1920 North Iris Lane, Escondido, CA 92026 760-745-5522 www.rinconwater.org

Rincon del Diablo Municipal Water District

# 2010
# URBAN WATER MANAGEMENT PLAN

**Adopted June 14, 2011**

# TABLE OF CONTENTS

**TABLES** **Page**



**DIAGRAMS** **Page**

## List of Acronyms and Abbreviations

| | |
|---|---|
| AF | Acre Feet |
| BMP(s) | Best Management Practices |
| CCR | Consumer Confidence Report |
| CIMIS | California Irrigation Management Information System |
| CUWCC | California Urban Water Conservation Council |
| CWC | California Water Code |
| District | Rincon del Diablo Municipal Water District |
| DWR | Department of Water Resources |
| FY | Fiscal Year |
| GCPD | Gallons per Capita per Day |
| MGD | Million Gallons per Day |
| MOU | Memorandum of Understanding |
| MWD | Metropolitan Water District of Southern California |
| SDCWA | San Diego County Water Authority |
| SDG&E | San Diego Gas and Electric |
| TDS | Total Dissolved Solids |
| UWMP | Urban Water Management Plan |

## SECTION 1 – INTRODUCTION

### *1-1. Urban Water Management Plan*

The State of California Urban Water Management Planning Act (Act) requires each urban water supplier with 3,000 or more connections, or which supplies at least 3,000 acre-feet per year (AFY) of water, to submit an Urban Water Management Plan (UWMP) to the California Department of Water Resources (DWR) every five years.

The UWMP requires urban water suppliers to report, describe, and evaluate water deliveries and uses, water supply sources, efficient water uses, and demand management measures (DMMs) schedules and strategies to ensure that the water supplier can meet the water demands of its water customers as projected over a 20 or 25-year period, during normal conditions as well as during water shortages.

Along with legislative changes resulting from the enactment of the Water Conservation Act of 2009, the development of UWMPs enables water agencies, and in turn the State of California, to set targets and track progress toward decreasing daily per capita urban water use throughout the state. State law extended the deadline of the 2010 Plan to July 1, 2011. Although submitted in 2011, this UWMP will be referred to as the 2010 UWMP because it includes 2010 water data and the updated schedule is expected to resume the five year cycle in 2015.

The District prepared the 2010 UWMP in compliance with the state law, to restructure its existing 2005 UWMP (amended and adopted on December 13, 2005) in order to comply with DWR's review process.

### *1-2. Plan Coordination*

This plan was prepared and coordinated by Rincon del Diablo Municipal Water District's (District) Public Services Information Officer, with input and review by the District's Board of Directors (Board), General Manager, Director of Operations, Director of Finance, and Senior Engineer.

| **Board of Directors** | |
|---|---|
| Division I | Dr. Gregory Quist |
| Division II | David Drake |
| Division III | James Murtland |
| Division IV | David Draper |
| Division V | Diana Towne |

| **Rincon Personnel** | |
|---|---|
| General Manager | Mitch Dion |
| Director of Operations | Clint Baze |
| Director of Finance | Darlene Lynn |
| Public Information Officer | Julia Escamilla |
| Senior Engineer | Randy Whitmann |

During 2010, the District initiated its comprehensive *Water Master Plan* with a specific objective to evaluate its existing and future needs as well as to assist in the development of a strategy for maintaining reliable water service. Although not completed, data from that process was also used in preparing this plan.

### *1-3. Notification*

As a member of the San Diego County Water Authority (SDCWA), the District's General Manager and Board of Directors participate in regional water supplies planning through active participation with SDCWA and regional activities. Additionally, the District works in partnership with local agencies, cities, and environmental groups in the planning of local supplies. As such, the District notified the relevant

entities, sixty days before the release of its draft plan, about the District's intention to update its UWMP.

**Table 1** summarizes the coordination of this plan with appropriate agencies and general public. Notifications, correspondence, and comments are included in **Appendix A** of this plan.

**Table 1. Coordination with Appropriate Agencies**

| Coordinating Agencies | Invited to Participate in Development | Commented on the Draft | Attended Public Meetings | Contacted for Assistance | Sent a Copy of the Draft | Sent a Notice of Intention to Adopt |
|---|---|---|---|---|---|---|
| **Other water suppliers** | | | | | | |
| City of Escondido | X | | | | X | X |
| Olivenhain Municipal Water District | X | | | | X | X |
| Vallecitos Water District | X | | | | X | X |
| Valley Center Municipal Water District | X | | | | X | X |
| City of San Diego | X | | | | X | X |
| **Water management agencies** | | | | | | |
| Mission Resource Conservation District | X | | | | X | X |
| **Relevant public agencies** | | | | | | |
| City of San Marcos | X | | | | X | X |
| County of San Diego | X | | | X | X | X |
| San Diego County Water Authority | X | | | X | X | X |
| **General public** | | | | | | |
| Rincon Citizens Action Committee | X | | X | | X | X |
| District Website | X | | | | X | X |

### *1-4. Public Hearing*

A public hearing on the draft UWMP was held on May 24, 2011 at 6:00 p.m. located at the District office (1920 North Iris Lane). Two weeks prior, the draft plan was available for public review. A notice of the draft plan was also made available through the District's website (www.rinconwater.org).

### *1-5. Plan Adoption, Submittal, and Implementation*

The 2010 UMWP was adopted by the District's Board on June 14, 2011 after review and incorporation of comments as appropriate. The UWMP was submitted to DWR on or before July 1, 2011, with final copies distributed on or before September 1, 2011 to those entities listed in **Table 1.** A copy of the resolution to adopt the plan is included as **Appendix B**.

For the purpose of confirming compliance with the State of California's Urban Water Management Planning Act and the Water Conservation Bill of 2009, the District used the UWMP checklist to ensure completeness.

Like the 2005 plan, the District considers its 2010 plan to be a comprehensive summary of existing administrative and operational tools and efforts already in place. Subsequently, the UWMP is one of several tools used for long-range planning.

## SECTION 2 – SYSTEM DESCRIPTION

### *2-1. Service Area Description*

The District, located in northern San Diego County, approximately 25 miles north of the City of San Diego, was organized and incorporated on February 19, 1954 pursuant to Section 71000 of the California Water Code per the Municipal Water District Act of 1911.

Rincon is comprised of a parent district, which is divided into five divisions. The voters within these divisions elect a five-member Board of Directors, each of whom serves a four-year term. The Board of Directors oversees the District through an appointed General Manager of 19 employees.

Rincon is a special district providing water and fire protection service within specific boundaries. The District's boundary lines cross into various city and county communities that receive services provided by the District or neighboring agencies.

The District's customers are located within the cities of Escondido, San Marcos, and San Diego, and the unincorporated area of San Diego County. Although Rincon's parent district encompasses approximately 27,000 acres (42 square miles), potable and recycled water are served through its two improvement districts (ID), ID 1 and ID A. ID 1 is 7,945 acres while ID A is 1,210 acres, totaling 9,155 acres and 7,860 domestic water connections.

**Diagram 1** shows the location of Rincon's parent district relative to San Diego County. **Diagram 2** shows the five geographic boundaries within the Parent District with an overlay of ID 1 and ID A.

*Diagram 1* – Rincon Water District Proximity in San Diego County

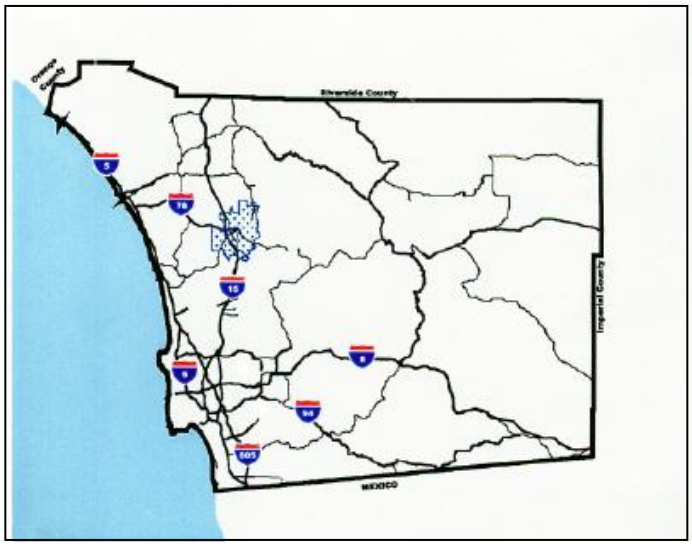



*Diagram 2* – Rincon Division Boundaries

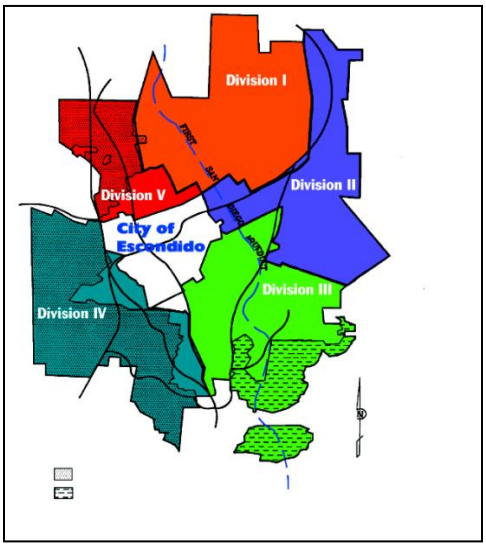
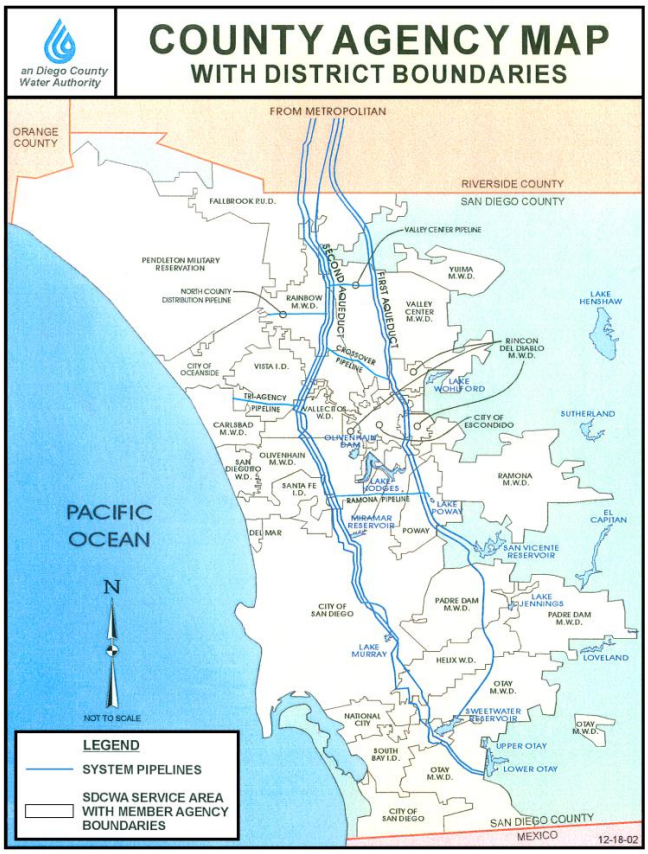



**Diagram 3** shows the proximity of various water entities in San Diego County in relationship to the District.

*Diagram 3* – San Diego County Water Authority




## *2-1. Climate*

Geographically, the District consists of variable terrain, ranging from 400 to 1250 feet in elevation. The climate range is considered as marine to desert, with a south coast marine to desert transition, as described by the State of California, Department of Water Resources. The summer is moderate to dry, with temperatures often exceeding 90 degrees Fahrenheit. The area is subject to wide variations in annual precipitation (averaging 11-15 inches) and seasonal wildfires. **Table 2** summarizes the historical temperatures, rainfall, and reference evapotranspiration.

**Table 2. Historical Climate and Evapotranspiration**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Monthly Average ETO (inches)*** $_1$ | 2.81 | 2.76 | 3.78 | 5.31 | 6.10 | 6.97 | 7.08 | 6.83 | 5.67 | 4.15 | 3.31 | 2.56 | 57.33 |
| ***Average Rainfall (inches)*** $_2$ | 2.7 | 3.4 | 2.8 | 1.1 | .3 | .1 | .1 | .1 | .2 | .7 | 1.3 | 1.7 | 14.5 |
| ***Average Temperature (Fahrenheit)*** $_2$ | 71 | 71 | 73 | 77 | 79 | 84 | 90 | 92 | 90 | 84 | 76 | 71 | 80 |

Data Source: $_1$ California Irrigation Management Information System (CIMIS) – Station 153, located in Escondido (latitude 33°04'52"N / 33.08 and longitude 116°58'33"W / -116.98) (wwwcimis.water.ca.gov/cimis/welcome/jsp)
$_2$ Western Regional Climate Center (http://www.wrcc.dri.edu/CLIMATEDATA.html)

The District includes portions of the San Dieguito and Carlsbad watersheds as well as Escondido Valley Groundwater Basin 9-9. Additionally, the District shares service area boundaries with Vallecitos Water District, Olivenhain Municipal Water District, Valley Center Municipal Water District, City of Escondido Water Utilities, the City of San Diego Water Utilities, and Del Dios Mutual Water.

The District's potable water distribution system includes 112 miles of water main (8-inches or larger in diameter), ten reservoirs with a total storage capacity of 25,742,229 million gallons, and four pump stations. Peak production is calculated at 10 million gallons per day (MGD). The District's recycled water system consists of 6.7 miles of water mains (8-inch or larger in diameter), two pump stations, and 69 service connections.

### *2-3. Population*

According to the Department of Water Resources' *Methodologies for Calculating Baseline and Compliance Urban per Capital Water Use*, the District is considered a Category 2 water supplier, with less than 95% of its service area within any (or any combination thereof) adjacent city limits. Although the District has GIS capabilities, the District opted to use population calculations from the San Diego Association of Governments (SANDAG).

The District's water demands will transition from current demand to projected demands (up to 2030), to support the population and changing demographics. **Table 3** below provides the current and forecasted population for its service area, consisting of ID 1 and ID A.

**Table 3. Population – Current and Projected**

| | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| **Service Area Population ID 1** | 29,555 | 27,230 | 29,132 | 30,321 | 32,360 | 33,368 |
| **Service Area Population ID A** | | 2,717 | 2,710 | 2,778 | 3,028 | 3,065 |
| **Total Service Area Population** | **29,955** | **29,947** | **31,842** | **33,009** | **35,388** | **36,433** |

Data Source: 2050 Regional Growth Forecast, San Diego Association of Governments (SANDAG),www.sandag.org,February 2010

### *2-4. Other Demographic Factors*

According to SANDAG's Regional Growth Forecast, the 2020 median household income for ID A will be $84,690 while the median household income for ID 1 will be $59,532. The numbers of persons per household for 2020 are estimated to be 2.7 and 2.9, respectively. Currently, it is anticipated that the District will grow by approximately 1,400 residential units in the next 30 years. By 2030 the District service area will contain only 400 undeveloped acres, indicating that the service area is nearly built out. The District anticipates that residential customers will continue to represent the largest number of water service connections. However, increased density of dwelling units and higher prices of water will drive consumption per capita downward.

During 2010, as the economy took a downward turn and water delivery prices increased, residential water deliveries for 2010 decreased by approximately 23% from the previous year. It is expected that water delivery prices will continue to increase in the next ten years resulting in subsequent decreases in residential water demands. Future water demand growth will most likely be in industrial and commercial sectors.

Additional information on household income, employment, and land use are located in **Appendix C** which contains SANDAG's complete 2050 Regional Growth Forecast for both ID 1 and ID A.

## SECTION 3 – SYSTEM DEMANDS

### *3-1. Historic Water Demands*

District records from 1965 indicate that agricultural water constituted approximately 83% of all water sales. Over the years, the District, which once served chiefly agricultural operations, has slowly urbanized. At the end of FY 2010, agricultural water sales amounted to 3% with residential water sales representing approximately 50% of total sales.

**Tables 4** and **5** show actual water deliveries and the number of service connections for FY2005 and FY 2010, respectively. All District service connections are metered.

**Table 4. Water Deliveries – Actual 2005**

| | 2005 | | | | | |
|---|---|---|---|---|---|---|
| | Metered | | Not Metered | | Total | |
| **Water Use Sectors** | **# of accounts** | **Delivery AF/Y** | **# of accounts** | **Delivery AF/Y** | **# of accounts** | **Delivery AF/Y** |
| **Single Family** | 6,479 | 4,483.6 | 0 | 0 | 6,479 | 4,483.6 |
| **Multi-Family** | 89 | 665.1 | 0 | 0 | 89 | 665.1 |
| **Commercial** | 715 | 881.3 | 0 | 0 | 715 | 881.3 |
| **Institutional/Governmental** | 9 | 77.0 | 0 | 0 | 9 | 77.0 |
| **Landscape** | 158 | 576.6 | 0 | 0 | 158 | 576.6 |
| **Agriculture** | 63 | 616.1 | 0 | 0 | 63 | 616.1 |
| **Other (Recycled)** | 38 | 51.8 | 0 | 0 | 38 | 51.8 |
| **Total** | **7,551** | **7,351.5** | **0** | **0** | **7,551** | **7,351.5** |
| **Units:** Acre feet | | | | | | |

**Table 5. Water Deliveries – Actual 2010**

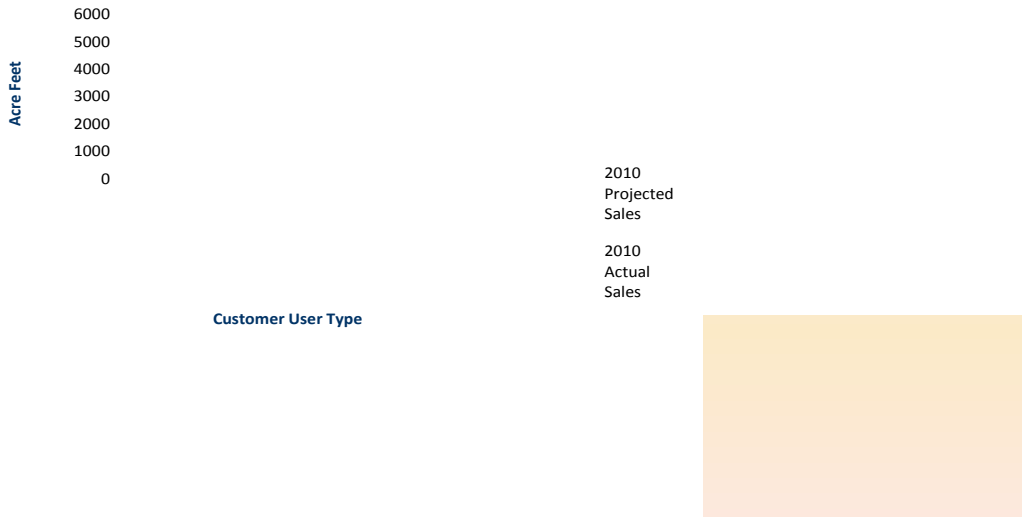
| | 2010 | | | | | |
|---|---|---|---|---|---|---|
| | Metered | | Not Metered | | Total | |
| **Water Use Sectors** | **# of accounts** | **Delivery AF/Y** | **# of accounts** | **Delivery AF/Y** | **# of accounts** | **Delivery AF/Y** |
| **Single Family** | 6,690 | 3,872.2 | 0 | 0 | 6,690 | 3,872.2 |
| **Multi-Family** | 89 | 601.5 | 0 | 0 | 89 | 601.5 |
| **Commercial** | 778 | 786.3 | 0 | 0 | 778 | 786.3 |
| **Institutional/Governmental** | 9 | 79.0 | 0 | 0 | 9 | 79.0 |
| **Landscape** | 149 | 488.3 | 0 | 0 | 149 | 488.3 |
| **Agriculture** | 27 | 266.5 | 0 | 0 | 27 | 266.5 |
| **Other (Recycled)** | 69 | 3,278.8 | 0 | 0 | 69 | 3,278.8 |
| **Total** | **7,811** | **9,372.6** | **0** | **0** | **7,811** | **9,372.6** |
| **Units:** | | | | | | |

### *3-2. 2005 UWMP Projections for 2010*

**Diagram 4** shows actual FY 2010 water demands by user classification in comparison to projections made for 2010 within the 2005 UWMP. As indicated in the figure below, actual water demands for FY 2010 were significantly less than those projected in the 2005 UWMP. This variance was likely influenced by the economic conditions and increased water delivery costs, as well as a trend of cooler than normal seasonal temperatures. Additionally, customer response to drought conditions may have

also contributed to this variance. Since 2009 an extensive public awareness campaign has been conducted by regional and local agencies.

*Diagram 4* - 2010 Water Demands as Projected in the 2005 UWMP




## *3-3. Supply Source*

The District currently receives its potable water from SDCWA and its recycled water from the City's Hale Avenue Resource Recovery Facility. Additionally, the District maintains 34 interconnections with neighboring agencies to supplement the system as required. These interconnections are currently closed or disconnected but are available should additional water supplies and/or emergency water backup be required.

**ID 1 –** Potable water customers in this improvement district receive water that is 100% imported from San Diego County Water Authority (SDCWA). SDCWA, in turn, purchases treated water from the Metropolitan Water District of Southern California (MWD). MWD imports water from two sources, the Colorado River and the State Water Project. Two elaborate conveyance systems transport the water to MWD. One is a 242-mile aqueduct which transports Colorado River water from Lake Havasu to southern California, and the other is a 444-mile aqueduct that transports water from the Sacramento-San Joaquin Delta to Lake Skinner located in Riverside County. The water is blended and treated at the Robert A. Skinner Filtration Plant at Lake Skinner and conveyed by SDCWA to the District's ID 1.

SDCWA was organized in 1944 and annexed to MWD in 1946 under the County Water Authority Act for the express purpose of importing Colorado River water to San Diego County. Today, SDCWA represents 23 member agencies located in San Diego County. SDCWA is represented on MWD's Board by four directors. SDCWA is the second largest of MWD's member agencies, but is the largest of MWD sales. SDCWA purchases approximately 30% of MWD's total water supply, which makes up over 60% of SDCWA's water supplies.

**ID A –** Potable water customers in this improvement district receive water that is provided by the City of Escondido (City), although purchased from SDCWA. The City has two sources of water. The first source is, like ID 1, purchased from SDCWA. The second is local water primarily from Lake Henshaw located in the San Luis Rey River watershed. Both sources may be blended and treated at Lake Dixon before delivery into the ID A system.

The City of Escondido was chartered in 1888. The City's water service area contains approximately 20,000 acres (about 33.42 square miles). The City, also a member agency of SDCWA, supplies potable water to ID A customers by exchange agreements through SDCWA.

### *3-4. Water Quality*

As required by federal and state governments, the District publishes a Consumer Confidence Report (CCR) each year for both ID 1 and ID A. The CCR lists all contaminants found in the District's water, the source of those contaminants, testing standards that must be met, a range of testing results, and non-compliance events that occurred, if any. The CCR is distributed to all customers and is posted on the District's website.

### *3-5. Projected Water Deliveries – 2015 to 2030*

The projected water deliveries demonstrated in **Tables 6, 7, and 8** were developed by the District using 2010 as a base year. The District has adopted a "zero-net growth" philosophy for development. This, coupled with the reality of increasing water costs, will result in a decreasing trend for potable water demands on a per capita basis. Expanded use of recycled water and other innovations will continue to drive water efficiency. Specifically, with water efficiency goals and changes, attitudes will likely alter the course of outdoor irrigation throughout the region. Less lawn, higher density residential growth, and agriculture limited to higher value production, will effectively cap or reduce water deliveries in those categories.

**Table 6. Water Deliveries – Projected 2015**

| | 2015 | | | | | |
|---|---|---|---|---|---|---|
| | Metered | | Not Metered | | Total | |
| **Water Use Sectors** | **# of accounts** | **Delivery AF/Y** | **# of accounts** | **Delivery AF/Y** | **# of accounts** | **Delivery AF/Y** |
| **Single Family** | 6,690 | 3,900 | 0 | 0 | 6,690 | 3,900 |
| **Multi-Family** | 89 | 600 | 0 | 0 | 89 | 600 |
| **Commercial** | 778 | 800 | 0 | 0 | 778 | 800 |
| **Institutional/Governmental** | 9 | 100 | 0 | 0 | 9 | 100 |
| **Landscape** | 149 | 450 | 0 | 0 | 149 | 450 |
| **Agriculture** | 27 | 250 | 0 | 0 | 27 | 250 |
| **Other (Recycled)** | 69 | 3,300 | 0 | 0 | 69 | 3,300 |
| **Total** | **7,811** | **9,400** | **0** | **0** | **7,811** | **9,400** |
| **Units: Acre feet** | | | | | | |

| Table 7. Water Deliveries – Projected 2020 | | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | | | | | |
| | Metered | | Not Metered | | Total | |
| Water Use Sectors | # of accounts | Delivery AF/Y | # of accounts | Delivery AF/Y | # of accounts | Delivery AF/Y |
| Single Family | 8,090 | 3,950 | 0 | 0 | 8,090 | 3,950 |
| Multi-Family | 90 | 650 | 0 | 0 | 90 | 650 |
| Commercial | 780 | 850 | 0 | 0 | 780 | 850 |
| Institutional/Governmental | 10 | 100 | 0 | 0 | 10 | 100 |
| Landscape | 149 | 450 | 0 | 0 | 149 | 450 |
| Agriculture | 25 | 200 | 0 | 0 | 25 | 200 |
| Other (Recycled) | 72 | 3,400 | 0 | 0 | 72 | 3,400 |
| **Total** | **9,216** | **9,600** | **0** | **0** | **9,216** | **9,600** |
| **Units: Acre feet** | | | | | | |

| Table 8. Water Deliveries – Projected 2025, 2030, and 2035 | | | | | | |
|---|---|---|---|---|---|---|
| | 2025 | | 2030 | | 2035 | |
| Water Use Sectors | Metered | | Metered | | Metered | |
| | # accounts | Deliveries AFY | # accounts | Deliveries AFY | # accounts | Deliveries AFY |
| Single Family | 8,090 | 4,000 | 8,090 | 4,100 | 8,090 | 4,100 |
| Multi-Family | 90 | 650 | 90 | 650 | 90 | 650 |
| Commercial | 780 | 850 | 780 | 850 | 780 | 850 |
| Institutional/Governmental | 10 | 100 | 10 | 100 | 10 | 100 |
| Landscape | 150 | 500 | 150 | 500 | 150 | 500 |
| Agriculture | 25 | 200 | 25 | 200 | 25 | 200 |
| Other (Recycled) | 75 | 3,500 | 80 | 3,600 | 85 | 3,700 |
| **Total** | **9,220** | **9,800** | **9,225** | **10,000** | **9,230** | **10,100** |
| **Units:** Acre feet | | | | | | |

### *3-6. Sales to Other Water Agencies*

The District is a retail water supplier and does not routinely sell wholesale water supplies to any entity. However, with surplus production for incremental growth of indirect reuse facilities, the District may in the future be a supplier of water to neighboring agencies.

### *3-7. Other Water Uses and Losses*

The District does not currently have saline barriers, groundwater recharge, conjunctive use of potable water, or treatment facilities; therefore water is not used for these types of purposes. As required by the California Urban Water Conservation Council's (CUWCC) Foundational Best Management Practices (BMPs), the District audits its water loss on an annual basis, and maintains a consistent level of water loss under 10% of total purchases. This is achieved, in part, by the implementation of sound amplification leak detection completed biannually, continuous monitoring of the system, and an aggressive infrastructure maintenance program. As water prices increase and the District replaces more infrastructure, water loss is anticipated to decrease. Once the District implements the Harmony Grove Water Factory, some water loss will occur due to groundwater basin loss and treatment plant rejection water.

Table 9 shows the projection of water loss using a variable of 3%. This is based on a ten-year average of water loss audit results from FY2001 to FY2010.

| Table 9. Additional Water Uses and Losses | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Water Use:** | **2005** | **2010** | **2015** | **2020** | **2025** | **2030** | **2035** |
| **Saline Barriers** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Groundwater Recharge** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Conjunctive Use** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Raw Water** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Recycled Water** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **System Losses** | 468 | 186 | 183 | 223 | 241 | 263 | 271 |
| **Other** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | 468 | 186 | 183 | 223 | 241 | 263 | 271 |
| **Units:** Acre feet | | | | | | | |

### *3-8. Total Water Use*

By 2015, the District anticipates reducing its dependency on SDCWA water, by diversifying the sources of water in its water portfolio. The projects that are currently in development are included in Section 4 of this report. SDCWA is also diversifying its own portfolio by looking towards desalination and storage projects. These projects are discussed in SDCWA's UWMP which is attached to this report as **Appendix D. Table 10** below shows the total water use anticipated, past and into the future.

| Table 10. Total Water Use | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Water Use** | **2005** | **2010** | **2015** | **2020** | **2025** | **2030** | **2035** |
| **Total Water Deliveries** (Tables 4-8) | 7,299.7 | 6093.8 | 4,100 | 3,700 | 3,300 | 2,900 | 2,400 |
| **Sales to Other Water Agencies** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Additional Water Uses & Losses** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Raw Water** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Recycled Water** | 51.8 | 3,278.8 | 3,300 | 3,400 | 3,500 | 3,600 | 3,700 |
| **System Losses** | 468.1 | 185.8 | 183 | 223 | 241 | 263 | 271 |
| **Other - Indirect Potable** | 0 | 0 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| **Total** | 7,819.6 | 9,558.4 | 9,583 | 9,823 | 10,041 | 10,263 | 10,371 |
| **Units:** Acre feet | | | | | | | |

### *3-9. Metered Purchases and Sales*

The District purchases potable water that is delivered from two metered turnouts belonging to SDCWA. SDCWA reads these meters monthly. The District purchases its recycled water from the City of Escondido (City) and calculates usage by the sum of individual meters, since there is no single metered turnout on the City's recycled water distribution system. These calculations are done monthly and are reconciled with the City.

The District does not have any unmetered customers. All meters are read on a monthly basis.

### *3-10. Projected Water Use for Low Income Families*

The District serves primarily low-density single family homes. In 2008, the median annual household income was $85,300 for IDA and $51,374 for ID1. The District does not anticipate any city, county, or general plans that identify planned lower income housing projects within the District's service area.

### *3-11. Baselines and Targets*

In November 2010, the Water Conservation Act of 2009 (SB X7-7) was signed into law, addressing agricultural and urban water conservation, codifying the 20X2020 Plan, providing guidance and requiring implementation of baseline and compliance water use. This legislation called for the development of methodologies and associated criteria for the Retailer Supplier to determine its compliance. Those Strategies include:

Methodology 1: Gross Water Use
Methodology 2: Service Area Population
Methodology 3: Base Daily per Capita Water Use
Methodology 4: Compliance Daily per Capita Water Use
Methodology 5: Indoor Residential Use
Methodology 6: Landscaped Area Water Use
Methodology 7: Baseline Commercial, Industrial, and Institutional Water Use
Methodology 8: Criteria for Adjustments to Compliance Daily Per Capita Water Use
Methodology 9: Regional Compliance.

### *3-12. District Compliance*

The District opted for Methodology 1 – Gross Water Use, to determine its own SBx7-7 compliance as well as determining its projected water demands from 2015 to 2035. The District selected 2008 as its base year for the 14 year period of 1996 to 2009. Table 11 below shows the required data for the base period ranges.

**Table 11. Base Period Ranges**

| Base | Parameter | Value | Units |
|---|---|---|---|
| 10-15 Year Base Period | 2008 Total Water Deliveries | 8,116.0 | *See below* |
| | 2008 Total Volume of Delivered Recycled Water | 3,073.5 | *See below* |
| | 2008 Recycled Water as a Percent of Total Deliveries | 37.9 | *Percent* |
| | Number of Years in Base Period | 14 | *Years* |
| | Year Beginning Base Period Range | 1996 | |
| | Year Ending Base Period Range | 2009 | |
| 5 Year Base Period | Number of Years in Base Period | 5 | *Years* |
| | Year Beginning Base Period Range | 2005 | |
| | Year Ending Base Period Range | 2009 | |

**Units:** Acre feet

Table 12 shows the population, water use, and annual daily per capita water use (GPCD) for year 1 through 14 for the base period. The population values and daily gross water use data shown below are from the District's previous UWMPs and Comprehensive Annual Financial Reports. The base average for the 14-year period is 266 GPCD.

| Table 12. Base Daily Per Capita Water Use –14 Year Range | | | | |
|---|---|---|---|---|
| Base Period Year | | Distribution System Population | Daily System Gross Water Use (AF) | Annual Daily per Capita Water Use (GPCD) |
| Sequence Year | Calendar Year | | | |
| Year 1 | 1996 | 26,300 | 8,061.4 | 273.6 |
| Year 2 | 1997 | 26,300 | 7,264.4 | 246.6 |
| Year 3 | 1998 | 26,300 | 6,539.6 | 222.0 |
| Year 4 | 1999 | 25,900 | 8,077.2 | 278.4 |
| Year 5 | 2000 | 26,000 | 9,118.9 | 313.1 |
| Year 6 | 2001 | 26,000 | 8,081.5 | 277.5 |
| Year 7 | 2002 | 27,000 | 8,997.8 | 297.5 |
| Year 8 | 2003 | 27,000 | 7,982.0 | 263.9 |
| Year 9 | 2004 | 27,100 | 9,051.7 | 298.2 |
| Year 10 | 2005 | 28,200 | 7,732.0 | 244.8 |
| Year 11 | 2006 | 28,200 | 8,369.3 | 265.0 |
| Year 12 | 2007 | 28,649 | 8,609.9 | 268.3 |
| Year 13 | 2008 | 29,098 | 8,116.0 | 249.0 |
| Year 14 | 2009 | 29,546 | 7,470.9 | 225.7 |
| | | | Base Daily Per Capita Water Use | 266.0 |

Table 13 contains the population and daily gross water use for 2005 through 2009. The average GPCD for this five-year period is 250.6. The calculated target for 2015 and 2020 are 239.4 GPCD and 212.8 GPCD respectively. For FY 2010, the GPCD was 193.6. Using Methodology 1, the District is currently on track for compliance with SBx7-7.

| Table 13. Base Daily per Capita Water Use – 5 Year Range | | | | |
|---|---|---|---|---|
| Base period year | | Distribution System Population | Daily System Gross Water Use (AF) | Annual Daily per Capita Water Use (GPCD) |
| Sequence Year | Calendar Year | | | |
| Year 1 | 2005 | 28,200 | 7,732.0 | 244.8 |
| Year 2 | 2006 | 28,200 | 8,369.3 | 265.0 |
| Year 3 | 2007 | 28,649 | 8,609.9 | 268.3 |
| Year 4 | 2008 | 29,098 | 8,116.0 | 249.0 |
| Year 5 | 2009 | 29,546 | 7,470.9 | 225.7 |
| | | | Base Daily Per Capita Water Use | **250.6** |

### *3-13. Regional Alliance*

As set forth by the SBx7-7, each urban water supplier is required to develop an urban water use target and an interim urban water use target. Notably, it authorizes urban retail water suppliers to determine and report progress toward achieving these targets on an individual agency basis or pursuant to a regional alliance as provided in CWC §10608.28(a).

The DWR Guidebook and Methodologies provide guidance to urban retail water suppliers for purposes of forming and carrying out a regional alliance in accordance with CWC § 10608.28(a) and related provisions of SBX7-7. Retail water suppliers are eligible to form a regional alliance in accordance with

CWC § 10608.28(a) if the suppliers meet at least one of several specified criteria, such as (1) the suppliers are recipients of water from a common wholesale water supplier, or (2) the suppliers are located within the same hydrologic region, which for purposes of a regional alliance refers to the 10 hydrologic regions as shown in the California Water Plan.

The District, along with Vallecitos Water District, San Dieguito Water District, and Olivenhain Water District have formed a regional alliance pursuant to CWC § 10608.28(a). All of these members are recipients of water from a common wholesale water supplier, in this case, SDCWA, and all of the members are located within the South Coast Hydrologic Region as shown in the California Water Plan.

The members have entered into a cooperative agreement to establish and carry out a regional alliance and have jointly notified DWR of the formation of their regional alliance (copies of the Cooperative Agreement and notification to DWR are set forth in **Appendix E**. In accordance with DWR guidance, the members have prepared an urban water use target and an interim urban water use target for the region, which is further set forth herein and within each of the other member's individual UWMPs. Additionally, each member of the regional alliance has developed its own set of interim and urban water use targets, along with other supporting data and determinations, all of which is included in each member's individual UWMP. The District's individual interim and urban water use targets are shown above. The Regional Alliance Demand Target is shown below in **Table 14.**

**Table 14. Regional Alliance Demand Target**

| Alliance Member | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|
| **Olivenhain Municipal Water District** | | | | | |
| GPCD Goal | 319 | 283 | 283 | 283 | 283 |
| Population Projection | 66,993 | 67,987 | 69,003 | 71,101 | 72,095 |
| 20X2020 Demand Target | 23,938 | 21,552 | 21,859 | 22,523 | 22,838 |
| **Rincon del Diablo Municipal Water District** | | | | | |
| GPCD Goal | 239 | 218 | 218 | 218 | 218 |
| Population Projection | 29,212 | 30,984 | 32,289 | 34,576 | 35,634 |
| 20X2020 Demand Target | 7,820 | 7,392 | 7,704 | 8,250 | 8,502 |
| **San Dieguito Water District** | | | | | |
| GPCD Goal | 180 | 160 | 160 | 160 | 160 |
| Population Projection | 40,515 | 41,870 | 44,271 | 45,531 | 46,425 |
| 20X2020 Demand Target | 8,147 | 7,484 | 7,913 | 8,138 | 8,298 |
| **Vallecitos Water District** | | | | | |
| GPCD Goal | 179 | 159 | 159 | 159 | 159 |
| Population Projection | 96,123 | 98,001 | 105,428 | 109,751 | 112,007 |
| 20X2020 Demand Target | 19,273 | 17,454 | 18,777 | 19,547 | 19,949 |
| **REGIONAL ALLIANCE** | | | | | |
| GPCD Goal | 227 | 202 | 201 | 201 | 201 |
| Population Projection | 232,843 | 238,842 | 250,991 | 260,959 | 266,161 |

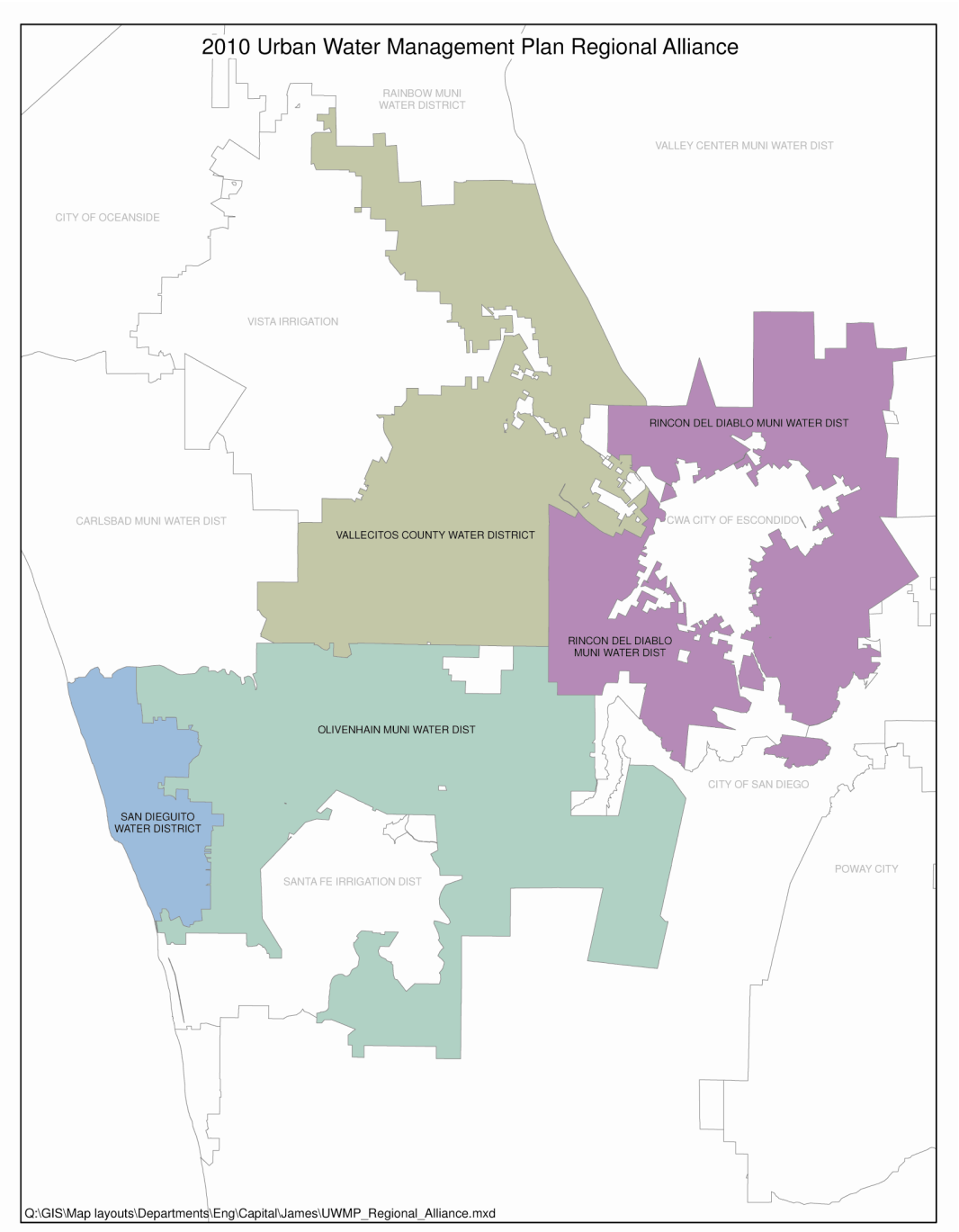
A map showing the area of the Regional Alliance is contained in **Diagram 5**.

### *3-14. Water Demand Projections*

The District's demand projections to its wholesalers are listed in **Table 15** below. These figures include water from an indirect potable reuse project that is discussed in detail in Section 4 of this UWMP.

| Table 15. Retail Agency Demand Projections Provided to Wholesale Suppliers | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Wholesaler** | **Contracted Volume** | **2010** | **2015** | **2020** | **2025** | **2030** | **2035** |
| San Diego County Water Authority | No | 4,100 | 4,100 | 3,700 | 3,300 | 2,900 | 2,500 |
| City of Escondido (Recycled Water) | No | 4,074 | 5,279 | 5,779 | 6,279 | 6,779 | 7,279 |

***Diagram 5*** - Map of Regional Alliance



## SECTION 4 – SYSTEM SUPPLIES

### *4-1. Water Sources*

**Table 16** below shows total water supplies required from each of the District's wholesalers. SDCWA has been working with member agencies to update its own UWMP. The District's future potable water demands have been provided to and adopted by SDCWA. These numbers have been incorporated into the SDCWA's UWMP, which is included in this report as **Appendix D**.

The District has been working with the City of Escondido, along with nine other agencies (Olivenhain Municipal Water District (OMWD), Carlsbad Municipal Water District (Carlsbad MWD), San Elijo Joint Powers Authority (San Elijo JPA), Leucadia Wastewater District, City of Oceanside, City of Vista/Buena Sanitation District, Vista Irrigation District (VID), Vallecitos Water District, City of Escondido, and the Santa Fe Irrigation District to develop a regional Recycled Water Facilities Plan. This plan analyzes the recycled water facilities and demands for each agency in order to develop a regional project. Through this planning process, the City of Escondido recognizes the District's current and projected recycled water demands, which includes a significant increase of recycled water for an indirect potable reuse project discussed in Section 4-2.

**Table 16. Wholesale Supplies – Existing and Planned Sources of Water**

| Wholesaler Sources | Contracted Volume | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| San Diego County Water Authority | No | 4,100 | 3,700 | 3,300 | 2,900 | 2,400 |
| City of Escondido (Recycled Water) | No | 5,300 | 5,900 | 6,500 | 7,100 | 7,700 |
| **Units:** Acre feet | | | | | | |

**Table 17. Water Supplies - Current and Projected**

| Water Supply Sources | | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Water Purchased From: | Wholesaler Supplied Volume (yes/no) | | | | | | |
| San Diego County Water Authority | Yes | 6,100 | 4,100 | 3,700 | 3,300 | 2,900 | 2,400 |
| **Supplier Produced - Indirect Potable Reuse** | | 0 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| **Supplier-Produced Surface Water** | | 0 | 0 | 0 | 0 | 0 | 0 |
| **Transfers In** | | 0 | 0 | 0 | 0 | 0 | 0 |
| **Exchanges In** | | 0 | 0 | 0 | 0 | 0 | 0 |
| **Recycled Water (City of Escondido)** | | 3,300 | 3,300 | 3,400 | 3,500 | 3,600 | 3,700 |
| **Desalinated Water** | | 0 | 0 | 0 | 0 | 0 | 0 |
| **Other** | | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | | 9,400 | 9,400 | 9,600 | 9,800 | 10,000 | 10,100 |
| **Units:** Acre feet | | | | | | | |

**Table 17** shows the total water supplies that are currently available and includes water supplies that are projected until 2035.

### *4-2. Groundwater*

Part of the District's service area includes the Escondido Valley Groundwater Basin 9-9. Although groundwater in this basin can be generally found at depths less than 50 feet, it is generally sodium chloride in type with subordinate amounts of magnesium, calcium, bicarbonate, and nitrate ions (DWR 1967). TDS content ranges from 250 to more than 5,000 mg/L (DWR 1967). The total estimated storage capacity is 24,000 acre-feet (AF) (DWR 1975).

Today, the District relies on SDCWA for its potable water supplies. The District has completed a study for the Indirect Potable Reuse Project (Water Factory). The purpose of the Project is to increase District water reliability using recycled water as a source enhancement in the groundwater basin. The Water Factory will provide basin restoration, enhance emergency response, and increase water supplies to meet customer demands.

The Project allows for secondary treated and Title 22 water to be delivered directly in to the District's recycled water system for groundwater recharge. This water will be processed with advanced treatment, and ultimately made available for potable uses. The amounts pumped from the groundwater basin will be proportional to those quantities delivered into the groundwater basin. Table 18 below shows the volume of potable water that would be pumped from the basin.

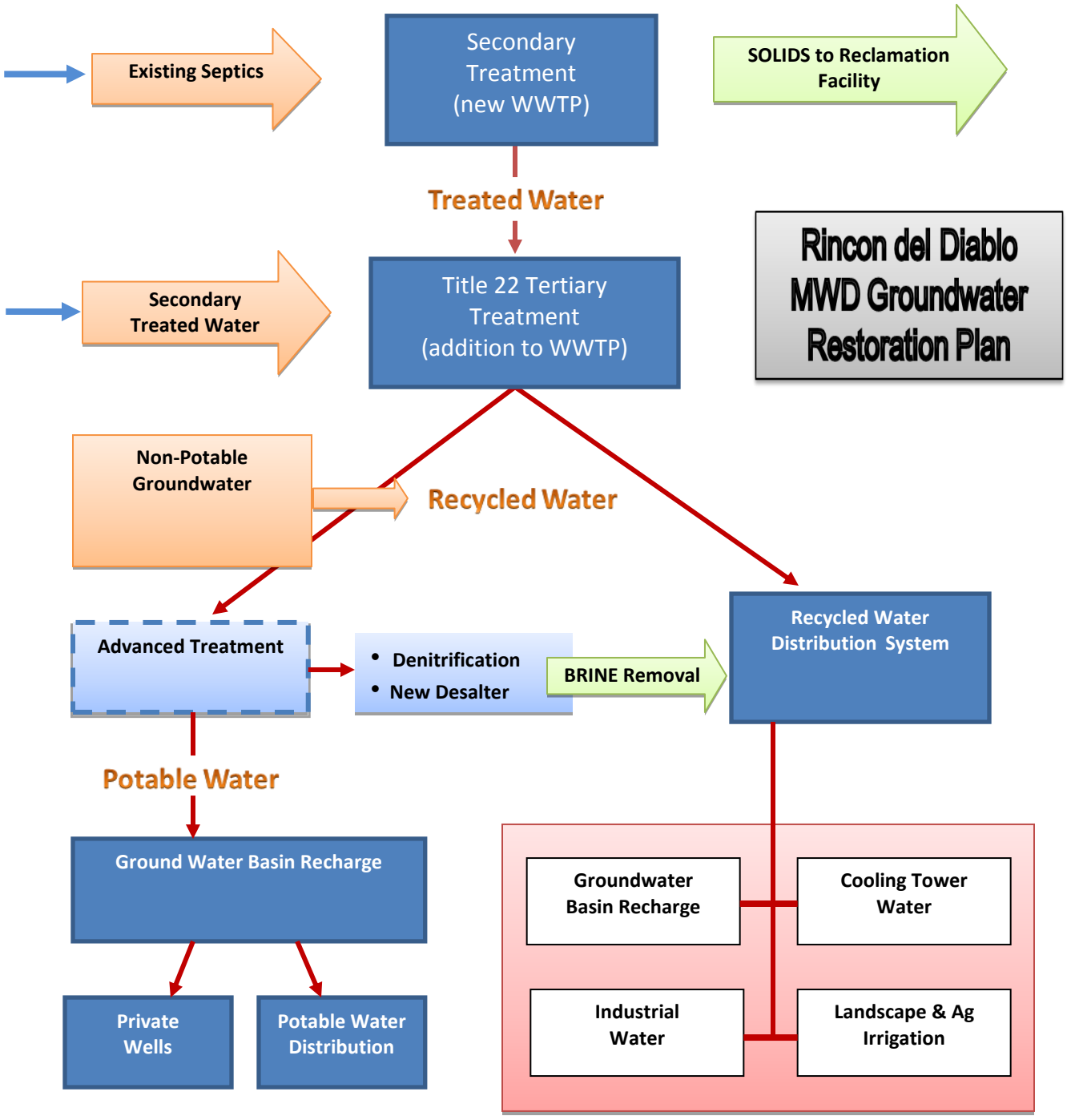
**Table 18. Groundwater – Volume Projected to be Pumped From Groundwater Basin 9-9**

| Water Type | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|
| Potable | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| Recycled | 0 | 0 | 0 | 0 | 0 |
| **Percent of Total Water Supply** | 21 | 26 | 31 | 35 | 39 |
| **Units:** Acre feet | | | | | |

The Project is currently in early implementation. The District has conducted water quality and hydrologic modeling studies to estimate flow, storage, and production yield. The installation of test wells and pump testing are expected to occur in early 2012.

The Project schematics are depicted in Diagram 6.

*Diagram 6.* **Rincon del Diablo MWD Groundwater Restoration Plan**
Water Factory Project




### *4-3. Transfer Opportunities*

The District's distribution system contains interties with adjacent water retailers in the event of an emergency. Exchanges or transfers with these interties are specifically for short term events. Additional water supplies for future use, accessible from these interties, are not anticipated at this time.

### *4-4. Desalinated Water Opportunities*

As reported in its 2005 UWMP, the District was a signatory of a letter of intent with a private investor-owned company, Poseidon Resources Corporation (Poseidon), for the purchase of reverse osmosis desalinated water. During the last five years, it became apparent that this particular project was not financially feasible and was better suited as a larger regional effort. This desalinated water proposal is currently being pursued by SDCWA as described in their 2010 UWMP as the Carlsbad Desalination Project (CDP).

The CDP is a seawater desalination plant and conveyance pipeline located at the Encina Power Station in Carlsbad. The CDP has been in development since 1998 and was incorporated into the SDCWA's 2003 Water Facilities Master Plan and the 2005 UWMP. Most required permits and environmental clearances have been secured and, when the facility has been completed, will provide an alternative for reliable local supply of 56,000 AF/YR for the region. However, the energy demands and environmental impacts of this facility have made other water supplies, such as the District's Water Factory, appear to be more desirable.

In July 2010, the SDCWA Board approved a Term Sheet between the Water Authority and Poseidon and directed its staff to prepare a Water Purchase Agreement based on its provisions. Key terms for a potential Water Purchase Agreement between SDCWA and Poseidon include the following:

- The term of the agreement will be for 30 years once commercial operation begins, subject to early buyout provisions beginning at 10 years.
- SDCWA will shift the risks associated with the design, permitting, financing, construction, and operation of the project to Poseidon.
- The price for water will be based on the actual cost of production.
- There will be the option to buy the entire plant beginning 10 years after the start date for commercial operation at a price to be specified in the water purchase agreement, as well as the right to purchase the plant at the end of the 30-year water purchase agreement term for $1. This ensures eventual public ownership of the plant, securing long-term price certainty and regional public benefit from ratepayers' past investments in the plant through 30 years of water purchase payments.

The SDCWA Board is expected to consider the Water Purchase Agreement by late 2011. The Project is expected to be completed and online by early 2016.

### *4-5. Recycled Water Opportunities*

Although the District provides recycled water to its customers for landscape irrigation and industrial use, the District is not a waste water collection or treatment agency. Current recycled water supplies are purchased directly from the City's Hale Avenue Resource Recovery Facility (HARRF).

HARRF is an activated sludge, secondary treatment facility, consisting of physical, biological, and chemical treatment methods, which includes screening, sedimentation, chemical precipitation, and biological processes. HARRF is designed to treat a flow of 18 million gallons per day (MGD). HARRF processes wastewater from the City and the Rancho Bernardo area of the City of San Diego. Operating 24 hours a day, the average daily flow is 15.6 MGD, which is comprised of Escondido's flow of 11.8 MGD and Rancho Bernardo's flow of 3.8 MGD.

After treatment, the wastewater effluent becomes a high-quality water product. The effluent is discharged from the HARRF to the Pacific Ocean via a 14-mile long land outfall pipeline that connects to an ocean outfall pipeline near San Elijo Lagoon. The effluent exits the outfall pipeline approximately 1.5 miles offshore through diffuser ports 110-feet deep in the Pacific Ocean. The City sends the organic bio-solids, to Yuma, Arizona for beneficial reuse as a soil amendment. Currently, the District's supplies of recycled water are limited by the HARRF's capacity to produce recycled water.

**Table 19** below shows the District's determined feasibility of future potential uses of recycled water and an approximation of when these types of projects would be implemented.

**Table 19. Recycled Water – Potential Future Use**

| User Type | Description | Feasibility | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| **Agricultural Irrigation** | yes | Likely | | X | | | |
| **Landscape Irrigation** [1] | yes | Current Practice | X | | | | |
| **Commercial Irrigation** [1] | yes | Current Practice | X | | | | |
| **Golf course Irrigation** | yes | Likely | | X | | | |
| **Wildlife Habitat** | yes | Possible | | X | | | |
| **Wetlands** | yes | Possible | | X | | | |
| **Industrial Reuse** [1] | yes | Current Practice | X | | | | |
| **Groundwater Recharge** | yes | Likely | X | | | | |
| **Seawater Barrier** | no | Not Likely | | | | | |
| **Geothermal/Energy** | no | Not Likely | | | | | |
| **Indirect Potable Reuse** | yes | Likely | X | | | | |
| **Construction** | yes | Likely | X | | | | |
| **Fire Fighting** | yes | Likely | X | | | | |
| | | | | | | | |
| **Units:** Acre feet | | | | | | | |

### *4-6. 2005 UWMP Projections*

**Table 20** shows 2005 UWMP projections for 2010 recycled water use, compared to the actual recycled water use that occurred in FY 2010. In 2005, the projections for recycled water for the purposes of landscape irrigation were overestimated by 258 AF per year. When recycled water was originally considered for this specific use, accounts were identified that were near the proximity of the recycled water distribution system. The master plan included more sites than were actually retrofitted to use recycled water. The primary cause of this is due to the stringent recycled water rules unique to San Diego County as enforced by the San Diego County Department of Health, making the use of recycled water too cumbersome.

In 2005, the District anticipated the construction of a commercial complex and a hospital facility that would both require recycled water for cooling towers. At the time the 2005 UWMP was written, it was believed that these facilities would require a combined total of 3,622 acre feet of recycled water per year. Once the commercial facility was completed and in service, actual water use was less than anticipated due to efficiencies realized by the facility during construction. The construction of the hospital facility was delayed and is anticipated to be completed in 2012. The discrepancy of 537.8 acre feet for the projections made in the 2005 UWMP are due to these factors. Additionally, the value of recycled water as a resource has changed. Once, recycled water was a water disposal alternative.

Now it is a valued resource in a water portfolio. Traditional concepts for recycled water are being challenged. Destruction or disposal of a high quality product is considered wasteful.

| Table 20. Recycled Water – 2005 UWMP Use Projections Compared to 2010 Actual | | |
|---|---|---|
| **User Type** | **2010 Actual Use** | **2005 UWMP Projection for 2010** |
| **Agricultural Irrigation** | 0 | 0 |
| **Landscape Irrigation** | 194.0 | 452 |
| **Commercial Irrigation** | 0 | 0 |
| **Golf Course Irrigation** | 0 | 0 |
| **Wildlife Habitat & Wetlands** | 0 | 0 |
| **Industrial Reuse** | 3,084.8 | 3,622 |
| **Groundwater Recharge / Seawater Barrier** | 0 | 0 |
| **Geothermal/Energy** | 0 | 0 |
| **Indirect Potable Reuse** | 0 | 0 |
| **Total** | **3,278.8** | **4,074** |
| **Units:** Acre feet | | |

The District currently encourages the use of recycled water through financial incentives. Recycled water rates are significantly less than potable rates, and meter charges are one half of those for potable water. Additionally the District reminds customers that recycled water is a source of water less likely to be interrupted. In the past, some recycled connections were provided to the customer at no cost, funded by grants received by the District. The District will continue to seek grant opportunities and will be considering a no-to-low interest loan program in order to make the recycled water conversion more feasible for its customers. Additionally, the District will be reviewing its water conservation ordinance to update policies on the use of recycled water.

Table 21 shows the various methods the District will be implementing in order to increase the number of recycled water connections. Easing of county-wide recycled water use policies would allow the District to offset potable water used for construction, to recycled water. The availability of grants received, and loans funded by the District, would expedite the connection of recycled water to more homeowner associations and mobile home park landscapes.

| Table 21. Methods to Encourage Recycled Water Use | | | | | | |
|---|---|---|---|---|---|---|
| **Actions** | **Projected Results** | | | | | |
| | **2010** | **2015** | **2020** | **2025** | **2030** | **2035** |
| Meet with county to strategize and ease regulatory processes | 33.5 | 35.0 | - | - | - | - |
| Grants and loans to help reduce cost of retrofits | 258.0 | undetermined | - | - | - | - |
| | | | | | | |
| **Units:** Acre feet | | | | | | |

### *4-7. Future Water Projects*

Table 22 shows the reliability of water supplies in 2015 that would be realized should the early phases of the Water Factory Project be implemented. Since the source of water for this project originates

from recycled water facilities, which is fairly consistent in dry years, the resulting supply of indirect potable water should be fairly consistent from normal year to single and multiple dry years.

**Table 22. Future Water Supply Projects, 2015**

| Project Name | Projected Start Date | Projected Completion Date | Potential Project Constraints | Normal-Year Supply | Single-Dry Year Supply | Multiple-Dry Year First Year Supply | Multiple-Dry Year Second Year Supply | Multiple-Dry Year Third Year Supply |
|---|---|---|---|---|---|---|---|---|
| Water Factory | 2013 | 2015 | Environmental constraints such as: Water quality regulatory issues | 2,000 to 4,000 | 2,000 to 4,000 | 2,000 to 4,000 | 2,000 to 4,000 | 2,000 to 4,000 |
| | | | | | | | | |

**Units:** Acre feet

## SECTION 5 – WATER SUPPLY RELIABILITY AND WATER SHORTAGES CONTINGENCY PLANNING

### *5-1. Water Supply Reliability*

Although MWD has been the sole supplier of water to SDCWA, past water shortages have served as a catalyst for SDCWA to pursue opportunities to diversify their water supply sources with regionalized water supplies. SDCWA continues to explore and develop new local supplies and core water transfers. The District is also pursuing an increased water portfolio by developing local water supplies, specific to Rincon, such as the Water Factory and conjunctive use of groundwater in local basins.

Regardless of the number of sources of water within the District's portfolio, water supplies, whether potable or recycled, are subject to inconsistencies that can affect the quantity of water at any given time. Those inconsistencies include limitations due to pumping, contracts, or agreements, legal issues, environmental issues, water quality issues, climatic drought, and emergency interruptions. **Table 23** summarizes these inconsistencies for both potable and recycled water.

**Table 23. Factors Resulting in Inconsistency of Supply**

| Water Supply Sources | Specific Source Name (if any) | Limitation Quantification | Legal | Environmental | Water Quality | Climatic | Additional Info |
|---|---|---|---|---|---|---|---|
| Potable | SDCWA | - | yes | yes | yes | yes | - |
| Recycled | City | HARRF capacity | yes | yes | yes | no | - |

**Units:** Acre feet

### *5-2. Water Shortage Contingency Planning*

On August 12, 2008 the District Board of Directors passed Ordinance 08-120 – "Drought Response Plan." The Response Plan, attached to this report as **Appendix F**, was developed to provide a response strategy as required by the California Water Code, by establishing methods and procedures to ensure that, in a time of shortage, available water resources are put to maximum beneficial use, and that the unreasonable method of use is prevented. The Response Plan contains four levels, and is consistent with SDCWA modeling, and supported by regional messaging. **Table 24** contains examples of prohibitions and the stages of enforcement.

| Table 24. Water Shortage Contingency – Rationing | |
|---|---|
| **Examples of Actions** | **Stage When Enacted** |
| Voluntary conservation | **Level 1** |
| Customers may be issued a water use target that reflects a mandatory reduction.<br>Irrigation is limited to hours between 7:00 pm and 9:00 am with three or less start times per week. Leaks on the customer's side of the meter must be repaired within 72 hours of notification. | **Level 2** |
| Customer may be issued a new water target that reflects an increase in mandatory reduction.<br>Irrigation is limited to two or less start times per week.<br>Leaks on the customer's side of the meter must be repaired within 24 hours of notification. | **Level 3** |
| Customer may be issued a new water target that reflects an increase in mandatory reduction.<br>Irrigation is limited to one start time per week.<br>Water service will be shut off if noticeable leaks are noted on the customer's side of the meter. | **Level 4** |

Table 25 shows the levels of reduction that are required and the resulting penalties if compliance is not achieved. In Levels 2-4, continual non-compliance will result in the installation of a flow restrictor or discontinuance of service.

| Table 25. Water Shortage Contingency – Consumption Reduction Methods | | |
|---|---|---|
| **Stage** | **Stage When Enacted** | **Penalty** |
| Level 1 | Voluntary 10% reduction | None |
| Level 2 | Mandatory 11-20% reduction | $200 for each violation |
| Level 3 | Mandatory 21-30% reduction | $600 for each violation |
| Level 4 | Mandatory 31% or more reduction | $1,000 for each violation |

On June 30, 2009, the District implemented a Level Two – Drought Alert, in part due to the SDCWA Level 2 declaration on April 23, 2009. The SDCWA declaration mandated an 8% reduction in water deliveries to each of its member agencies. After nearly two years of maintaining a Level two – Drought Alert, the District's water sales decreased by approximately 16%. Concurrent rate increases from MWD and SDCWA likely contributed to this decrease in sales.

The District has considered the financial implications of both long-term and short-term water shortages. Currently, the District's commodity rate comprises approximately 70% of the District's revenues, while fixed charges are approximately 30%. In short-term water shortages (less than 6 months), the fluctuation of revenue would be managed through the District's reserve funds. Longer shortages however, would require an adjustment of the current rate structure or significant restructuring of District operations.

### *5-3. Water Quality*

As required by federal and state governments, the District publishes a Consumer Confidence Report (CCR) each year. The CCR lists all contaminants found in District water, the source of those contaminants, testing standards that must be met, a range of testing results, and noncompliance events that occurred, if any. The CCR is mailed to all District customers and is posted on the District website on an annual basis.

Should short-term water quality issues create an interruption in water supplies, the District would respond accordingly and would implement a boil order or discontinue use order, as required. Long-term shortages involving water quality would be addressed through water exchanges with neighboring water agencies and through allocations/mandatory reductions.

ID1

Currently, the District imports all of its potable water from SDCWA. SDCWA in turn purchases its water from MWD. MWD imports its water from two sources, a 242-mile aqueduct which transports Colorado River water from Lake Havasu to southern California and a 444-mile aqueduct that transports water from the Sacramento-San Joaquin Delta to Lake Skinner located in Riverside County. The water is blended and treated before delivery into the District's system.

In December of 2002, MWD completed its source water assessment of its source water. Colorado River supplies are considered to be most vulnerable to recreation, urban/stormwater runoff, increasing urbanization, and wastewater. State Water Project supplies are considered to be most vulnerable to urban/stormwater runoff, wildlife, agriculture, recreation, and wastewater.

IDA

In December 2005, the City prepared a Sanitary Survey Update of the local watershed. The survey considered the watershed vulnerable to residential septic facilities, highway runoff, agriculture, and recreational activities.

### *5-4. Drought Planning*

If MWD, SDCWA, and District supplies are developed as planned, along with compliance of the Water Conservation Bill of 2009, no shortages are anticipated within the District's service area in a normal year through 2035. As part of preparation of its UWMP, SDCWA confirmed the District's demands, and in turn, MWD has confirmed SDCWA demands. MWDs demands are shown to adequately cover the demands for all for the San Diego region.

**Table 26** Shows the demand and supply comparisons for a normal year. Any short fall from locally developed potable water will come from SDCWA.

**Table 26. Supply and Demand Comparison – Normal Year**

| | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|
| **Supply Totals (from Table 17)** | 9,400 | 9,600 | 9,800 | 10,000 | 10,100 |
| **Demand Totals (from Table 10)** | 9,669 | 9,823 | 10,041 | 10,263 | 10,371 |
| **Difference** | 269 | 223 | 241 | 263 | 271 |
| **Difference as % of Supply** | 3% | 3% | 3% | 3% | 3% |
| **Difference as % of Demand** | 97% | 97% | 97% | 97% | 97% |
| **Units are in Acre-feet per Year** | | | | | |

Quantities of supplies derived from recycled water or brackish desalination projects are considered constant and are relatively unaffected by a dry year. SDCWA's existing and planned supplies from the Imperial Irrigation District transfer, sea water desalination, and canal lining projects are considered as "drought-proof" as discussed in Section 4 of the SDCWA UWMP. Information contained in MWD's UWMP also shows that previous normal or wet years prior to a dry year would cover potential shortfall

in core supplies. MWD would have enough water in storage and would not need to allocate its supplies.

Indirect potable water resulting from the District's Water Factory should be "drought proof". The projections for the single dry year in **Table 27** are based on past experiences during the 1987-1992 and 2009-2010 drought years. In a single dry year, the District would actively promote a "voluntary 10% reduction in use" message. Past experience during a single dry year indicates District customers have responded and exceeded voluntary calls for conservation. No shortage of supplies would be anticipated in the District's service area during a single dry year.

**Table 27. Supply and Demand Comparison – Single Dry Year**

| | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|
| **Supply Totals** | 9,400 | 9,600 | 9,800 | 10,000 | 10,100 |
| **Demand Totals** | 9,669 | 9,823 | 10,041 | 10,263 | 10,371 |
| **Difference** | (269) | (223) | (241) | (263) | (271) |
| **Difference as % of Supply** | -3% | -3% | -3% | -3% | -3% |
| **Difference as % of Demand** | -1% | -2% | -2% | -3% | -3% |

**Units**: Acre-feet per Year

**Table 28. Supply and Demand Comparison –Multiple Dry-Year Events**

| | | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| **Multiple Dry-Year First Year Supply** | **New Sources** | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| | **Supply Totals** | 9,400 | 9,600 | 9,800 | 10,000 | 10,100 |
| | **Demand Totals** | 9,669 | 9,823 | 10,041 | 10,263 | 10,371 |
| | **Difference** | (269) | (223) | (241) | (263) | (271) |
| | **Difference as % of Supply** | -3% | -3% | -3% | -3% | -3% |
| | **Difference as % of Demand** | -1% | -2% | -2% | -3% | -3% |
| **Multiple Dry-Year Second Year Supply** | **New Sources** | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| | **Supply Totals** | 9,400 | 9,600 | 9,800 | 10,000 | 10,100 |
| | **Demand Totals** | 10,055 | 10,216 | 10,443 | 10,674 | 10,790 |
| | **Difference** | (655) | (616) | (643) | (674) | (690) |
| | **Difference as % of Supply** | -7% | -6% | -7% | -7% | -7% |
| | **Difference as % of Demand** | -7% | -6% | -6% | -6% | -6% |
| **Multiple Dry-Year Third Year Supply** | **New Sources** | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 |
| | **Supply Totals** | 9,400 | 9,600 | 9,800 | 10,000 | 10,100 |
| | **Demand Totals** | 8,748 | 8,888 | 9,085 | 9,286 | 9,474 |
| | **Difference** | 652 | 712 | 715 | 714 | 726 |
| | **Difference as % of Supply** | 7% | 7% | 7% | 7% | 7% |
| | **Difference as % of Demand** | 8% | 8% | 8% | 8% | 8% |

**Units: Acre-feet per year**
This data included indirect potable water from a project that is not yet implemented. Rincon will utilize local supplies as feasible. Shortfalls will be augmented with SDCW imported supplies.

The drought that occurred from 1987 to 1992 motivated coordinated planning for future drought situations. Both MWD and SDCWA developed drought management plans to fairly and adequately deliver water to their member agencies. Today, both wholesalers and the District work together and independently in supply reliability planning. Table 29 shows the basis of the water year data discussed in this section.

For multi-year analysis, the planning assumption is that MWD will be allocating supplies to its member agencies according to its Water Supply Allocation Plan. Under parameters assumed in multi-dry year analysis, and by past experience, some level of shortage could potentially be experienced.

SDCWA has invested in carryover storage supplies to assist in achieving reliability in dry years as discussed in its 2010 UWMP. SDCWA's carryover supplies include regional surface water storage and groundwater storage in the California Central Valley. In years where shortages are experienced after expenditure of SDCWA carryover supplies, the District would respond to allocations in water demands as mandated by MWD and/or SDCWA. Additionally, the District would implement its Drought Response Plan accordingly.

**Table 29. Basis of Water Year Data**

| Water year type | Base year(s) |
|---|---|
| Average Water Year | 2006 |
| Single-dry water year | 1989 |
| Multiple-dry water years | 1989-1992 |

Table 30 shows historic reliability based on experience and Table 31 shows reliability based on current supply reliability. From 1988 to 1989, water use demands increased by 15% (most likely due to area growth). An increase of 4% in water demands occurred from 1989 to 1990 (first dry year). At the end of FY 1991 and FY 1992, there were decreases in water demands (from the previous year's usage) of 13% and 19% respectively.

**Table 30. Supply Reliability – Historic Conditions**

| Average/normal water year | Single dry water | Multiple dry water years | | | |
|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Year 3 | Year 4 |
| | 6,000 | 7,020 | 7,380 | 6,360 | 5,160 |
| % of average/normal year: | 100% | 117% | 123% | 106% | 86% |

**Table 31. Supply Reliability – Current Water Resources**

| Water supply sources 1 | Average/normal water year supply | Multiple dry water year supply | | |
|---|---|---|---|---|
| | | Year 2011 | Year 2012 | Year 2013 |
| San Diego County Water Authority | 6,000 | 7,020 | 7,380 | 6,360 |
| Recycled | 3,300 | 3,300 | 3,300 | 3,300 |
| | | | | |
| Percent of normal year | 100% | 110% | 113% | 104% |

### *5-5. Drought Management Plan*

The District's Drought Management Plan identifies the thresholds and actions to support conservation, whether short or long-term, and is attached to this Plan as **Appendix F**. The stages and mandated reductions are summarized in **Table 32.**

**Table 32. Water Shortage Contingency – Rationing Stages to Address Water Supply Shortages**

| Stage number | Water supply conditions | % of shortage |
|---|---|---|
| **Level 1** | Normal water year – Voluntary reduction | 10% |
| **Level 2** | Multiple dry years – Mandatory reduction required | 11-20% reduction |
| **Level 3** | Multiple dry years – Mandatory reduction required | 21-30% reduction |
| **Level 4** | Multiple dry years – Mandatory reduction required | 31%+ reduction |

## SECTION 6 – DEMAND MANAGEMENT MEASURES

### *6-1. Best Management Practices*

The District is a signatory to the Memorandum of Understanding (MOU) Regarding Urban water Conservation in California, therefore is a member of the California Urban Water Conservation Council (CUWCC). As a member of the CUWCC, the District has agreed to make a good faith effort to implement the Best Management Practices (BMPs) in order to address the Demand Management Measures (DMM).

In December 2008, the BMPs were substantially revised by the CUWCC and updated in order to reflect advances and changes in water conservation practices and technologies. In 2005, there were 14 BMPs. These BMPs are now divided into five categories. Two of these categories, *Utility Operations* and *Education have* been labeled as "Foundational BMPs" because they have been classified as essential water conservation activities that must be implemented by all signatories to the MOU as on-going practices.

The remaining categories are considered as "Programmatic BMPs" and are further broken down by user classifications. These BMPs must be addressed, and implemented, and reported to the CUWCC on a bi-annual basis. The Foundational BMPs for FY 2009 and FY 2010 have been submitted to CUWCC and the CUWCC's notification of compliance is pending. The Foundational BMPs are included as **Appendix G** in this report.

### *6-2. Per Capital Water Use*

Since the commencement of SB X7-7, which requires a reduction of 20% in per capita water usage by 2020, an alternative to programmatic BMP compliance is to verify that current per capita water usage is on track. The verification that the District is on track, utilizing Method 1 from the State of California Department of Water Resources' *Methodologies for Calculating Baseline and Compliance Urban Per Capital Water Use* is included as **Appendix H** in this report.

## SECTION 7 – CLIMATE CHANGE

Climate change has become an increasingly important issue to water utilities and both the state and federal legislators. Changes in weather patterns which deviate from historical cycles could significantly affect water planning and demands. Beyond the debate associated with the sources and causes of increasing concentrations of greenhouse gasses, research identifies potential future risks to water resources. The District recognizes the importance of adapting to climate change and participates in SDCWA's regional research efforts and Greenhouse Gas Mitigation programs, as well as incorporating practices that reduce the overall impacts of daily operational activities.

### *7-1. Regional Efforts*

Those activities addressed by SDCWA, that address climate change concerns on a regional basis include the following:

- Knowledge Sharing and Research Support – SDCWA is the founding member of the Water Utility Climate Alliance, which pursues and monitors climate change-related research, technology, programs, legislation, and other activities such as communications and consultations.

- Planned Research – Currently, SDCWA is working in cooperation with the Scripps Institution of Oceanography and the San Diego State University to better understand the influences climate change may have on water supplies in the San Diego County region.

- Implementation of Programs and Policies – To date, SDCWA has focused on exploring water supply and energy relationships to increase efficiencies of both resources. Additionally, SDCWA has joined the Climate Registry.

- Reduction of the number of fleet vehicles, replaced some fleet vehicles with hybrids, developed solar power at specific facilities, and is pursuing other renewable water and energy programs.

Detailed descriptions of SDCWA programs are included in the SDCWA's Urban Water Management Plan, which is included as **Appendix D** in this report.

### *7-2. Local Efforts*

The District has begun developing a Strategic Sustainability Plan, which should be completed in late 2011. The purpose of this plan is to ensure the District remains a sustainable water utility by continually examining our product, policies, and procedures, while exploring ways to increase positive or neutral effects on the environment, economy, and customers we serve. Prior to this Sustainability Plan however, the District has implemented several projects to gain some "early wins." Within its own facilities, the District has converted its landscape irrigation to recycled water, installed dual-flush toilets and waterless urinals, and is a SDG&E Peak Power Program participant. Other "early wins" that were implemented within the District's infrastructure includes the conversion of a pump station to variable frequency drive, the reduction of the number of fleet vehicles, and the implementation of automated meter intelligence (AMI). Future projects include the use of alternate fuel vehicles and solar panels at the District's facilities.

The District has also embraced a no-net-demand concept for development. During allocations, the District's off-set program enabled development to continue by identifying and funding off-setting

water reductions. These programs reduced the need for additional imported water, and the impacts of pumping from several hundred miles away.

## SECTION 8 – COMPELTED UWMP CHECKLIST

This section is included for the expressed purpose of ensuring that all reporting requirements are addressed within the District's 2010 UWMP. Below, each Section is followed by DWR's numbered *Required Elements* that were addressed within that section. DWR's numbered *Required Elements* are listed below according to the section in which they were addressed.

### *Section 1*

*#4 Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable (10620(d) (2)).*

*#6 Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision (10621 (b)).*

*#55 Each urban water supplier shall encourage the active involvement if diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan (10642).*

*#56 Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publically owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned city or county an equivalent notice within its service area (10642).*

*#7 The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640) (10621(c)).*

*#54 The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city of county within which it provides water supplies no later than 60 days after submission of its urban water management plan (10635(b)).*

*#57 After the hearing, the plan shall be adopted as prepared or as modified after the hearing (10642).*

*#58 An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forward in its plan (10643).*

### *Section 2*

*#8 Describe the service area of the supplier (10631 (a)).*
*#9 (Describe the service area) climate (10631 (a)).*
*#10 (Describe the service area) current and projected population…The projected population estimates shall be based upon data from the state regional, or local service agency population projections within the service area of the urban water supplier…(10631 (a)).*

*#11 (population projections) shall be in five-year increments to 20 years or as data is available.*
*#12 Describe…other demographic factors affecting the supplier's water management planning (10631 (a)).*

### *Section 3*

*#25 Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales t other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural (10631(e) (1) and (2)).*

*#34 The water use projections required by Section 10631 shall include projected water use for single-family and multi-family residential housing needed for lower income households, as defined in Sections 50079-5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier (10631.1(a)).*

*#1 An urban retail water supplier shall include in its urban water management plan..due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data (10608.20(e)).*

*#33 Urban water supplier that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections for that agency for that source o water in five-year increments to 20 years or as far as the data us available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c) (10631 (k)).*

### *Section 4*

*#13 Identify and quantify, to the extent practicable, the existing and planned sources of water available to the suppler over the same five-year period increments described in subdivision (a) (10631(b)).*

*#4 (is) groundwater…identified as an existing or planned source of water available to the supplier…(10631(b))?*

*#15 (provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management (10631 (b) (1)).*

*#16 (Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater (10631(b)(2)).*

*#17 For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree by the court or the board (10631(b)(2)).*

*#18 (Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree (10631(b)(2)).*

*#19 For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official department bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition (10631(b)(2)).*

*#20 (Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the last five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to historic use records (10631(b)(3)).*

*#21 (Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to historic use records (10631(b)(4)).*

*#24 Describe opportunities for exchanges or transfers of water on a short-term or long-term basis (10631(d)).*

*#31 Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply (10631(i)).*

*#30 (Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years,. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program (10631(h)).*

### *Section 5*

*#5 An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions (10620(f)).*

*#23 For any water resource that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable (1063(c)(2)).*

*#37 Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, and earthquake, or other disaster (10632(c)).*

*#38 Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.*

*#39. Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50% reduction in water supply (10632(e)).*

#40 Penalties or charges for excessive use, where applicable (10632(f)).
*#41 An analysis of the impacts of each of the actions and conditions described on subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments (10632(g)).*

*#42 A draft water shortage contingency resolution or ordinance (10632(h)).*

*#52 The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in sub-division (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability (10634).*

*#22 Describe the reliability of the water supply and vulnerability to seasonal climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years (10631 (c)(1)).*

*#35 Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50% reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage (10632(a)).*

*#36 An estimate of the minimum water supply available during each of the next tree water years based on the driest three-year historic sequence for the agency's water supply (10632(b)).*

*#43 A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis (10632(i)).*

*#53 Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single-dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier (10635(a)).*

### *Section 6*

*#26 (describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) water survey programs for single-family residential and multifamily residential customers; (B) residential plumbing retrofit; (C) system water audits, leak detection, and repair; (D) metering with commodity rates for all new connections and retrofit of existing connections; (E) large landscape conservation programs and incentives; (F) high efficiency washing machine rebate programs; (G) public information programs; (H) school education programs; (I) conservation programs for commercial, industrial, and institutional accounts; (J) wholesale agency programs; (K) conservation pricing; (L) water conservation coordinator; (M) water waste prohibition; (N) residential ultra-low-flush toilet replacement programs (10631(f)(1) and (2).*

*#27 A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan (10631(f) (3)).*

*#28 An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand (10631(f) (4)).*

*#29 An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (s) include a cost-benefit analysis, identifying total benefits and total costs; (3) include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation (10631(g)).*

### *Section 7*

*Optional*