Attachment 1

2007 San Diego

# Integrated Regional Water Management Plan

## *Highlights*

SAN DIEGO Integrated Regional Water Management

The City of San Diego

County of San Diego

San Diego County Water Authority

www.sdirwmp.org

# Innovative Approach to Water Management Planning for the San Diego Region

Governmental and non-governmental water management entities throughout the San Diego Region have set an unprecedented example for the Region through development of the first-ever San Diego Integrated Regional Water Management (IRWM) Plan. The San Diego IRWM Plan is a new approach to water resources planning that integrates existing sub-regional planning efforts and perspectives and formulates regional programs and projects to best achieve the Region's goals for optimum water resource management. Implementation of the IRWM Plan will help to sustain and protect the Region's water supply, water quality, and natural resources by bringing together public and private entities to work toward the following common goals:

- Optimize Water Supply Reliability
- Protect and Enhance Water Quality
- Provide Stewardship of Natural Resources
- Coordinate and Integrate Water Resources Management

## San Diego is a Diverse Region with Significant Water Management Challenges

The San Diego Region is comprised of eleven watersheds that discharge to coastal bays, estuaries, lagoons, and the ocean. The Region has more rare, threatened, and endangered plant and animal species than any comparable land area within the continental United States[1]. The San


*A State-wide water conveyance system supplies water to San Diego*

*The San Diego Region includes eleven coastal watersheds*


1. Pulliam, H. Ronald and Bruce Babbitt. 1997. Science and the Protection of Endangered Species. Science 1997 275: 499-500.

Diego County Multiple Species Conservation Program (MSCP) and Multiple Habitat Conservation Program (MHCP) are comprehensive habitat conservation programs that are being implemented by local jurisdictions and special districts. These plans address the habitat needs of critical plant and animal species and the preservation of native vegetation communities.

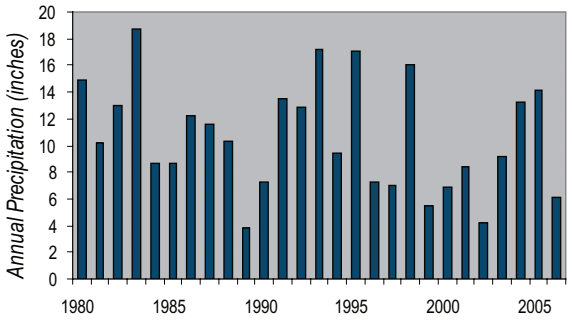
The San Diego Region is a culturally diverse area that features ethnic communities from Mexico, Central and South America, the Caribbean, Africa, Pacific Island, and Native American communities. The population of the Region is projected to increase by approximately 28 percent by the year 2030, with non-white ethnic groups projected to comprise the majority of the population by year 2010[2].

Historically dependent on military spending, the Region's economy has diversified during the past 20 years. Manufacturing is the largest contributor to the local economy, followed by tourism, the defense industry, and agriculture.

## Unreliable Precipitation and Limited Local Resources are Key Challenges

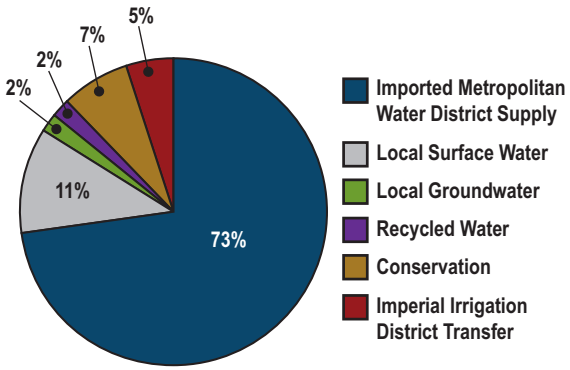
The San Diego Region has highly variable rainfall and limited local water supplies. Prior to 1950, local surface water and groundwater supplied the Region's needs; however, over the past 60 years the Region has depended largely on water imported from the Bay Delta and the Colorado River.

*Rainfall in Downtown San Diego: The Region Receives Limited and Unreliable Precipitation*




The Region has a Mediterranean climate, and precipitation follows a strong seasonal pattern. More than 90 percent of the annual precipitation typically occurs during the six-month period from November through April, while most of the evaporation occurs during summer and autumn months[3]. Significant variation occurs in the geographic distribution of precipitation across the Region, with inland mountains receiving up to four times as much rainfall as coastal areas. The total rainfall can vary greatly from year to year.

*The San Diego County Water Authority Relies Heavily on Imported Supplies[4]*



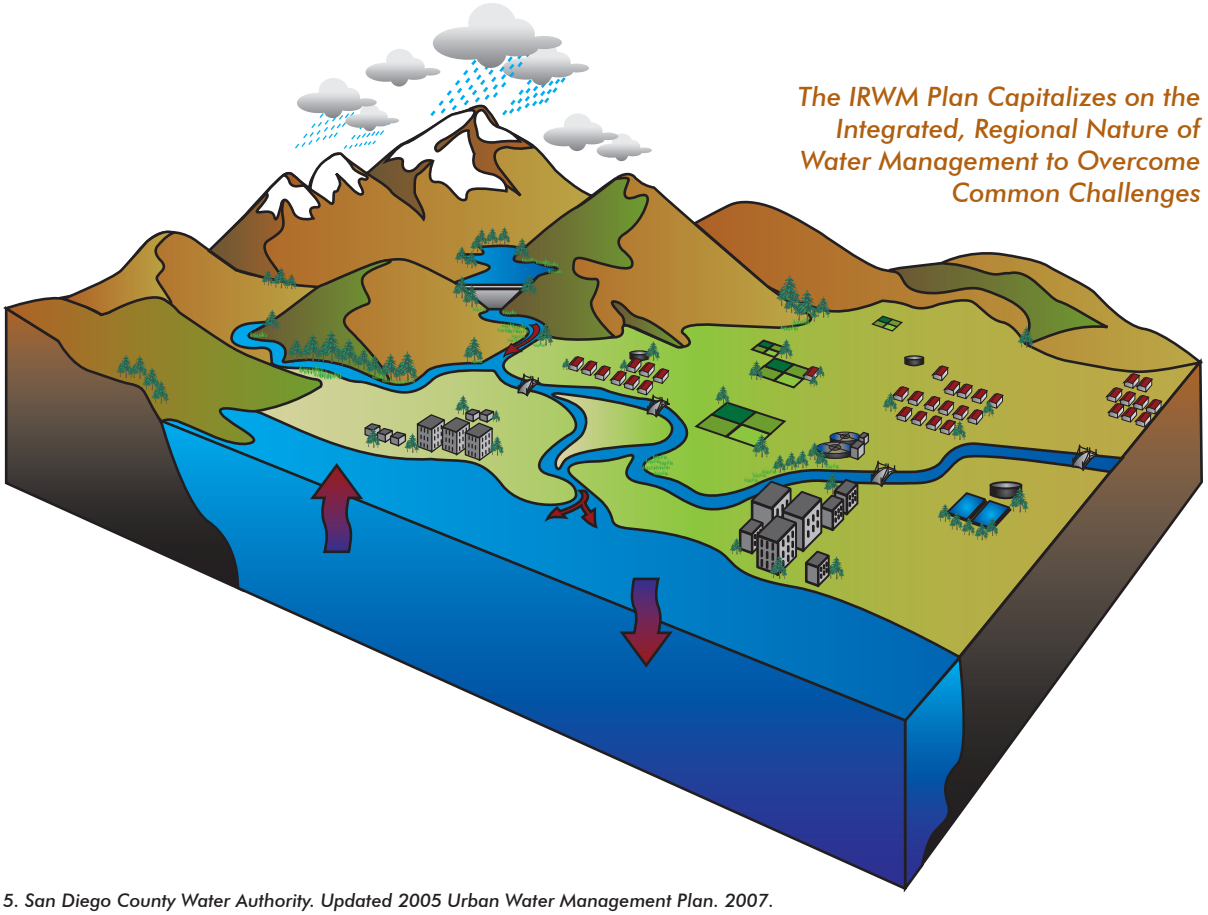

2. San Diego Association of Governments (SANDAG). Final 2030 City/County Forecast. 2003.
3. Western Regional Climate Center. Western Regional Climate Center historical climate data website: http://www.wrcc.dri.edu/summary/Climsmsca.html. 2006.
4. Fiscal Year 2006.

The San Diego County Water Authority (Water Authority) is the sole imported water wholesale agency within the Region, and all major water agencies within the San Diego Region are members of the Water Authority. Depending upon local hydrologic conditions, water supplies delivered by the Water Authority to its member agencies comprise 70 to 90 percent of the Region's water supply[5]. Increasing the Region's local supplies is critical to meeting future regional water demands.

The San Diego Regional Water Quality Control Board (Regional Board) has listed 40 inland surface waters and 35 coastal waters or beach segments in the Region as water quality impaired. Water quality constituents of concern for the Region's surface waters include coliform bacteria, sediment, nutrients, salinity, metals, and toxic organic compounds. The Regional Board has completed Total Daily Maximum Loads (TMDLs) for several of these water quality impaired waters, and has initiated TMDLs for a number of other impaired waters.

## A New Approach to Addressing Water Management Challenges

Numerous water resource management plans have been developed by individual groups or partnerships throughout the Region. These plans address water supply, water quality, ecosystem and habitat protection and enhancement, watershed protection, recreation, and land use management. These plans identify many water management issues on a sub-regional level, including:



*The IRWM Plan Capitalizes on the Integrated, Regional Nature of Water Management to Overcome Common Challenges*

5. San Diego County Water Authority. Updated 2005 Urban Water Management Plan. 2007.

- competing or conflicting objectives of the individual or sub-regional plans
- conflicting means of achieving the objectives
- jurisdictional conflicts
- regulatory constraints
- environmental concerns
- public acceptability
- lack of funding
- conflicts between governmental agencies and non-governmental organizations

The San Diego IRWM Plan provides a mechanism for stakeholders to work together to address the challenges that exist among multiple planning efforts. The IRWM Plan is intended to serve as an umbrella document that encompasses all water management planning efforts within the Region. In addition, the IRWM Plan also provides a means to develop and update regional water management objectives, overcome project implementation constraints, and implement water management projects that support the IRWM Plan objectives.

The IRWM Plan:

- Provides a mechanism to consider individual plans in a regional, more comprehensive manner, to determine where plans can supplement each other and move forward more effectively with complementary projects.

- Brings jurisdictions together to resolve conflicts and prioritize projects for local, state, or federal funding.

- Provides a unified regional approach for identifying and assessing regulatory compliance issues. Such an approach may provide greater opportunities for coordinating and resolving regulatory constraints than through stand alone projects or the actions of a single agency.

- Provides a unified approach for identifying and assessing environmental compliance challenges and environmental enhancement opportunities. A regional approach may provide greater opportunity for coordinating and resolving environmental issues than through stand alone projects or the action of a single agency.

- Allows for greater public understanding and acceptance of proposed projects in part because the projects were considered in the context of the Region and other management strategies.

- Allows for the attainment of broad-based objectives that benefit multiple aspects of water management planning through integration of projects and programs.

- Encourages entities to identify opportunities for implementing collaborative or regional funding approaches. Projects included within the IRWM Plan will be preferred for some forms of local, state, or federal funding.

# Stakeholder Engagement is a Critical Component of IRWM Planning

A Regional Water Management Group (RWMG) was formed to organize and facilitate development of the 2007 IRWM Plan**.** The RWMG is comprised of the following three agencies:

- County of San Diego
- City of San Diego
- San Diego County Water Authority

The **County of San Diego** provides services relating to land use and planning, parks and recreation, agricultural pest regulation, public works and public health. Many of these services are water and watershed-related program responsibilities that are only within the unincorporated portions of the region. The County serves as the lead agency for the regional municipal stormwater permit which regulates the Region's 21 Copermittees (County of San Diego, eighteen municipalities, San Diego Unified Port Authority and the San Diego County Regional Airport Authority).

The **City of San Diego** is the second largest city in California. The City's Water Department serves an average of 220 million gallons of water per day to 1.4 million residents in the City and neighboring communities, operates three water treatment plants, and has nine reservoirs storing up to 420,000 acre feet. The City operates the Metro Wastewater System which collects and treats wastewater from the City and 15 other cities and districts from a 450 square mile area with a population of over 2.2 million. The City operates two water reclamation plants and provides recycled water to users within the City and to neighboring cities.

The **San Diego County Water Authority** serves the Region as a public wholesale water supplier. The Water Authority works through its 24 member agencies to provide a safe, reliable water supply to nearly 3 million residents in the western third of San Diego County. The City of San Diego is the Water Authority's largest member agency. The Water Authority fulfills this responsibility in part by delivering imported water from the Colorado River and the Sacramento-San Joaquin River Delta - purchased from the Metropolitan Water District of Southern California. The Water Authority also brings water into the Region through Colorado River Transfer Programs, including the transfer of conserved water from the Imperial Irrigation District and transfer of saved water from the lining of the All-American and Coachella Canals.

Development of the IRWM Plan relied on active support and involvement from nearly 30 entities engaged in water resources planning and management across the Region. This stakeholder identification and input process was led by the following regional groups:

- Regional Advisory Committee. Policy-level input to the IRWM Plan was provided by a Regional Advisory Committee (RAC) that included agencies and entities with local water management authority, as well as subject matter experts representing environmental

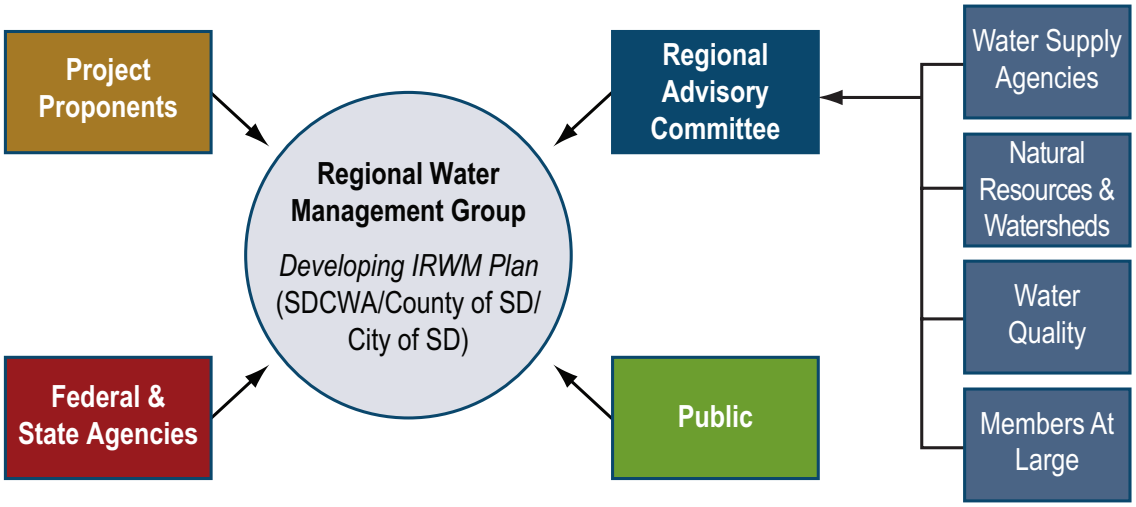
groups, academic entities, agricultural groups, water suppliers, wastewater agencies, water quality interests, and regulatory agencies. The RAC served as the primary organization that provided direction to the RWMG for plan preparation. RAC membership is listed on the following page.

- Water Authority Member Agency General Managers. The Water Authority Member Agency General Managers have provided input relative to water supply issues.

- Project Clean Water. Initial stakeholder identification and program direction was provided through Project Clean Water. Project Clean Water was initiated by the County of San Diego in 2000 as a mechanism for bringing together government agencies, non-government organizations, and interested parties throughout the Region to collaboratively explore water quality issues of regional importance.

- Project Clean Water Watershed Protection Technical Advisory Committee. Technical guidance was provided through the Watershed Protection Technical Advisory Committee (Watershed Protection TAC) formed through Project Clean Water. The Watershed Protection TAC meets regularly to discuss a range of watershed planning and implementation issues, and reaches a broad spectrum of watershed planning stakeholders.

- Stormwater Copermittee Management Committee. The Regional Stormwater Management Committee, which represents the 21 municipal stormwater Copermittees in the Region, provides input relative to stormwater management.




*Stakeholder Input is a Critical Component of the 2007 IRWM Plan*

*Regional Advisory Committee Members and Agency Representatives**

***Regional Water Management Group***

**Kathleen Flannery**, CAO Project Manager, County of San Diego (chair)
**Ken Weinberg**, Director of Water Resources, San Diego County Water Authority
**Marsi Steirer**, Deputy Director of Water Policy and Strategic Planning, City of San Diego

***Retail Water Entities***

**Susan Varty**, Director, Olivenhain Municipal Water District
**Dennis Bostad**, General Manager, Sweetwater Authority
**Mark Weston**, General Manager, Helix Water District
**Keith Lewinger**, General Manager, Fallbrook Public Utility District
**Michael Bardin**, General Manager, Santa Fe Irrigation District

***Natural Resources and Watersheds***

**Doug Gibson**, Executive Director, San Elijo Lagoon Conservancy
**Judy Mitchell**, District Coordinator, Mission Resource Conservation District
**Craig Adams**, Executive Director, San Dieguito River Valley Conservancy
**Rob Hutsel**, Executive Director, San Diego River Park Foundation
**Chris Basilevac**, Project Director, The Nature Conservancy
**Megan Johnson**, Watershed Coordinator, Southern California Wetlands Recovery Project

***Water Quality - Wastewater / Recycled Water***

**Neal Brown**, Director of Engineering and Planning, Padre Dam Municipal Water District
**Mike Thornton**, General Manager, San Elijo Joint Powers Authority

***Water Quality – Stormwater***

**Kirk Ammerman**, Principal Civil Engineer, City of Chula Vista
**Meleah Ashford**, Consultant to the City of Encinitas

***Members at Large***

**Shelby Tucker**, Regional Planner, San Diego Association of Governments (SANDAG)
**Rich Pyle**, San Diego Regional Chamber of Commerce
**Linda Flournoy**, Sustainability Consultant, Planning & Engineering for Sustainability
**Dr. Richard Wright**, Professor Emeritus of Geography, SDSU
**Michael Connolly**, Councilman, Campo Kumeyaay Nation
**Eric Larson**, Executive Director, Farm Bureau of San Diego County
**Karen Franz**, Watershed Monitoring Program Director, San Diego Coastkeeper

***Agency Representatives****

**Meena Westford**, Area Planning Officer, Southern California Area Office, U.S. Bureau of Reclamation
**Dave Gibson**, San Diego Regional Water Quality Control Board

**Agency representatives are not members of the Regional Advisory Committee*

# Vision, Mission, Goals and Objectives for the IRWM Planning Effort

**Vision:**
An integrated, balanced, and consensus approach to ensuring the long-term sustainability of San Diego's water supply, water quality, and natural resources.

**Mission:**
To develop and implement an integrated strategy to guide the San Diego Region toward protection, managing, and developing reliable and sustainable water resources. Through a stakeholder-driven and adaptive process, the Region can develop solutions to water-related issues and conflicts that are economically and environmentally preferable, and that provide equitable resource protection for the entire Region.

**Goals:**
- Optimize water supply reliability
- Protect and enhance water quality
- Provide stewardship of our natural resources
- Coordinate and integrate water resource management

The RWMG, RAC, and regional stakeholders developed nine objectives to help achieve the goals of the San Diego IRWM Plan. All nine objectives are critical to effectively managing water resources; therefore all the objectives within the Plan are considered of equal importance, and have not be been ranked or prioritized in any fashion.

**Objective A | Maximize stakeholder and community involvement and stewardship.** Coordinate efforts to foster a consistent message that will engage communities and educate the public on the interconnectiveness of water supply, water quality, and natural resources while promoting individual and community ownership of the problems and solutions.

**Objective B | Effectively obtain, manage, and assess water resources data and information.** Increase and expand sharing, integration, and comprehensive analysis of water resource and water quality data to provide a basis for improved water resources management.

**Objective C | Further the scientific and technical foundation of water management.** Promote actions, programs and projects that increase scientific knowledge and understanding of water management issues, effects of water management actions on water quality, relationships between water quality and beneficial uses, and how water quality improvements may translate to increased public benefit. Coordinate with regulatory agencies to assess and resolve ambiguous or conflicting regulatory standards or requirements.

**Objective D | Develop and maintain a diverse mix of water resources.** Continue to develop diverse water resources to meet the local supply and conservation goals identified in the Region's local water plans, reduce dependence on imported water supplies, and avoid shortages during drought periods. The diverse mix of water resources being developed includes water transfers, recycled water, water conservation, seawater desalination, local surface water, and groundwater.

**Objective E | Construct, operate, and maintain a reliable infrastructure system.** Construct water conveyance, treatment, storage, and distribution facilities for reliable regional and local water infrastructure systems that are operated and maintained to meet demands for treated and untreated water, are consistent with the future mix of resources, and provide flexibility in system operations.

**Objective F | Reduce the negative effects on waterways and watershed health caused by hydromodification and flooding.** Promote development and best management practices that reduce the negative effects on natural stream systems. Runoff from impervious surfaces can result in erosion, sediment pollution, altered water temperatures, habitat degradation, and flooding. Channel modification may increase the likelihood of damages due to an altered natural drainage system.

**Objective G | Effectively reduce sources of pollutants and environmental stressors.** Reduce pollutants and environmental stressors to maintain or improve water quality through the application of point source control, stormwater best management practices, management measures such as land use planning and conservation, and reservoir management.

**Objective H | Protect, restore and maintain habitat and open space.** Manage and acquire land to preserve open space and protect sensitive habitat, promote improved water quality, and limit activities that negatively affect water quality, habitat, and endangered, threatened, and key species. The creation of interconnected wildlife corridors, invasive species management, and water pollution prevention activities will help maintain and enhance native biological diversity.

**Objective I | Optimize water-based recreational opportunities.** Protect and improve water quality to support water-based recreational activities such as swimming, fishing, boating, as well as picnicking and hiking along waterways, while ensuring that the recreational activities do not adversely affect other beneficial uses of water.

### Performance Measures for Assessing Progress

Measurable targets have been developed to assess the Region's progress toward achieving each objective. Over time, these targets will be revised and updated in response to changing regional conditions. These targets provide a means of measuring the Region's attainment of the Plan objectives; targets will be achieved through the combined actions of the Region's governmental jurisdictions, non-governmental organizations, regulatory agencies, and stakeholders.

# The IRWM Plan Establishes Short-Term Priorities

Using the regional objectives as a guide, the IRWM Plan stakeholder group has identified short-term regional priorities, which will guide initial implementation of the IRWM Plan.

## Short-Term Regional Priorities

1. Implement priority projects and programs that support the Region's IRWM goals and objectives.
2. Formally establish a long-term institutional structure to guide the ongoing development and implementation of the San Diego IRWM Plan.
3. Implement and update as needed a Public Outreach Plan that ensures key stakeholders and affected parties are kept informed and engaged in IRWM planning and implementation.
4. Establish a regional, web-based system for sharing, disseminating, and supporting the analysis of water management data and information.
5. Complete a needs assessment and develop recommendations for addressing existing deficiencies in the technical and scientific foundation of beneficial uses and water quality objectives as designated by the San Diego Basin Plan.
6. Complete an updated assessment of local water management plans to ensure effective and upfront input from these plans during all phases of IRWM planning and implementation.
7. Revise and update the San Diego IRWM Plan.

## Identifying and Implementing Priority Projects is a Key Short-Term Priority

Projects contained within the IRWM Plan align with the regional objectives and support overall Plan implementation.

***Water Management Strategies****

*Agricultural land stewardship*
*Agricultural water use efficiency*
*Groundwater management*
*Conveyance*
*Seawater desalination*
*Potable water treatment and distribution*
*Economic incentives*
*Ecosystem restoration*
*Floodplain management*
*Groundwater aquifer remediation*
*Matching quality to use*
*Pollution prevention*
*Precipitation enhancement*
*Recharge area protection*
*Recycled water*
*CALFED surface storage*
*Regional surface storage*
*Reoperation and reservoir management*
*Urban land use management*
*Urban runoff management*
*Urban water use efficiency*
*Water transfers*
*Water-dependent recreation and public access*
*Watershed management and planning*
*Ecosystem preservation*
*Environmental and habitat protection and improvement*
*Water quality protection and improvement*
*Wetlands enhancement and creation*
*Conjunctive use*
*Wastewater treatment*

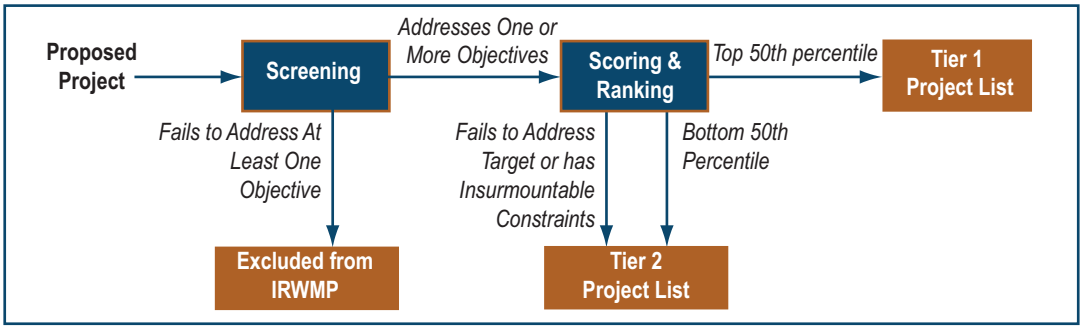
** Water Management Strategies from DWR's California Water Plan Update 2005 and Proposition 50 Program Guidelines.*

The most attractive projects within this regional setting are projects that address multiple water management strategies as well as multiple partners. Water management strategies included in this plan are those strategies that are addressed in existing regional plans or those that are currently implemented within the Region.

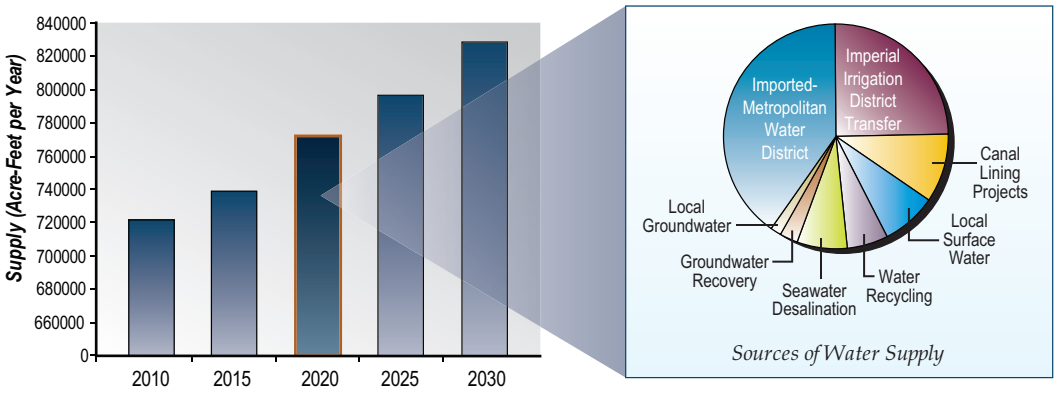
The 160 projects contained within this Plan include a wide array of water supply, water system reliability, water quality protection, pollution prevention, storm runoff control, habitat protection and enhancement, wetlands creation, non-native species control, land conservation, flood control, water-based recreation, data collection, stakeholder outreach, and public education projects.

A two-stage prioritization process, which includes plan-level prioritization and funding-level prioritization, was used to further prioritize projects into Tier I and Tier II groupings.

*Plan Prioritization Process Overview*




IRWM projects will enable successful Plan implementation which will result in a number of regional and inter-regional benefits. Additionally, San Diego IRWM projects will help to achieve State Water Plan objectives and goals by reducing reliance on water supplies imported from the Bay-Delta, while improving San Diego's water supply reliability, water quality, and natural resources.




*IRWM Projects will Provide Multiple Benefits Including Increasing Future Water Supply Diversity*

The San Diego IRWM projects also provide a wide array of benefits associated with water quality, ecosystem improvement, fish and wildlife enhancement, and flood protection.

| Type of IRWM Project | Regional Benefit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Water Quality Improvement | Ecosystem Improvement | Fish and Wildlife Enhancement | Enhance Flood Control | Enhance Erosion Control | Enhance Public Safety | Enhance Recreation and Public Access | Water Supply Reliability | Preserve Cultural Resources | Reduce Wastewater Discharges | Improve Water Management Coordination | Enhance Scientific Knowledge and Understanding | Increase Public Education and Awareness | Funding and Economic Benefits |
| Pollution Prevention and Urban Runoff Control | ● | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● | ● | ● |
| Ecosystem Restoration and Habitat Preservation | ● | ● | ● | ● | ● | | ● | | ● | ● | ● | | | ● |
| Flood Control or Hydromodification | | | | ● | ● | ● | | | | | ● | | | ● |
| Recreation & Public Access | | | | | | | ● | | | | ● | ● | ● | ● |
| Water Conservation | ● | ● | ● | | | | | ● | | ● | ● | ● | ● | ● |
| Potable Water Treatment and Conveyance | | | | | | ● | | ● | | ● | ● | | | ● |
| Groundwater Remediation or Management | | | | | | ● | | ● | | ● | ● | | | ● |
| Recycled Water | | | | | | ● | | ● | | ● | ● | | | ● |
| Brine Management | ● | | | | | | | ● | | ● | ● | | | ● |

## IRWM Planning Positions the Region to Secure Funding

In addition to providing a cost-effective and efficient means for planning across jurisdictional boundaries, IRWM planning provides an important first step in positioning the Region to secure the State and Federal funding necessary to allow the Region to implement much-needed water management projects and programs.

The Proposition 50 Chapter 8 IRWM Grant Program is a joint program between the California Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB) which provides funding for projects that support an adopted IRWM Plan, protect communities from drought, protect and improve water quality, and reduce dependence on imported water. The IRWM Grant Program includes two separate grant types - Planning Grants and Implementation Grants. Round 2 of the implementation grant process is currently underway, and completion of the San Diego IRWM Plan has positioned the Region to qualify for up to $25 million in implementation funding through this measure in 2008.

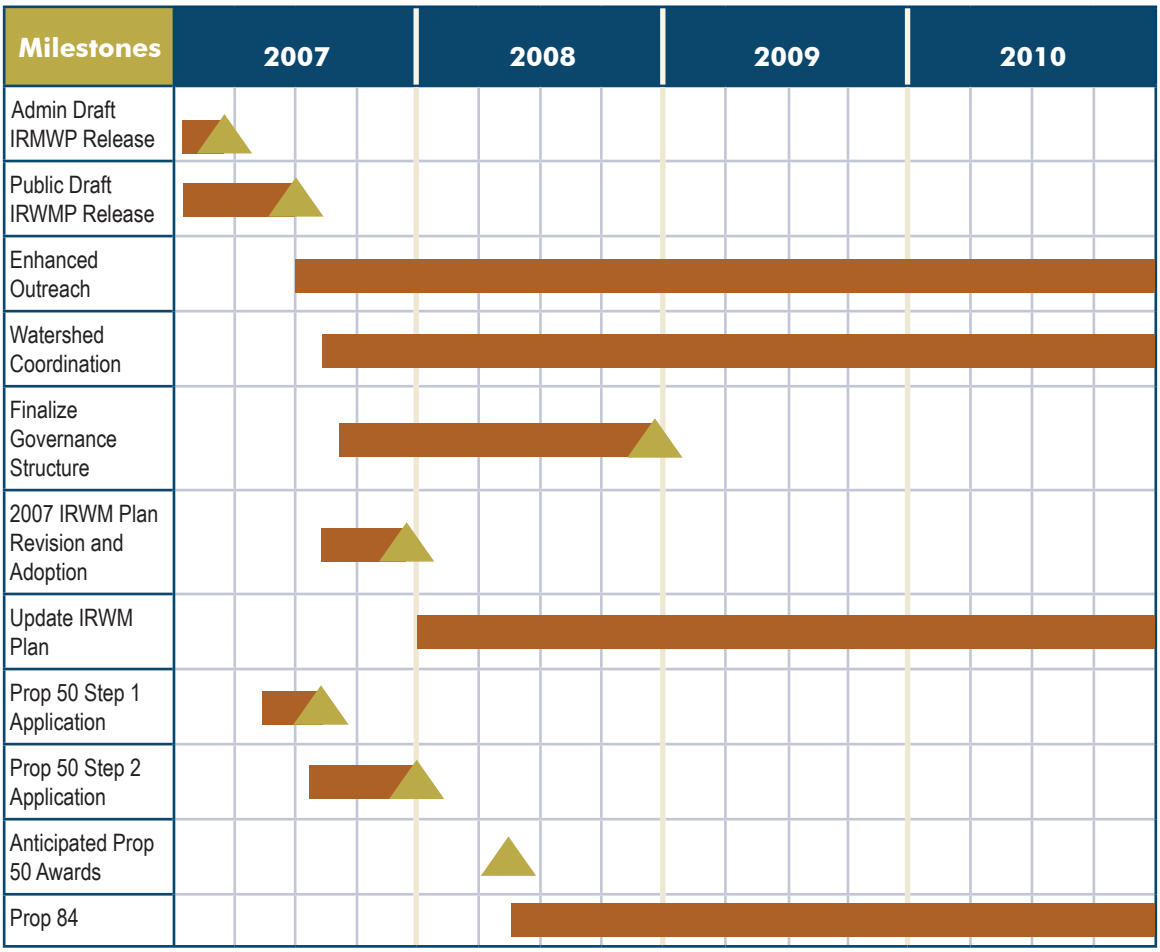
Proposition 84 will begin in the summer of 2008, and is expected to provide approximately $91 million in funding for IRWM projects in the San Diego Region in the near future.

Proposition 1E is expected to provide $300 million in statewide grants for stormwater and flood management projects in the near future.

Beyond Propositions 50, 84, and 1E, a variety of future state and federal funding opportunities for water-related projects are expected. This IRWM Plan will provide the vehicle to pursue those funding opportunities.

# The Past, Present and Future of IRWM Planning

San Diego's 2007 IRWM Plan represents the first step in a long term planning process. As this long-term process unfurls, stakeholder groups will be expanded, the governance structure will be refined, coordination with watershed groups will be embellished, emerging issues will be identified, and new priorities will be established. The San Diego IRWM Plan is a living document; it is envisioned that the IRWM Plan will continue to evolve over time in response to the changing needs of the Region. Through initiation of this unprecedented approach to integrated regional water management, the San Diego Region is establishing itself as a leader in proactive water management planning.

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