bay (Pueblo, Sweetwater, and Otay)</b>	- San Diego Bay WURMP Workgroup
	- Otay River Watershed Management Plan (ORWMP)
	- Otay River Special Area Management Plan (SAMP)
<b>Tijuana</b>	- Tijuana Watershed Management Plan (Proposition 13 Grant)
	- Tijuana WURMP Workgroup
	- Tijuana River Bi-national Watershed Advisory Council

The sheer number of entities on this list, as well as the inherent differences in the scope and content of each, illustrates the difficulty of providing effective coordination amongst and between different watershed groups. The diversity of efforts in the Region is encouraging in the level of commitment it demonstrates. Pooling the knowledge and resources of these groups through improved coordination would clearly benefit each in a number of areas such as increased competitiveness for grant funding, improved opportunities for public awareness and participation, and, most importantly, the ability to share

and learn from individual experiences. Another important benefit of increasing this coordination is the facilitation of consistency and integration with State and Federal priorities and standards, including TMDLs, the RWQCB Watershed Management Approach for the San Diego Region, and the nine elements of a watershed-based plan, as stipulated by U.S. Environmental Protection Agency for the Clean Water Act Section 319(h) funding.

**Resource Protection Programs.** San Diego County is known nationwide for the tremendous diversity of its plants and animals and the number of species that are considered rare or endangered. A study in the January 1997 issue of *Science* magazine listed the County as one of two in the United States that are considered “hot spots” for unique and unusual species. Though the California Environmental Quality Act (CEQA) requires reduction and mitigation of impacts from development projects, existing practices have often created small areas of open space that are disconnected from other habitat areas, and sometimes too small to support any significant populations of wildlife. Even though individual species have been listed as rare and endangered, the County, the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and property owners were hard pressed to determine the most appropriate way to protect them.

In 1992, the State of California enacted the Natural Communities Conservation Planning (NCCP) Act. This voluntary program allows the State to enter into planning agreements with landowners, local governments, and other stakeholders to prepare plans that identify the most important areas for a threatened or endangered species, and those not considered as important. NCCP plans may become the basis for a state permit to “take” endangered species in exchange for conserving their habitat. The Federal Government has a similar program under Section 10A of the Federal Endangered Species Act providing for the preparation of Habitat Conservation Plans (HCPs). In California, the Wildlife Agencies have worked to combine the NCCP program with the Federal HCP process and to provide for permits for listed species.

Local governments can take the lead in developing these plans and in doing so become the recipient of the State and Federal permits.

The NCCP is manifested locally as the Multiple Species Conservation Program (MSCP). The goal of the MSCP is to maintain and enhance biological diversity in the Region and maintain viable populations of endangered, threatened, and key sensitive species and their habitats. The MSCP is the result of many years of intense planning and review by a diverse group of private conservationists, developers and a number of public agencies. The overall effect of the MSCP is that it provides for large, connected preserve areas that address a number of species at the habitat level rather than species by species, and area-by-area. This creates a more efficient and effective preserve system as well as better protection for the rare, threatened and endangered species in the Region.

Another important tool for protecting watershed resources is the SAMP. A SAMP is a comprehensive plan that provides for natural resource protection and reasonable economic growth within geographic areas of special sensitivity. This comprehensive planning effort is to be used to assist the federal, state and local regulatory agencies with their decision making and permitting authority to protect aquatic resources. Approval of a SAMP by the United States Army Corps of Engineers will result in the issuance of General Permits under the Clean Water Act for projects within the project area. The County of San Diego has obtained Federal funding, and is working closely with the cities of Chula Vista, Imperial Beach, Coronado, National City, and San Diego for the development of a SAMP in the Otay River watershed. This SAMP will identify baseline conditions of the watershed including water quality and the extent of wetlands that can be used in other programs.

Another key element of the Region's efforts to protect and sustain vital watershed resources is the work of the Southern California Wetlands Recovery Project (SCWRP). SCWRP is a partnership of public agencies working cooperatively to acquire, restore, and enhance coastal wetlands and watersheds between Point Conception and the international border with Mexico. The goal

of the Southern California Wetlands Recovery Project is to accelerate the pace, the extent, and the effectiveness of coastal wetland restoration through developing and implementing a regional prioritization plan for the acquisition, restoration, and enhancement of Southern California's coastal wetlands and watersheds. Ultimately, the SCWRP's efforts will result in a long-term increase in the quantity and quality of the Region's wetlands. The San Diego County Task Force, a subgroup of the Southern California Wetlands Recovery Project, promotes wetlands planning and project implementation from the Tijuana River watershed in Baja California to the Santa Margarita watershed encompassing the U.S. Marine Corps Base Camp Pendleton. The task force serves as a forum to advance wetlands restoration science in project design, watershed planning and public policy. In addition, the task force fosters community-based organization education and participation in wetlands related activities and projects throughout San Diego County and Baja California.

**Recreation and Public Access.** The City of San Diego provides a number of park and recreation opportunities to its citizens and visitors. The City has three regional parks, five open space parks, beaches on about 39,000 acres of property. The City also has a lakes program offering fishing, and water contact sports to City and County residents and visitors at its nine surface water reservoirs.

This section will be expanded in the adopted IRWM Plan.

#### 4.4.1.4 *Land Use and Infrastructure*

**Land Use Planning.** Sections 65000 et seq. of the California Government Code give local governments the authority and the responsibility to exercise local land use planning functions, including those which apply to general plans, subdivisions, and zoning. Because they ultimately control the types and intensities of particular activities that may be allowed within specified geographic areas, land use decisions play a critical role in addressing point and non-point sources of pollution. Cities and counties have traditionally exercised their land use planning authorities independently, often with little

consideration of the chemical, biological, and physical processes which govern the generation, transport, and fate of contaminants and stressors at watershed or other scales (air basins, etc.). As a result, the land use policies of individual municipalities continue to have significant potential for affecting water quality in areas beyond their jurisdictional boundaries. The completed IRWM Plan will emphasize the inherent limitations of pursuing land use planning policies that fail to consider decisions affecting upstream and/or downstream uses within the same basin, and explore options for better addressing these issues at a regional planning level.

**Flood Management.** The California State Legislature passed the Flood Control District Act in 1966, and amended it in 1985. The Flood Control District Act created the San Diego County Flood Control District, and authorized it to protect the land, properties, facilities, and people within the unincorporated areas of the County from damage caused by storm and floodwaters. Among its responsibilities, the County's Flood Control program prepares Flood Control Master Plans which detail the major drainage features and flow rates. Staff also maintains countywide floodplain and floodway maps and hydrology and hydraulic studies for major rivers in the County.

Although the County does not implement its flood management responsibilities within local cities, it possesses significant regional responsibilities. To this end, the County is responsible for developing the San Diego County Hydrology Manual (last updated in June 2003). Flood management hydrology deals with estimating flow peaks, volumes, and time distributions of storm runoff. The prediction of these characteristics is fundamental to the design of stormwater management facilities. The Hydrology Manual provides a uniform procedure for flood and stormwater analysis within San Diego County. It also provides a guide for policies and procedures to attain reasonable standardization of hydrology studies throughout the county, but does not set policy. Each city has jurisdiction over projects within its area and may have policies and procedures differing from those in the Manual.



The County is also responsible for the development of the San Diego County Drainage Design Manual (July 2005). The Drainage Design Manual establishes design standards and procedures for stormwater drainage and flood management facilities in San Diego County. These design standards and procedures provide guidance to local jurisdictions, design engineers, developers, contractors, and others in the selection, design, construction, and maintenance of stormwater drainage and flood management facilities. Each city has jurisdiction over projects within its area and may have policies and procedures differing from those in the Manual.

Flood management issues will be an important emphasis in the IRWM Plan because of their inseparability from a variety of other issues including stormwater quality, groundwater recharge, invasive species control, and habitat restoration.

**Transportation Management.** Streets, roads, freeways, and the automobiles they serve are widely recognized as major contributors of pollutants such as metals, PAHs, and oil and grease to receiving waters. Development of the Region's transportation infrastructure presents important questions regarding how best to balance our transportation needs with the protection of habitat and open space, and in limiting the generation of pollutants that eventually impact those areas. The population of the San Diego Region is projected to increase from approximately 2.9 million people today to about 3.9 million in the year 2020. As a result, the number of forecasted vehicle trips is projected to increase by 34 percent from current levels.

Several plans and standards address the management of traffic congestion. At the regional level, the Regional Transportation Plan serves as a blueprint to address the mobility challenges created by our growing population and employment. It contains an integrated set of public policies, strategies, and investments to maintain, manage, and improve the transportation system in the San Diego Region. The San Diego Association of Governments (SANDAG) approved the 2030 Regional Transportation Plan on March 28, 2003.

The California Department of Transportation (Caltrans) is responsible for planning, constructing and maintaining the State highway network. At the local level, the County of San Diego and eighteen other municipalities are responsible for planning, constructing and maintaining transportation networks within their respective areas of jurisdiction. To evaluate potential traffic impacts that may result from specific projects, traffic impact studies are also often required by these jurisdictions. The responsible agency for final approval of a project's traffic study is the agency that has discretionary approval of the project. For most projects, this is the local jurisdiction; however, coordination with other affected agencies such as SANDAG or Caltrans is often necessary.

State Proposition 111, passed by voters in 1990, established a requirement that urbanized areas prepare and regularly update a Congestion Management Program (CMP); the CMP is part of the SANDAG Regional Transportation Plan. The purpose of the CMP is to monitor the performance of the Region's transportation system, develop programs to address near-term and long-term congestion, and better integrate transportation and land use planning. The CMP has five major components, including a Land Use Analysis Program that requires a review of large projects that generate 2,400 or more average daily trips or 200 or more peak hour trips.

Other programs and plans such as jurisdictional General Plans and road standards have relevance to specific aspects of transportation management. Understanding the relationships of these processes to water quality and watershed health will be a major emphasis of the San Diego IRWM Plan.

**Wastewater Management.** All but a fraction of the municipal and industrial wastewater generated within the San Diego Region is discharged into municipal sewer collection systems. The operation of municipal and industrial wastewater collection, treatment, reuse, and disposal facilities is the responsibility of over 30 individual municipalities and wastewater districts within the San Diego Region.

A number of the San Diego Region wastewater agencies have joined together to develop a series of regional wastewater collection and treatment networks. Chief among these networks is the San Diego Metropolitan Sewerage System (Metro System). The Metro System collects, treats, reuses, and disposes of wastewater from the City of San Diego and 15 surrounding municipalities and wastewater districts, and serves a population of approximately 2.2 million within a 450 square mile service area. The Metro System features three wastewater treatment plants, two of which are water recycling plants. Excess Metro System treated wastewater flows (over and above recycled water demands) are discharged to the ocean via deep-water ocean outfalls offshore from Point Loma and international border.

Municipalities and wastewater agencies have also joined together to develop three regional wastewater collection and treatment networks in the northern portion of the San Diego Region. A wastewater collection and treatment network based around the City of Oceanside ocean outfall provides wastewater disposal for Oceanside and three other North San Diego County wastewater agencies. The Encina Wastewater Authority operates a regional wastewater collection, treatment, and disposal system that serves a population of approximately 250,000 and collects wastewater from 6 municipalities and districts near Carlsbad. The Escondido/San Elijo Joint Powers Authority wastewater system serves a population of approximately 250,000 within the Escondido and Solana Beach corridor.

In addition to the four primary wastewater collection networks within the San Diego Region, over a dozen individual inland wastewater agencies collect and wastewater in smaller systems. Overall, San Diego Region wastewater agencies operate nearly 30 wastewater treatment facilities. A total of 12 of these wastewater treatment facilities provide tertiary treatment for water recycling. Tertiary treatment is proposed at an additional 10 of these plants.

The San Diego Regional Water Quality Control Board regulates San Diego Region wastewater collection, treatment, and disposal facilities and operations.

Wastewater discharge permits issued by the Regional Board require wastewater agencies to implement adequate wastewater collection, treatment, and disposal practices to protect water quality and beneficial uses. As a result of this regulation, wastewater management operations in the San Diego Region are normally consistent with management strategies for water supply, water quality, watershed protection, recreation, habitat enhancement, and land use. Noncompliance with Regional Board wastewater requirements (such as sewage spills or releases of partially treated water) occasionally occur within the San Diego Region. Unauthorized spills or releases can result in temporary impacts to water quality, habitat, recreation, and other beneficial uses. To minimize the potential for sewer spills and to mitigate against impacts, the Regional Board requires each wastewater agency to develop and implement a sewer spill prevention and response plan.

**Growth Management.** As discussed for transportation management, a rapidly increasing regional population presents other problems of importance to environmental and water quality. The details of how the Region approaches issues such as the conflict between housing development and open space preservation are crucial to many other water-related issues. Balancing these and other potential conflicts is a complex, difficult, and extremely important process. Central to these efforts is the SANDAG Regional Comprehensive Plan (RCP).

In July 2004, SANDAG adopted the RCP for the San Diego Region. The RCP serves as the long-term planning framework for the San Diego Region. It provides a broad context in which local and regional decisions can be made that move the Region toward a sustainable future – a future with more choices and opportunities for all residents of the Region. The RCP integrates local land use and transportation decisions, and focuses attention on where and how we want to grow, providing a vital alternative to where we could end up if we continue with business as usual. While not a water management strategy per se, the RCP does contain a Healthy Environment section that addresses issues similar to those that will be addressed in the IRWM Plan. Likewise the RCP contains separate sections on transportation, housing, and economic

prosperity. Close coordination and involvement with SANDAG will be necessary to explore the mutually supportive objectives of each plan.

#### 4.4.1.5 Air Quality

In recent years, atmospheric, or aerial, deposition has been increasingly recognized as a potentially significant non-point source of water pollution. This includes both wet deposition of chemicals and nutrients through precipitation and the dry deposition of particles or gases. In both cases, water supplies and receiving waters can be impacted either directly or through the runoff of pollutants deposited on other surfaces (streets, roads, parking lots, rooftops, etc.). While recent studies show that aerial deposition is often critically linked to water quality, the planning and regulatory frameworks of these two areas lacking significant linkages.

Air quality planning is a complex federal, state, and local undertaking, with no individual agency having regulatory authority over all sources of air pollution. The two primary statutes governing air quality regulation in California are the federal Clean Air Act as amended in 1990, and the California Health and Safety Code (Division 26, California Air Pollution Control Laws). Under State law, the responsibility for regulating air quality in California is divided between the State Air Resources Board (ARB) and 35 local air districts, including the San Diego County Air Pollution Control District (APCD). ARB is responsible for controlling mobile sources (on- and off-road vehicles) and consumer products (such as household, personal care, and automotive service products). The APCD has primary responsibility for controlling air pollution from non-vehicular (stationary) sources in San Diego County, such as factories, power plants, gas stations, dry cleaners, landfills, stationary internal combustion engines, solvents, and coatings.

While the legal authority to control different pollution sources is separate, local districts are responsible for aggregating these measures into a plan to achieve standards and meet related federal and state program requirements. To this end, the APCD has developed the San Diego portion of the State Implementation Plan (SIP) to address national ambient air standards and the San Diego Regional Air Quality Strategy (RAQS) to facilitate consistency with state standards. The stationary source

control measures contained in the SIP and RAQS are developed by the APCD into regulations through a formal rulemaking process. These rules set limits on the amount of air contaminant emissions from various types of sources and may require specific control technologies. Following rule adoption, a permit system is used to impose requirements on stationary sources and to ensure compliance with regulations through specific operating conditions for individual sources.

The efforts of the APCD are the core of air quality planning in San Diego County. Potential linkages between these efforts and water planning will be explored in the IRWM Plan.

#### *4.4.1.6 Economic Sustainability*

San Diego's economy has undergone a remarkable transformation over the past decade. The severe recession in the first half of the 1990s was the longest and deepest of the past 60 years. From an economy largely dominated by defense and military expenditures, San Diego industries transformed into a diversified mix of high-technology commercial endeavors. Emerging growth areas include telecommunications, electronics, computers, software, and biotechnology. Manufacturing remains the largest economic sector for local dollars generated, with electronics, computers and industrial machinery, aerospace and shipbuilding, and instruments leading local production. Specific products made and exported from San Diego, in addition to televisions, include other radio and broadcasting/communications equipment, cellular telephones, semiconductors, circuit boards, computers, and scientific, medical, and other measuring instruments. Despite past cutbacks and downsizing, the military's presence and commitment to San Diego remains, if anything, greater than ever as the Navy's principal location for West Coast and Pacific Ocean operations. San Diego is also home to the only few remaining shipyards on the West Coast able to build and repair large Navy ships. The multi-billion dollar visitor industry has also been an important sector of economic power and stability. The visitor industry is San Diego's third largest economic sector, behind only manufacturing and military/defense.

SANDAG evaluates, monitors, and reports on issues affecting the fiscal stability and economic prosperity of the Region. Focus areas include employment cluster analysis, the economic relationship with southern California and Baja California, cross-border development strategies, and the evaluation of the economic prosperity effects of land use decisions and development. A number of other organizations also play a key role in monitoring and evaluating economic conditions in the Region. These include the San Diego Regional Economic Development Corporation, the Greater San Diego Chamber of Commerce, and the City's and County's regional economic development efforts. Ensuring that economic issues are adequately considered will be a key focus of integrated regional water planning. From this standpoint, key economic issues for consideration include (1) ensuring and sustaining adequate funding for Plan and project implementation, (2) ensuring the cost-effectiveness of proposed programs, activities, and projects, (3) evaluating potential impacts of these activities to the Region's economy, and (4) ensuring the participation of and benefits to disadvantaged communities.

#### 4.4.1.7 *Other Issues*

**Environmental Education.** Although education is a primary component of almost all the programs and strategies discussed in this document, it is called out as separate issue for IRWM planning because of its central role and because of the special challenges that educators face in finding ways to effectively coordinate their efforts. Although not unique in its aim, one avenue of coordinating educational efforts has been the Project Clean Water Education TAC. The Education TAC coordinates activities between non-profit organizations, private institutions, and governmental agencies providing environmental and water quality education. TAC meetings provide a forum for educators, trainers, and public information officers to collaborate, share methods and materials, and seek policy level support and direction. The 21 Municipal Stormwater Copermittees also have a workgroup that addresses the regional coordination of their outreach efforts.

Some of the issues that have been raised in these forums, but that are relevant as a whole to other types of water and environmental education, include the following:

- Achieving and measuring outreach effectiveness;
- Developing and delivering resonant messages;
- Avoiding overloading target audiences with information (too many programs, too many messages, overlapping messages, etc.);
- Developing the expertise necessary to design and implement effective programs;
- Cost-efficiently and effectively delivering outreach messages (methods of delivery, etc.).

Many of these issues have also been explored in detail for the past two years at the Project Clean Water Annual Summits. There seems to be an increasing consensus that education will require significantly more coordination and strategic planning than in the past. As such, education will be an emphasis of this effort.

**Agriculture.** The total reported agricultural value for 2003 was \$1.35 billion, the highest ever reported for the County. Agriculture pays the highest rate in California, even with the agricultural discount. They receive a small discount in exchange for their agreement to be the first to be cut off in the event of a water shortage. In decreasing order of total value, this includes the following types of operations:

- Nursery and flower crops
- Fruit and nut crops
- Vegetable crops
- Livestock and poultry products
- Livestock and poultry
- Field crops
- Apiary
- Specialty crops

Agriculture is one of several industries that have been identified as contributing to nonpoint source pollution. Types of activities typically associated with nonpoint source pollution include grazing, plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting. The major agricultural pollutants resulting from these activities are sediment, nutrients, pathogens, pesticides, and salts. Current regulations provide a flexible, tiered approach for minimizing pollution from agricultural sources through the use of BMPs. This begins with voluntary measures and moves toward stringent and strictly regulated criteria. Strict and inflexible mandatory regulations can generally be avoided through early voluntary compliance. Since 2001, some agricultural operations have been subject to the requirements of municipal stormwater programs, which are required to regulate the activities of nurseries and greenhouses. In some instances, agricultural activities can present additional watershed concerns because of their potential to damage habitat and stream channels.

Agricultural operations are also water-intensive. In recent years, agriculture has accounted for 10 to 20 percent of Water Authority water demand. In fact, the Water Authority is the largest consumer of agricultural water within the Metropolitan Water District's service area. Agricultural water use in the County is concentrated mainly in the North County. Agricultural operations, and the water-related issues associated with them, will be characterized in greater detail in the IRWM Plan.

**Public Health.** Public and environmental health issues are often inseparable. For example, as discussed above, watershed sources of bacterial contamination have real and pronounced effects when recreational users of our beaches and bays are exposed to disease-causing agents. While generally within the regulatory purview of State and Federal law, a variety of public health issues and mandates are carried out locally, most often by the County DEH. For instance, DEH permits and inspects businesses preparing and serving food. While this program is ostensibly directed at basic public health protection, it incidentally addresses environmental pollution issues such as the discharge of grease to the storm drain system. In the past year, widespread concerns about

the spread of West Nile Virus (WNV) have also significantly expanded the scope of activities conducted by DEH vector surveillance staff. Risks of mosquito-borne illness have also been the subject of considerable discussion not only because of WNV concerns, but also with respect to stormwater program requirements for Standard Urban Stormwater Mitigation Plans (SUSMPs), which require that developers detain and treat urban flows prior to their release from project sites. Balancing the need for the treatment of runoff with attendant public health risks resulting from standing water has been, and continues to be controversial. These few examples illustrate the importance of giving adequate consideration to public health during integrated water planning.

**Tribal Issues.** San Diego County has 18 Indian reservations, more than any other county in the United States. Of the 20,000 Native Americans who make up the four tribal groups that live in San Diego County, only a small percentage live on reservation land. While the reservations are comparatively small, with total land holdings of just over 124,000 acres, they are important to integrated regional water planning. San Diego County has the largest number of tribes with gaming compacts with the State at 14. Of the potential water-related issues associated with the reservations, the most important are those associated with the development and operation of casinos.

Nine tribes currently have gaming operations, ranging from the large resorts at Barona, Pala, Sycuan and Harrah's Rincon to the 30-slot arcade run by the La Jolla Band of Luiseño Indians in Pauma Valley. As a group, these tribes employ more than 13,000 workers and have an annual gross revenue of an estimated \$1.5 billion. In the next few years, at least six new or expanded casinos and related facilities will make their way through the planning stages. While essential to the economic prosperity of Native Americans, casinos also bring with them increases in water demand, potential environmental impacts from development and congestion, and a variety of issues associated with waste management and disposal.

**Fire Management.** In October 2003, a small brush fire near Ramona began a devastating journey that within a week changed the lives of thousands of property owners and hundreds of thousands of residents in the County. Combined with two other major fires in the County, Firestorm 2003 was the largest in California history. In San Diego County, more than 390,000 acres were burned, and more than 3,000 residential, commercial, and industrial units damaged or destroyed. During and after the firestorm, a number of water quality and environmental issues were posed with regard to the Region's water supply reservoirs and receiving waters. Among these were the disposal of household hazardous waste from burned structures, water quality impacts of burn ash and debris, impacts of increased erosion and sedimentation to receiving waters, and increases in flooding, mud flows, and debris flows. It is currently unknown whether many of these impacts are short-lived or will be sustained for longer periods, but Firestorm 2003 made it very clear that fire management is of great importance to the protection of our local water resources.

#### **4.4.2 Integration of Strategies**

##### **4.4.2.1 Integration with Statewide Strategies**

The RWMG understands that this component of the IRWM Plan is important and must be addressed completely. The following elements will be included in the adopted IRWM Plan:

- Integration of Plan with statewide strategies
- Integration on Plan with regional strategies
- Integration of Plan with state programs
- Integration with regional programs

##### **4.4.2.2 Integration with La Jolla Shores Coastal Watershed Management Plan**

The La Jolla Shores Coastal Watershed Management Plan is intended to be the blueprint for actions that will be taken locally to protect and improve the water quality of protected marine environments offshore of La Jolla Shores and comply with the California Ocean Plan discharge prohibition of Areas of Special Biological

Significance. A collaborative watershed approach will be used to institute the most effective and efficient strategies to address non-point source pollution within this small urban watershed. The watershed is located in San Diego County and covers areas of the San Diego community of La Jolla and the Scripps Institute of Oceanography. The Areas of Special Biological Significance included in the Plan are No. 29, the San Diego - La Jolla Ecological Reserve, and No. 30, the San Diego Marine Life Refuge. The plan will build upon the City's Urban Runoff Management Plan and Scripps Institute of Oceanography's Stormwater Management Plan. The Critical Coastal Area planning process will expand beyond the watershed assessment and the action plan to provide marine ecosystem monitoring program, an adaptive watershed monitoring plan and an information system template that integrates land and ocean data. The RWMG will coordinate with the La Jolla Shores Coastal Watershed Management group to develop consistency between the SDIRWM Plan and local watershed planning efforts.

## 5 IMPACTS AND BENEFITS

The RWMG understands that the benefits and impacts of the implementation of this Plan are important and complex. The adopted IRWM Plan will describe the evaluation and assessment process by which the Plan will balance the impacts and benefits. The following text will provide the basis of the future analysis.

- The benefits of the IRWM Plan begin even before implementation. The Plan describes the RWMG's approach of bringing together all the parties and stakeholders in a single forum for regional planning purposes.
- Tangible benefits can be measured and against potential impacts, and completing CEQA and the public comment period leads to the most consistent evaluation of project impacts and benefits. Impacts and benefits to water quality, water quantity, and habitat can be directly measured.
- Impacts may include transportation and other land use constraints once preservation or restoration projects have been implemented, and temporary air and water quality impacts.

## 6 STAKEHOLDER INVOLVEMENT

The long-term success of an integrated regional planning effort ultimately depends on the degree to which agencies and stakeholders can effectively be brought together toward the identification of common objectives and the development and implementation of programs and strategies to achieve them. To that end, establishing an inclusive process that incorporates stakeholder input in the up front planning stages is paramount. Early involvement of key players and affected stakeholders has been a hallmark of the San Diego IRWM planning process, and will remain an on-going priority in future stages. Stakeholder involvement to date has included a broad cross-section of regulatory agencies, local jurisdictions, utilities, academic institutions, non-governmental organizations (NGOs), special interest groups, and the interested public.

### 6.1 Initial Stakeholder Coordination

The initial focus of stakeholder coordination has been through Project Clean Water, a program initiated by the County of San Diego Board of Supervisors in July 2000 to provide a broad and inclusive forum for exploring water quality issues of regional significance. Much of the focus of Project Clean Water during its first five years has been on establishing a visible forum to discuss issues of shared concern, to find consensus solutions to priority problems, and to characterize baseline conditions in the Region's watersheds. To that end, more than 750 people representing various interests throughout the San Diego Region have participated in Project Clean Water activities either through attending meetings or by receiving and responding to email updates. A focal point of stakeholder participation has been the annual Clean Water Summits, held in June of 2002 and 2003, and in July of 2004 and 2005. Each year, approximately 250 stakeholders participate in the validation and fine-tuning of the priorities and directions of Project Clean Water working bodies. The Project Clean Water web site ([www.projectcleanwater.org](http://www.projectcleanwater.org)) also provides a forum for disseminating information on a variety of watershed and water quality topics. Since the site was initiated in January 2001, more than 150,000 visits have been recorded.

A Policy Advisory Committee, or PAC, oversees and integrates the efforts of all other Project Clean Water working bodies. The PAC, which is co-chaired by County Supervisors Greg Cox and Pam Slater-Price, meets twice per year. PAC meetings provide an opportunity for stakeholders and working bodies to provide input to and receive direction

from policy makers. Three Technical Advisory Committees, or TACs, also enable participants to explore issues and concerns within focused subject areas. A Legislation and Regulation TAC explores issues related to regulatory programs and proposed legislation. An Education TAC coordinates activities between organizations and groups that provide environmental and water quality education. A WPTAC combines the previously independent efforts of the Science & Technology TAC and the Comprehensive Planning TAC to more closely focus on the broad range of issues affecting the Region's watersheds. The initial emphasis of the WPTAC has been to establish an effective forum for coordinating the many types of planning, implementation, and assessment activities occurring in the Region's watersheds.

Since August 2004, the WPTAC has provided the primary means of stakeholder coordination during the initial stages of IRWM Plan development and implementation project solicitation. At the August 25, 2004 WPTAC meeting, the Water Authority, the County, and the City announced that they intended to collaborate on the development of an IRWM Plan. At that time meeting participants agreed that the WPTAC should be used keep interested stakeholders updated on IRWM plan development, and to provide them a venue to apply for implementation project funding. Leveraging the WPTAC was a key decision toward effectively channeling stakeholder input since the WPTAC distribution currently reaches over 350 individuals representing well over 100 agencies and organizations.

On October 13, 2004 the WPTAC discussed fifteen preliminary Regional Objectives for the IRWMP, which were subsequently combined and massaged into the five regional objectives by the TAC participants. During this meeting a preliminary project proposal form was also discussed for development and distribution to the TAC participants with a request to have initial project proposals submitted within 30-days in order to provide enough time to compile the proposals for discussion at the December 8th TAC meeting.

The focus of the December 8, 2004 WPTAC meeting was on providing an overview of the Proposition 50 Grant requirements and the process by which the San Diego Region was proposing to address them. The County also presented an initial project list containing the 63 projects proposal he had received to date and indicated that Water Authority was preparing an additional list of member agency proposals that will be integrated once it is

completed. The stakeholders were asked to review the project list to ensure the information was correct and to help identify opportunities for additional collaboration, which would be the focus of discussion at the February 4, 2005 WPTAC meeting. The goal is to have any additional collaboration determined and a final list of projects developed by the end of February, which will then need to be reviewed by some sort of technical committee to help determine high-priority projects for inclusion in the application package.

By the February 4, 2005 meeting, 82 individual project proposals had been submitted for consideration. The submitted proposals represented efforts from six cities and the county (42 projects), seven water agencies (11 projects), and 16 NGOs (29 projects), and covered all of the major hydrologic units within the Region with the exception of the San Juan HU. During the stakeholder review of these proposals three important observations were made or reinforced. First, several of the proponents should be asked to coordinate with each other and re-submit a composite project based on geographic proximity and emphasis of their efforts. Second, more supporting information required as part of the Proposition 50 grant needed to be submitted by each proponent. Finally, a review panel with appropriate technical backgrounds should be formed to help review and evaluate these candidate projects. The County also presented for review and comment a draft set of project selection criteria that the RWMG had been developing that will be used to evaluate the project proposals to help determine which are of highest priority. The final set of selection criteria are targeted for distribution to the stakeholders by the end of February.

## 6.2 Implementation Project Selection

**IRWM Technical Review Committee (TRC).** By the March 3, 2005 WPTAC meeting additional collaboration and integration of some projects had been requested; a more comprehensive project application form was developed and distributed; and a TRC comprised of the RWMG, academia, and non-profit groups was in the process of being formed. Project proponents were required to fill out the revised project application form and resubmit it by March 25, 2005 to have the project remain a candidate for submittal as part of the San Diego Region's IRWM Application Package. In April, the resubmitted proposals will be reviewed by the TRC and a set of projects will be selected for inclusion in the Proposition 50 Grant application package. Revisions to selected projects may be requested to show better integration and consistency with the IRWMP.

By April, 43 proposals had been resubmitted for further consideration. The proposals were initially reviewed for completeness by the RWMG and then made available to the TRC for review and evaluation. The TRC was comprised of:

Vickie Driver	San Diego County Water Authority
Paul Gerbert	San Diego County Water Authority
Bob Collins	City of San Diego Water Department (WPTAC Co-chair)
Jeff Pasek	City of San Diego Water Department
Jon Van Ryhn	County of San Diego
Trish Boaz	County of San Diego
Rob Hutsel	San Diego River Park Foundation (WPTAC Co-chair)
Judy Mitchell	Mission Resource Conservation District
Dr. Richard Wright	San Diego State University
Dr. Eric Terrill	Scripps Institute of Oceanography

The TRC further refined the set of selection criteria to evaluate each project in relation to the five Regional Objectives, the State priorities, and the program preferences identified within the Proposition 50 Guidelines and Project Submittal Package information. Each TRC participant reviewed and scored the project proposals, which were then consolidated and summarized to provide an initial relative ranking of each project. To avoid comparing the benefits and values of vastly different project types (e.g., those of a water supply project with those of a habitat acquisition project), the proposals were divided into six categories:

- Regional Facilitation
- Local Supply
- Infrastructure
- Water Quality
- Land Acquisition
- Restoration

Smaller working groups of TRC members were formed to further evaluate the projects within each category to develop preliminary rankings. The top projects within each

category were maintained for further evaluation and potential inclusion in the Proposition 50 Grant application package. On completion of this process, 23 projects were selected for inclusion in the final application. Several of these represented a consolidation of previously independent projects to take advantage of economies of scale, similarities in subject matter, and mutually supportive objectives.

### **6.3 Future Outreach to Stakeholders (including Disadvantaged Communities)**

Continuing and expanding the outreach efforts within the San Diego Region are essential to the successful maintenance, management, and implementation of IRWM Plan objectives. The existing outreach program utilizing the WPTAC will continue to remain at the core, with additional efforts focused on engaging a broad active membership to promote a diversity of approaches to issues and to better understand local priorities. This inclusive approach is to maintain a coordinated, balanced process as regional issues and priorities evolve over time. Important groups to keep engaged in the process include the existing RWMG, cities, water districts, resource and regulatory agencies, federal and State land managers, SANDAG, state and local conservancies, watershed groups, environmental groups, and private industry. Each of these groups may chose to participate on an individual basis or identify a representative responsible for ensuring the groups concerns are addressed and disseminating meeting information back to the group, much the way that the Water Authority operates on behalf of its member agencies or that the San Diego River Park Foundation brings together the NGOs in the watershed. The cross-section of these entities will provide the necessary dynamic to continually evaluate and evolve the regional objectives; conceptualize projects and programs; prioritize projects and programs for development and implementation; coordinate and collaborate on regulatory permitting; develop partnerships to obtain funding; and develop stakeholder support.

In addition to the outreach efforts outlined for the NGOs, local agencies, and quasi-governmental organizations, the RWMG will focus on engaging representatives disadvantaged communities to determine the needs to those communities related to the IRWM objectives and then integrate them into the project and program development process. Disadvantaged communities are defined as those with less than the \$37,994 Median Household Income (MHI) (80% of Statewide MHI). The Census 2000 data provided



by SANDAG, shown on Table 6-1, lists the communities that qualify as “disadvantaged” using the state guidelines.

**Table 6-1  
Disadvantaged Communities in the San Diego Region**

<b>Community</b>	<b>MHI</b>
City of El Cajon	\$35,530
City of Imperial Beach	\$35,950
City of National City	\$29,980
Mountain Empire County CPA	\$35,923
North Mountain County CPA	\$33,620
Pendleton-DeLuz County CPA	\$32,816
Bostonia County CPA	\$37,303
Barrio Logan CPA	\$20,605
Centre City CPA	\$22,888
City Heights CPA	\$23,682
College Area CPA	\$33,534
Eastern Area CPA	\$36,294
Encanto CPA	\$34,349
Greater Golden Hill CPA	\$30,478
Greater North Park CPA	\$31,890
Harbor CPA	\$5,000
Lindbergh Field CPA	\$31,516
Midway CPA	\$28,503
Mission Bay Park CPA	\$31,917
Normal Heights CPA	\$30,804
Ocean Beach CPA	\$36,804
Old San Diego CPA	\$27,384
San Ysidro CPA	\$26,772
Southeastern San Diego CPA	\$23,554

## 7 COORDINATION

### 7.1 Process for Coordination

The RWMG will identify the federal, state, and local agencies that have regulatory oversight of the plans to be implemented by the Plan. The RWMG will also coordinate with the stakeholders who are affected by the Plan. Coordination with the general public and planning agencies will also occur. This discussion will be expanded in the adopted IRWM Plan. Most of these agencies have already been identified and their roles defined by projects that have been developed by the Region's stakeholders.

### 7.2 Relation to Local Planning

The RWMG understands and embraces the importance of relating the adopted IRWM Plan to local planning. The coordination will be extensive and well-defined. As an example of this effort, the following table shows an example of the local plans and how they relate to the water management strategies is provided below.

**Table 8-1  
Matrix of San Diego IRWMP Planning Documents and Water Management Strategies**

Planning Document	Lead Agency	Ecosystem restoration *	Environmental and habitat protection and improvement *	Water supply reliability *	Flood management *	Groundwater management *	Recreation and public access *	Storm water capture and management *	Water conservation *	Water quality protection and improvement *	Water recycling *	Wetlands enhancement and creation *	Conjunctive use	Desalination	Imported water	Land use planning	NPS pollution control	Surface storage	Watershed planning	Water and wastewater treatment	Water transfers
Carlsbad Watershed Urban Runoff Management Plan	City of Carlsbad							X		X						X	X		X		
Groundwater Report	San Diego County Water Authority					X					X		X								X
Mission Bay and La Jolla Watersheds Urban Runoff Management Plan	City of San Diego							X		X						X	X		X		
Multiple Species Conservation Program (MSCP) Plan [South County Area]	City and County of San Diego	X	X				X					X									
Multiple Species Conservation Program (MSCP): City of San Diego Subarea Plan	City of San Diego	X	X				X			X		X				X					
Peñasquitos Watershed Urban Runoff Management Plan	City of San Diego							X		X						X	X		X		
Regional Comprehensive Plan for the San Diego Region	SANDAG		X	X						X						X					
Regional Water Facilities Master Plan	San Diego County Water Authority			X		X			X		X		X	X	X			X		X	X
San Diego Bay Watershed Urban Runoff Management Plan	Port of San Diego							X		X						X	X		X		
San Diego River Watershed Urban Runoff Management Plan	City of San Diego							X		X						X	X		X		
San Dieguito River Watershed Urban Runoff Management Plan	City of San Diego							X		X						X	X		X		
San Luis Rey River Watershed Urban Runoff Management Plan	City of Oceanside							X		X						X	X		X		
Santa Margarita Watershed Urban Runoff Management Plan	County of San Diego							X		X						X	X		X		
Strategic Plan (2005-2010)	County of San Diego		X				X			X						X					
Tijuana River Watershed Urban Runoff Management Plan	City of Imperial Beach							X		X						X	X		X		
Urban Water Management Plan (2000)	San Diego County Water Authority			X		X			X		X		X	X	X			X		X	X



## 8 PLAN PERFORMANCE AND ASSESSMENT

### 8.1 Technical Analysis and Plan Performance

The methods and analyses that were used to develop the Plan will be discussed in the adopted IRWM Plan. This discussion will include how plan performance will be evaluated and the adaptive management actions to be taken based on performance data.

The adopted IRWM Plan will discuss specific measurements performance and performance evaluation, including, plan implementation, project implementation, and meaningful steps toward integration .

### 8.2 Data Management

Thirty-four separate water management strategies have been identified for consideration during the San Diego IRWM Plan development. As such, an unprecedented diversity of data and information types will be required to support this effort. Examples of data types include water resources, water quality, ecological and habitat resources, hydraulics and hydrology data, and land use and planning information. Each of these categories can include a variety of data owners including agencies, municipalities, research institutions, consulting firms, non-profit organizations, and citizen monitoring coalitions.

#### Data Management Strategy

A Regional Watershed Data and Information System will be developed to provide a centralized point of access to stakeholders, agencies, and the public. Proposition 50 implementation project funding is currently being requested for the development of this system. Its scope and content will be determined through a series of workshops and meetings to conduct a comprehensive assessment of regional data needs. Building on these results, and incorporating the experience and results of a number of other ongoing efforts, a regional data management strategy will be developed as a basis for subsequent system design and construction.

The completed web-based system will include a range of pre-defined and interactive outputs that are tailored to specific user categories. Examples of pre-defined outputs include raw data (limited, partial, or full access), analyzed (including headline or indicator) data, maps, and documents and reports. The interactive portion of the site will include map

building via queries, which will form the basis for more advanced functions (e.g., data analysis tools, modeling, and environmental assessment) in later project stages. Visualization will be the primary focus of both the pre-defined and interactive site functions.

#### Support for Statewide Data Needs and Efforts

As applicable, data that are collected pursuant to Proposition 50-funded projects will be collected, analyzed, and reported using accepted standards and protocols, in particular those established for the Surface Water Ambient Monitoring Program (SWAMP), the Groundwater Ambient Monitoring and Assessment (GAMA) Program, and the Geographical-Environmental Information Management System (GEIMS). Voluntary compliance with these protocols will also be sought for projects that support IRWM Plan implementation, but that are not within the authority of IRWM partners to condition. Since data integration is a necessary component of IRWM planning and implementation, consistency with existing standards, protocols, and management systems will be heavily emphasized. To a large degree this will be accomplished voluntarily through IRWM partnerships and agreements. It is envisioned that additional coordination will result over time as other data owners become increasingly familiar with these standards and the benefits they provide for increasing integration and access. To facilitate this integration, data management standards and protocols addressing all relevant requirements will be established for the Region.

By ensuring consistency with State data management protocols and systems, the IRWM will promote transparency across these efforts. As such, by increasing data availability to the SWAMP, GAMA, and GEIMS systems, their respective program needs will be supported. Like the system proposed for the San Diego IRWM, the State programs utilize centralized data management systems to ensure data can be accessed and shared by stakeholders and the public. These data are managed using a relational database. Utilizing relational database structures to allow local agencies to manage their own data, while providing a centralized means of uploading the data into a larger database, provides a workable model for sharing data between these efforts.

### Data Accessibility and Dissemination

The most important function of an integrated data management strategy is to facilitate the dissemination of data and information to stakeholders, agencies, and the public. As described above, one preferred method of data dissemination will be to facilitate the transfer of applicable data to existing State data management systems. However, as noted, the variety of data types to be addressed in this effort is likely to greatly exceed that which can be managed in those focused systems. A diversified strategy for conducting data and information dissemination will be pursued for the IRWM. Although some elements of the Regional Watershed Data and Information System may ultimately reside in different locations, the County's Project Clean Water web site ([www.projectcleanwater.org](http://www.projectcleanwater.org)) will provide a centralized point of access for all users. This site was chosen because of its high visibility and the centralized role it already plays as a source of water quality information for the Region. Since it was launched in January 2001, the site has recorded more than 150,000 visits. Modifications to the site will provide users access to a range of standardized data and information, as well as the ability to query selected data sets. Other data and information will also be centrally accessible via links to a variety of other sources. For example, the California Environmental Resources Evaluation System (CERES) is an information system developed by the California Resources Agency to facilitate access to a variety of electronic data describing California's environments ([www.ceres.ca.gov](http://www.ceres.ca.gov)).

## 9 FINANCING

The completed IRWM Plan will include an analysis of options for funding ongoing obligations associated with regional, integrated water management. During later planning stages, i.e., after these obligations are more clearly defined, a detailed funding strategy will be developed. This strategy, which will be later adopted with the blueprint for regional water management, will generally address two types of costs, (1) Plan Implementation, and (2) Project Implementation.

Costs associated with plan implementation are expected to correspond primarily to the ongoing process of continued coordination and collaboration. Such costs are anticipated to include background research and issues investigation, meetings and workshops, website resources, report writing, and data management and analysis. Specific costs cannot be anticipated at this time since this will first require additional plan development. Rather than relying on a single source of funding, ongoing funding will likely include a combination of the following as determined appropriate and feasible:

- Joint Funding by Participating Entities: Agencies and organizations are sometimes able to divert discretionary funding to projects they strongly support. Depending on the type of activity under consideration, this can include both one-time contributions and ongoing commitments. With respect to the completion of the IRWM Plan, it is worth note that a significant funding commitment has already been made by the three RWMG members. Per the MOU between these three parties, each has committed up to \$100,000 each to complete the Plan.
- In-kind Services of Participating Entities: Integrated regional planning requires the support and participation of many people and organizations. In addition to the three members of the RWMG, we expect that a considerable amount of in-kind services will be used to support our ongoing efforts. In some instances, this may also entail an incorporation of functions into the organizational structure of key participants. To a large degree this has already occurred with the three RWMG members. In addition to the ongoing commitment each has made to participate in integrated water planning, specific obligations such as managing grant funding for implementation projects have also been made.

- One-time Funding Sources: Many of the specific activities of this ongoing effort are likely to qualify for existing and new sources of grant funding. In addition, as the Region is better able to present a unified voice and approach on the issues it considers most important, our ability to attract discretionary agency funding from legislators or state and federal agencies will also increase.
- Private Sources: Public-private partnerships can often be an effective way to fund highly visible initiatives such as integrated water planning. As this effort gains momentum, it is likely to garner considerable interest. Private organizations are often anxious to lend their support to efforts that benefit the community, and that they recognize as being mutually beneficial. As an example, the County has relied the past two years on private organizations (including law firms and utilities) to underwrite many of the costs of its annual Clean Water Summit.

Approaches to funding implementation projects will generally include the options discussed above, but will be different in emphasis. In particular, one-time sources such as grant funding will generally not be available or appropriate for ongoing costs. Where those costs involve operations and maintenance, they will be the responsibility of project applicants. In this respect, it is worth note that a key criterion during the selection of implementation projects for funding recommendations is a review of the project team and their qualifications to effectively implement the project. In those instances where the nature of the project would require additional operations or maintenance beyond that which is explicitly funded, the ability of the applicant to ensure that such support will be provided is considered.

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