



2005

URBAN WATER MANAGEMENT PLAN

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List of Abbreviations, Acronyms, and Terms of Art

AAC - All American Canal

Act - Urban Water Management Planning Act

BMP - Best Management Practices

Board - Board of Directors

CC - Coachella Canal

CCR - Consumer Confidence Report

CII - Commercial, Industrial, and Institutional

City - City of Escondido

CUWCC - California Urban Water Conservation Council

District - Rincon del Diablo Municipal Water District

DMP - Drought Management Plan

EOO - Emergency Operation Organization (plan)

ET_o - Reference Evapotranspiration

HOA - Home Owners' Association

ID - Improvement District

IID - Imperial Irrigation District

MGD - One Million Gallons per Day

MOU - Memorandum of Understanding

MWD - Metropolitan Water District of Southern California

Plan - Urban Water Management Plan

Poseidon - Poseidon Resources Corporation

SB - Senate Bill

SDCWA - San Diego County Water Authority

Agency Coordination

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AGENCY COORDINATION

Law: 10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640). (b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year it has become an urban water supplier. (c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies. (d) 1. An urban water supplier may satisfy the requirements of this part by public participation in area wide, regional, watershed, or basin-wide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use. 2. 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. (e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies. (f) 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.

Plan Preparation

The District's Public Services Information Officer coordinated the development of this Plan with the assistance of the District's Board of Directors (Board), General Manager, Director of Operations, and Director of Finance.

During 2005, the District also completed a comprehensive *Water Master Plan* to evaluate its existing and future service needs, to assist in the development of a strategy for maintaining reliable water service. Data from that plan was also used in this document.

Public Participation

Rincon del Diablo Municipal Water District (District) has encouraged community participation in its urban water management planning efforts since 1985. The Board, which is comprised of elected community representation, has been actively involved since the first plan was developed in 1985. Additionally, public meetings are held on the second Tuesday of each month at 7:00 P.M., giving the community at large an opportunity to provide input and participation in the urban water management planning efforts.

Coordination with Appropriate Agencies

The District plans future water supplies through active participation with the development of the San Diego County Water Authority's (SDCWA) *regional* Urban Water Management Plan.

Rincon del Diablo Municipal Water District
2005 Urban Water Management Plan

As a member agency of SDCWA, the District's Board and staff participate in decisions made which affect the ability of the SDCWA to provide adequate water supplies.

The District imports 100% of its potable water from SDCWA. The District imports 100% of its recycled water from the city of Escondido's (City) Hale Avenue Resource Recovery Facility. The District shares in common its source water as well as local urban and agricultural interests with its neighboring water agencies. The development of this plan involved notification to the following agencies:

- San Diego County Water Authority
- City of Escondido, Water Utilities
- Vallecitos Municipal Water District
- Vista Irrigation District
- Valley Center Municipal Water District
- County of San Diego

Table 1 below summarizes the efforts taken by the District to include various agencies and its citizens in the planning process.

Table 1. Coordination and Public Involvement						
Entities	Coordination and Public Involvement Actions					
	Contacted for Assistance	Provided Assistance	Attended public meetings	Provided copy of draft	Commented on Plan draft	Posted notice of intent to adopt
Board of Directors	●	●	●	●	●	●
Wholesaler	●	●		●	●	●
Other Retailers	●			●		
General Public	●			●	●	●
Other				●		●

Notification

Individuals and agencies that participated in the development of this plan are listed in **Appendix A.**

Public - Notices of public meetings are posted at the District's administrative office as well as on the District's website. Copies of the draft plan were available at the District's office, the city library, and as a downloadable document on the

District's website. Customer participation was also solicited on bimonthly customer water bills.

Other Agencies - The District notified, in writing, the cities and county located within its sphere of influence for the preparation of this plan. See **Appendix A** for a listing of those agencies.

Miscellaneous

Law: **10621.** (a) *Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero. (b) Every urban water supplier required to prepare a plan pursuant to this part shall 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.*

10642. *Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. 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 the hearing shall be published... After the hearing, the plan shall be adopted as prepared or as modified after the hearing.*

Plan Adoption

The District prepared this **update** of its previous Plan (December, 2000) during the summer of 2005. As mandated, this plan must be updated at least once every five years on or before December 31, in years ending with "0" or "5".

This updated plan was adopted by the Board on December 13, 2005 after a public hearing and submitted to the California Department of Water Resources before December 31, 2005, within 30 days of the Board's approval, as required. Attached to the cover letter addressed to the Department of Water Resources and included as **Appendix B** are copies of the signed Resolution of Plan Adoption. The Plan includes all information necessary to meet the requirements of California Water Code Division 6, Part 2.6 (Urban Water Management Planning).

A copy of the adopted plan was also forwarded to the California State Library located in Sacramento, and to those cities and the county wherein the District distributes water.

Anticipated Plan Benefits

The District anticipates the 2005 Plan to be a foundational document and source of information for mandated SB 610 Water Supply Assessments and SB 221 Written Verifications of Water Supply. This plan will also serve as a source document that allows for tracking and trending of water use and conservation opportunities and activities.

Resource Maximization & Import Minimization

As stewards of a natural resource for the public trust, it is the District's mission to meet present and future needs in an environmentally and economically responsible manner, maintain infrastructure integrity, foster conservation, and maintain excellence in service. As a significant component of its mission, the District strives to maximize water use within its service area to reduce demand on water importation.

Other District documents that focus on resource maximization include: Rincon del Diablo Municipal Water District Water Master Plan; California Urban Water Conservation Council's Best Management Practices reporting; Water Supply Assessment & Verification Reports; District Ordinances; District website (www.rinconwater.org); Comprehensive Annual Financial Report; Recycled Water Agreement with the City of Escondido; water exchange agreements with the City of Escondido, Valley Center Water District, and Vista Irrigation District; and, conservation-based tiered pricing which includes water budgets for agricultural accounts.

Water Management

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Water Management

Level of Planning

Law: 10630. *It is the intention of the Legislature, in enacting this, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.*

This Plan was written to reflect the size and complexity of the District as further described in this section. All applicable elements required by the Act are discussed and historic information, as available, has been included.

Service Area Information

Law: 10631. *A plan shall be adopted in accordance with this chapter and shall do all of the following: (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. 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 and shall be in five-year increments to 20 years or as far as data is available.*

Population - In order to project how the District's water demands will make the transition from current demand to projected demands up to 2030, the District used population projections contained in its 2005 Water Master Plan. These figures were derived from SANDAG's Series 10 data and are summarized in **Table 2** below.

2005	2010	2015	2020	2025	2030
28,220	29,995	32,052	34,115	35,712	37,314

Climate - The District is located in an inland area between marine and desert climates with a south coast marine to desert transition, as described by the State of California, Department of Water Resources. The summer is moderate and dry with temperatures often exceeding 90 degrees Fahrenheit. The region is subject to wide variations in annual precipitation, and has experienced seasonal wildfires.

Table 3 shows historical climate data for the area as reported by the Western Regional Climate Center - Station #047874. Monthly evapotranspiration (ETo) data and measurable rainfall, both of which are measured in inches, are listed as reported by the California Irrigation Management Information System - Station #153, Escondido San Pasqual Valley.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Monthly* Average ETo (inches)	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)	2.70	3.37	2.79	1.07	.28	.11	.14	.06	.22	.68	1.26	1.69	14.38"
Average** Temperature (Fahrenheit)	71.0	71.2	72.5	76.7	79.3	84.4	90.2	91.9	90.3	83.6	76.4	71.0	79.9

* As reported by the California Irrigation Management Information System (www.cimis.water.ca.gov/cimis/welcome.jsp)
 ** As reported by the Western Regional Climate Center (<http://www.wrcc.dri.edu/CLIMATEDATA.html>)

Other Demographic Factors - The District is located in northern San Diego County, approximately 25 miles north of the city of San Diego, California. The terrain within the District's service area is quite varied and ranges from 400 to 1,250 feet in elevation.

The Parent District boundary encompasses approximately 27,000 acres (42 square miles), and serves through its two improvement districts (ID 1 and ID A), 9,553 acres with domestic, agricultural, and commercial/industrial water. The District's customers are located partially within the cities of Escondido, San Diego, and San Marcos, and partially within the unincorporated area of San Diego County.

Past - The District derives its name from Rancho Rincon del Diablo. In 1843, Juan Bautista Alvarado received the Rancho as a land grant after the area fell from the auspice of the Mission San Diego de Alcalá. The land, no longer part of the Mission system was consider unblessed, hence the Spanish translation, "the devil's corner," or "the devil's lurking place." This tract of land contained 12,653 acres.

In 1885, a syndicate of businessmen purchased the Rancho and subdivided it into small farm tracts and the city of Escondido. During this period, agricultural operations included row crops, tree crops, and cattle. One year later, an irrigation district was formed and bonds were sold to develop a water supply system from the local San Luis Rey River. The Lake Wohlford dam was constructed and by 1905 the Escondido Mutual Water Company, a private entity, acquired the irrigation district facilities. The company continued to improve the diversion canal and distribution system to supply water to its stockholders for irrigation and domestic water uses.

Following World War II, the Escondido Valley experienced a period of rapid growth. It came at a time of continuing drought which heightened the need for additional water to support the growing residential community. Additionally, local citizens realized the need to import water to land further on the outskirts of the valley that did not have an adequate local supply. Colorado River water imported by public agencies, SDCWA and its supplier, the Metropolitan Water District of Southern California (MWD), was the best option. Because the Escondido Mutual Water Company was a private company, it was prohibited by law to receive water from a public supplier. Born from the need to import water was the formation of this public agency. On February 19, 1954, the Rincon del Diablo Municipal Water District was organized and incorporated under the provisions of the Municipal Water District Act of 1911.

Records from 1965 indicate that agricultural water constituted approximately 83% of all District water sales. Over the years the District, which once served chiefly agricultural operations, has slowly urbanized. At the end of fiscal year 2004, agricultural water sales amounted to 12% - with residential water sales representing the largest water sales category at 74% of the District's total sales.

Present - Today the District is comprised of 27 identified general land use categories. These classifications are used as planning tools to assist in estimating water use demands for both existing and future conditions within Rincon's service area as represented in **Table 4**. See **Appendix C** for a map showing the District's boundaries.

Future - The District's *Master Plan* indicates that build out within it's service area should occur by 2030, however, another shift in the main water user type is not expected.

Table 4. Rincon - General Land Use Summary*		
Land Use Category	Acreage 2004	Acreage 2030
Agriculture	403	0
Estate I	1713	1905
Estate II	1752	1757
Golf Course	13	13
Freeway	296	296
General Commercial	31	31
General Industrial	185	185
Historic Park	25	25
Light Industrial	6	6
Office	9	9
Open Space	14	14
Planned Commercial	53	53
Planned Industrial	307	307
Public Lands/Parks	68	68
Railroad/Trolley	19	19
Residential (4-6 DU)	123	123
Residential (4-8 DU)	47	47
Road	531	531
Rural I	903	903
Rural II	1108	1263
Rural Residential	3	33
School Site	86	86
Specific Planned Area	312	334
Suburban	508	508
Urban I	852	852
Urban II	131	131
Urban III	54	54
Total	9553	9553

Land use expected to increase over the next 30 years.

Land use expected to decline over the next 30 years.

*Taken from the District Master Plan - March 2005

Water Sources

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

The District's source for both potable and recycled water is through importation. The District currently purchases it's potable water from SDCWA and it's recycled water from the City's Hale Avenue Resource Recovery Facility. Additionally, the District maintains 34 interconnections with neighboring water districts to supplement localized portions of the

distribution system in the event of an emergency. These emergency interconnections, through short and long-term water exchanges with neighboring water districts, are currently closed or disconnected but are available should additional water supplies and/or emergency water backup be required.

**Table 5.
Current and Projected Water Supplies (Acre-Feet/Year)**

Water Supply Sources	2005	2010	2015	2020	2025	2030
Reclaimed Water SDCWA*	8,400	9,793	10,389	10,929	11,477	12,047
Total Acre-Feet/Year	307	4,074	4,074	4,074	4,074	4,074
TOTAL	8,707	13,867	14,463	15,003	15,551	16,121

* Municipal, industrial, and agricultural water demands as reported by SDCWA.

Current Sources - See Table 5 for current water quantities available to the District.

Potable - Currently Rincon's potable water source is SDCWA which serves as a sub-wholesaler to MWD. SDCWA purchases from MWD and this water is delivered into SDCWA's pipelines from MWD facilities located just south of the San Diego County/Riverside County line. The first San Diego aqueduct consists of Pipelines 1 and 2 which delivers filtered Colorado River water. The second San Diego aqueduct consists of Pipelines 3 and 5 which distributes raw water, and Pipeline 4 which carries filtered water. The filtered water carried through Pipelines 1, 2, and 4 originates from MWD's Lake Skinner Filtration Plant in Riverside County.

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 into San Diego County. MWD water is now a combination of Colorado River water and water from Northern California through the State Water Project. 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 considered the largest in terms of sales. SDCWA purchases 30% of MWD's total water supply.

Recycled Water - In an on-going effort to meet the demand for water within its service area, and in order to conserve potable water supplies, the District completed the installation of its recycled water distribution facilities in 2004.

The District's recycled water distribution system consists of approximately 4.5 miles of pipeline, two pumping stations, and conversion or installation of approximately 66 recycled water services.

Recycled water is conveyed from the City's system to the District's system through multiple interties. The terms for recycled water purchases are outlined in a 34-year agreement with subsequent 10-year renewals. See **Appendix D**.

The recycled water retrofit portion of the program is in its final phase and deliveries have begun. The water is slated for use on landscaped common areas of existing residential developments, public right-of-ways, school yards, and in 2006 - for industrial purposes. Although further investigation is necessary, the 2005 Master Plan estimates that beyond customers already identified, an additional 3% to 5% of the District's overall potable water demands could eventually be served by recycled water.

Future Water Sources - The District has no specified water supply projects it has committed to; however, **Table 6** reports possible supply options and the likelihood of feasibility in the future.

Water Supply Sources	Feasible	Non-Feasible
Ground Water Development		X
Water Transfers	X	
Increased Recycled Water	X	
Conservation	X	

Groundwater Development - Feasibility studies completed in the past indicate that groundwater development within the District's sphere of influence is not prudent due to water quality, and financial and engineering impediments.

As a member agency, the District looks to SDCWA to coordinate desalination projects, canal lining, storage transfer, water exchange, and conservation projects that directly and indirectly benefit District customers.

Water Transfers - The District is currently negotiating the conditions associated with the signing of a letter of intent with the Poseidon Resources Corporation (Poseidon) for the purchase of 7,700 acre-feet annually of reverse osmosis treated sea water.

Provided that both agencies enter into a mutually acceptable exchange agreement that will provide for a third party exchange partner to take delivery of the desalinated water from Poseidon, and in turn, deliver to the District a like-quantity of exchange water. Water deliveries would commence at a date as yet to be determined. See page 22 for additional information.

Increased Recycled Water - The District currently purchases a finite quantity of recycled water from the City, as reported in **Table 5**. The amount of recycled water available to the District is limited by the capacity of the City's treatment plant as well as by the demand obligations of the City's customers. Currently, the City produces 4 million gallons daily (mgd) of recycled water, however upon the Department of Environmental Health's approval of a new disinfection process, it expects to increase daily distribution to 9 mgd. Ultimately, the City's master plan projects that the facility will eventually produce between 27 and 28 mgd upon build out of the system.

The District continues to support the use of recycled water, and is committed to exploring any and all opportunities to increase the availability of recycled water to its customers.

Conservation - Water conservation is an integral component of the District's 2005 Plan as a long-term strategy for insuring adequate water supplies within its service area. The District continues to actively implement, to the best of its abilities, the California Urban Water Conservation Council's (CUWCC) Best Management Practices (BMPs) and SDCWA's Agricultural Efficient Water Management Practices.

In conjunction with SDCWA and its member agencies, conservation is a low-cost resource that assists in reducing the demand for imported water as well as reducing consumption during periods of high water demand.

The District's conservation efforts are described in detail in the Demand Management Measures section of this Plan.

Reliability of Potable Water Supplies

Law: *10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:... (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable... For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable. Provide data for each of the following: (1) An average water year, (2) A single dry water year, (3) Multiple dry water years.*

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier...(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

Reliability Assessment

Although MWD has historically been the sole supplier of water to SDCWA, circumstances have dramatically changed. After experiencing water shortages during the 1987-1992 drought, MWD and SDCWA began to pursue opportunities to diversify its water supply sources. SDCWA's Water Resources Plan, developed in 1993 and updated in 1997, emphasizes the development of local supplies and core water transfers. As such, SDCWA current and future projects include: IID Water Transfer, All-American Canal Lining Project, Coachella Canal Lining Project, Regional Seawater Desalination at Encina, and recycled water incentives for its member agencies. Projected benefits from these additional water supplies are estimated at 147,700 acre-feet per year by 2010.

Water Quality Impacts on Reliability

Law: *10634. The plan shall provide, 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 subdivision (a) of Section 10631 and the manner in which water quality affects water management strategies and supply reliability.*

The District imports 100% of its 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 in northern California to Lake Skinner located in Riverside County. The water is treated at the Robert A. Skinner Filtration Plant at Lake Skinner before delivery into the District's system.

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

The District realizes the importance of having in place, emergency plans that contain components to address water shortages caused by local water quality issues, whether by natural disaster or other events. Similarly, SDCWA has emergency response plans in place.

The District's emergency responses would be implemented as described in the Water Shortage Contingency section of this Plan.

Projected Normal Water Year Supply and Demand Comparison

Law: 10635. (a) 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 protected 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 the state, regional, or local agency population projections within the service area of the urban water supplier.

Table 7 below compares current and projected water supplies and projected normal

Table 7. Projected NORMAL Year Supply and Demand Comparison						
	2005	2010	2015	2020	2025	2030
Supply Total	8,707	13,867	14,463	15,003	15,551	16,121
Imported Water	7,300	9,801	10,262	10,635	11,046	11,512
Recycled Water	52	4,074	4,074	4,074	4,074	4,074
Demand Total	7,352	13,875	14,336	14,709	15,120	15,586
Difference	1,355	8	127	294	431	535
Difference as % of Supplies	16%	0%	1%	2%	3%	3%
Difference as % of Demand	18%	0%	1%	2%	3%	3%

demands. The results indicate that in average precipitation years, the District has more than sufficient water supplies to meet its customers needs through 2030. This is based on continued commitment to conservation programs and the use of recycled water.

Projected Single Dry Water Year Supply and Demand Comparison

According to MWD, hot, dry weather may generate water demands that are about 7% greater than normal. This percentage was used to generate the single dry year demands in **Table 8** below. Supplies should experience little to no effect due to a single dry year.

Table 8. Projected SINGLE DRY Year Supply and Demand Comparison						
	2005	2010	2015	2020	2025	2030
Supply Total	8,707	13,867	14,463	15,003	15,551	16,121
Imported Water	7,811	10,488	10,980	11,380	11,819	12,318
Recycled Water	52	4,074	4,074	4,074	4,074	4,074
Demand Total	7,863	14,562	15,054	15,454	15,893	16,392
Difference	844	695	591	451	342	271
Difference as % of Supplies	10%	5%	4%	3%	2%	2%
Difference as % of Demand	11%	5%	4%	3%	2%	2%

Projected Multiple Dry Water Years Supply and Demand Comparison

During multiple dry years, the District assumes water demands will continue to increase at approximately 7% greater than normal; therefore this percentage was used to generate the multiple dry year demands. It is also assumed that the wholesaler's source water supplies would begin to decrease due to multiple dry years.

No extraordinary conservation measures beyond the implementation of Best Management Practices are reflected in the demand projections. Recycled water supplies are assumed to experience no reduction during dry years. As indicated in Tables **9A-9E**, the District will have adequate water supplies during multiple dry years. An adequate water supply is further confirmed within SDCWA's 2005 Plan and MWD's Plan, both of which state that they will have adequate supplies to meet dry year demands within its service area for the next 20 years.

Table 9-A. Supply and Demand Comparison Projected Consecutive MULTIPLE DRY Year Occuring Between 2006 - 2010			
	2006	2007	2008
Supply Total	12,743	14,359	14,425
Imported Water	9,068	10,285	10,351
Recycled Water	3,675	4,074	4,074
Demand Total	12,743	14,359	14,425

Table 9-B. Supply and Demand Comparison Projected Consecutive MULTIPLE DRY Year Occuring Between 2011 - 2015			
	2011	2012	2013
Supply Total	13,937	14,835	14,907
Imported Water	9,863	10,761	10,833
Recycled Water	4,074	4,074	4,074
Demand Total	13,937	14,835	14,907

Table 9-C. Supply and Demand Comparison Projected Consecutive MULTIPLE DRY Year Occuring Between 2016 - 2020			
	2016	2017	2018
Supply Total	14,408	15,093	15,289
Imported Water	10,334	11,019	11,215
Recycled Water	4,074	4,074	4,074
Demand Total	14,408	15,093	15,289

Table 9-D. Supply and Demand Comparison Projected Consecutive MULTIPLE DRY Year Occuring Between 2021 - 2025			
	2021	2022	2023
Supply Total	14,788	15,624	15,712
Imported Water	10,714	11,550	11,638
Recycled Water	4,074	4,074	4,074
Demand Total	14,788	15,624	15,712

Table 9-E. Supply and Demand Comparison Projected Consecutive MULTIPLE DRY Year Occuring Between 2026 - 2030			
	2026	2027	2028
Supply Total	15,207	16,082	16,179
Imported Water	11,133	12,008	12,105
Recycled Water	4,074	4,074	4,074
Demand Total	15,207	16,082	16,179

Inconsistency of Supplies - Earlier this year, MWD, SDCWA, Western Municipal Water District of Riverside County, Eastern Municipal Water District, and other local retail water agencies developed a water demand management plan to provide options on how best to meet water needs in the region until additional treatment capacity is added to the Skinner plant. Construction is under way for a \$76 million treatment module to meet increasing demands from the water agencies served by Skinner. The additional unit is scheduled to be completed in Spring of 2007. Additionally, SDCWA is building the Twin Oaks Valley Water Treatment Plant which will have the capacity to treat 100 mgd of potable water. Based on SDCWA's projections this additional water will be sufficient to serve the area through 2015.

As stated in SDCWA's Plan, it and its member agencies plan a diversity of supplies so that the region is not reliant on a single source. Independently, the District could implement extraordinary conservation measures and/or increase deliveries of recycled water to assist in assuring reliability.

Potable - Although the District's source of potable water is vulnerable to climatic

factors, other factors such as water quality and natural disasters also present risks.

Should the availability of potable water be affected by any of the factors listed above, the District would begin implementing a water shortage contingency strategy as further described in this 2005 Plan.

Recycled - The District considers recycled water a drought-proof source of water which is not subject to climatic factors. However, other factors such as water quality and natural disasters may still present risks.

Should recycled water deliveries be suspended due to water quality issues, the District would request supplements of emergency potable water supplies from SDCWA or from neighboring water agencies.

Water Transfer and Exchange Opportunities

Law: **10631.** *A plan shall be adopted in accordance with this chapter and shall do all of the following:...(d) Describe the opportunities for exchanges or transfers on a short-term or long term basis.*

As discussed earlier in this Plan, the District is currently evaluating the possibility of receiving a portion of its potable water supply from Poseidon's seawater desalination project located in Carlsbad. Poseidon proposes to provide the District with a specified quantity and reliability of water through a mutually accepted exchange agreement. The water purchase agreement would provide Rincon with potentially up to 7,700 acre-feet of water per year for a period of 30 years. Additionally, this quantity of water would be appropriated for the exclusive use of the District, and is guaranteed to be 96% reliable.

Water Use By Customer Type

Law: **10631.** *A plan shall be adopted in accordance with this chapter and shall do all of the following: ...(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses: (A) Single-family; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; and (I) Agricultural. (2) The water use projections shall be in the same five-year increments to 20 years or as far as data is available.*

Since 2000, new water connections are being added to the District at an approximate rate of 3% every five years. **Table 10** represents past, current, and projected water users from 1995

Water Use Sectors	2000	2005	2010	2015	2020	2025	2030
Single Family Residential	6,256	6,479	6,676	6,878	7,087	7,302	7,524
Multi-Family Residential	94	89	92	94	97	100	103
Commercial	664	715	737	759	782	806	830
Industrial	7	0	0	0	0	0	0
Institutional/Governmental	4	9	9	10	10	10	10
Landscape/Recreation	193	158	163	168	173	178	183
Agriculture	101	63	31	23	16	8	0
Other (Recycled Water)	0	38	65	67	69	71	73
Total (Number of Connections)	7,319	7,551	7,772	7,999	8,234	8,476	8,725

to 2025 by the number of connections per year. **Table 11** represents past, current, and projected water use from 1995 to 2025 measured in acre-feet per year.

Water Use Sectors	2000	2005	2010	2015	2020	2025	2030
Potable							
Single family residential	4,801.5	4,483.6	5,721.0	6,087.6	6,477.7	6,892.8	7,334.5
Multi-Family residential	773.6	665.1	823.2	875.9	932.1	991.8	1,055.3
Commercial	927.6	881.3	1,420.5	1,645.9	1,751.4	1,863.6	1,983.0
Industrial	47.8	0	0	0	0	0	0
Institutional/Governmental	83.8	77.0	142.9	152.1	161.8	172.2	183.3
Landscape	804.0	576.6	745.5	793.3	844.1	898.2	955.8
Sales to other agencies		0	0	0	0	0	0
Saline barriers		0	0	0	0	0	0
Groundwater recharge		0	0	0	0	0	0
Conjunctive use		0	0	0	0	0	0
Agriculture*	1,113.7	616.1	947.6	707.6	467.6	227.6	0
Potable Total	8,552.0	7,299.7	9,800.7	10,262.4	10,634.7	11,046.2	11,511.9
Recycled							
Institutional		0	3,622	3,622	3,622	3,622	3,622
Landscape		51.8	452	452	452	452	452
Recycled Total	0	51.8	4,074	4,074	4,074	4,074	4,074
Grand Total (Acre-feet/Year)	8,552.0	7,351.5	13,874.7	14,336.4	14,708.7	15,120.2	15,585.9

* Agriculture water does not include water that is privately pumped.

Water Sales to Other Agencies

Due to economic and geographic factors, the District serves water to a few customers located within the city limits. In exchange, the City serves a few customers that are located within the District's improvement districts. The costs relating to these "exchanges" are incorporated by the SDCWA and are adjusted on both agencies' wholesale invoices.

Additional Water Uses and Losses

Unaccounted Water Loss - The District monitors its unaccounted water loss on an annual basis as required by the CUWCC's Best Management Practice (BMP) number 3. Metered sales plus other verifiable uses (known leaks, system maintenance, fire fighting, etc.) are divided by the total amount supplied into the system. Results less than 90% would be further investigated and a full-scale System Water Audit would be initiated. **Table 12** below shows unaccounted for water loss tabulated from 2000 to 2005.

Additional Uses - Other than water for retail sales and unaccounted water loss, the District does not have additional uses for its water supply.

Table 12. Additional Water Uses and Losses						
Water Use	2000	2001	2002	2003	2004	2005
Unaccounted for Water Loss (A/F)	565.7	199.3	648.6	83.3	336.0	468.1
Accounted for Water as a % of overall water purchases	94%	98%	93%	99%	96%	94%

Demand Management Measures

Law: **10631. (f)** Provide a description of the supplier's water demand management measures. This description should include all of the following: **(1)** A description of each 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: **(2)** A schedule of implementation for all water demand management measures proposed or described in the plan. **(3)** 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. **(4)** 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. **(g)** 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

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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: (j) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

The District is committed to implementing water conservation and education programs. As stated in the cover letter to this Plan, Rincon is a signatory to the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU), and therefore is a member of the California Urban Water Conservation Council (CUWCC). Benefits of being a CUWCC member include access to: workshops, conferences, free publications, water management practices research, and water legislation leadership.

As a member of the CUWCC, the District has agreed to make a good faith effort to implement 13 urban water conservation Best Management Practices (BMPs) to address the Demand Management Measures (DMM). BMPs are intended to reduce long-term urban water demands. Members are required to submit annual reports in two year increments identifying their implementation activities on each of the BMPs. BMPs are functionally equivalent to Demand Management Measures and for the purpose of fulfilling the requirements of the Water Code Sections 16031 (f) and (g) are summarized in **Table 13**.

Table 13 2003 - 04 Best Management Practices Coverage Summary			
BMP	Description	Full Coverage	Partial Coverage
#1	Water Survey Programs for Single-Family and Multi-Family Residential Customers		X
#2	Residential Plumbing Retrofit	X	
#3	System Water Audits, Leak Detection, and Repair	X	
#4	Metering with Commodity Rates for all New Connections and Retrofit of Existing	X	
#5	Large Landscape	Exempt	
#6	High-Efficiency Washing Machine Rebate Programs	X	
#7	Public Information Programs	X	
#8	School Education Programs	X	
#9	Conservation Programs for CII Accounts		X
#11	Conservation Pricing	X	
#12	Conservation Coordinator	X	
#13	Waste Water Prohibition		X
#14	Residential ULFT Replacement Program	X	

See **Appendix E** for the CUWCC BMP coverage reports submitted for 2003/2004, as well as those submitted for 2001/2002. Also included is the CUWCC Coverage Calculator.

Determination of BMP Implementation - The District began implementing its aggressive conservation program in the early 1990's. Some of the early programs included retrofitting of high-flow toilets and high-flow showerheads through direct distribution and monetary incentives. Today, the District participates in conservation incentive programs in conjunction with SDCWA and MWD as well as developing conservation programs to address specific local issues. As represented in **Table 13**, the District continues to maintain a high level of meeting goals as set forth in the BMPs. Those BMPs which have not been completely implemented are discussed below, as are other conservation programs developed by the District that were not required by the BMPs.

BMP 1, Water Survey Programs for Single-Family and Multi-Family Residential Customers - In the past, the District has relied on supplemental funding and contracted labor provided by SDCWA to implement its Water Survey Program. As funding for these programs has been significantly reduced, the District has been exploring the cost effectiveness of developing and implementing a Water Survey Program in-house. Concurrently, the use of an independent outside service is also being explored.

BMP 5, Large Landscape - The District filed for an exemption for this BMP based on cost ineffectiveness. Although the exemption was filed, the District realizes the importance of water conservation for large landscape and acknowledges the significant water conservation opportunities afforded by this BMP. Although not required to do so, the District has committed to implementing water budgets based on evapotranspiration and is currently about 75% complete in gathering the data necessary to create water budgets for its large landscape water users. Additionally, the District has taken a lead role in creating a streamlined, low-cost, and effective water budget program for 12 other water agencies located in northern San Diego County.

BMP 9, Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts - The District continues to provide funding for CII conservation programs. Although the program is continuously offered to its CII customers through newsletters and information provided on the District website, this program has not been well used. As the District explores implementing BMP1 in-house, consideration will be given to include CII water surveys in-house as well. By directly managing this BMP, the District may be able to effectively encourage and increase customer participation.

BMP 13, Waste Water Prohibition - The District's Board adopted Ordinance 101.2 on June 11, 1991 (see **Appendix F**) which establishes a

"no waste" policy for the District. Although the Ordinance addresses water-wasting activities such as gutter flooding and single-pass fountains, it does not address single-pass cooling systems, single-pass car washes, and single-pass laundries. The District is currently updating and revising its administrative code and is planning to rewrite its conservation policies and ordinances during 2006. Also under consideration is an aggressive conservation-based tiered water rate structure.

Agricultural Conservation - The District continues to participate in agricultural irrigation water conservation efforts through the Agricultural Water Management Program funded by SDCWA. The program provides irrigation system evaluations and crop water budgets, as well as a report that details irrigation system conditions, water-use history, and soils information. Through an information pack, customers are given technical information about evapotranspiration, fertilizers, and pesticides.

In 2004, as part of its investigation of implementing a large landscape water budget program, the District elected to create and implement a pilot program for its agricultural irrigation customers in which the agricultural acreage under production is given a water allocation (tiered pricing) equal to reference evapotranspiration. Reference evapotranspiration was selected because that is the amount of water needed for water intensive crops (includes leaching and typical emission uniformities). Water use at or below this allocation is charged a lower-tiered price while water used above the allocation is charged at a higher water rate. Response from customers has been favorable, with many stating that they were uninformed about how much water is actually needed for maximum crop yield.

The District's program has been commended by SDCWA and has been provided as a template to other water districts in San Diego County.

Water conservation is a well-established practice that helps to ensure a reliable water supply for the future. In the short-term conservation may reduce commodity-based rate revenues. Over the long-term however, conservation measures serve to defer or limit rate increases by reducing the District's needs for other, more expensive supplies and the need for increased infrastructure. Records show that during 1990, the District served 9,724.1 acre-feet of water to a population of 25,000 people. However after years of conservation education and significant rainfall, the District served 7,551 acre-feet in 2005 to a population of 28,200. This represents a decrease of nearly 23% in water sales to a population that has grown by 11%.

For fiscal year 2005-06, the District's budget for implementing its conservation program is \$38,200.

Law: Planned Water Supply Projects and Programs

10631. (h) Include a description of 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 supplier in average, single dry, and multiple dry 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.

Due to geographical conditions, the District has limited, if any ability to create new sources of water beyond recycled water or conservation efforts. The District looks to SDCWA and MWD to explore and implement projects and programs (other than those described in the DMM section of this Plan). As detailed in SDCWA's 2005 Plan, slated projects include those listed below.

Imperial Irrigation District (IID) Water Transfer - On April 29, 1998, SDCWA signed an agreement with IID for a long-term transfer of conserved Colorado River water to San Diego County. The SDCWA-IID Water Conservation and Transfer Agreement is the largest agricultural-to-urban water transfer in United States history. Colorado River water will be conserved by Imperial Valley farmers who voluntarily participate in the program.

Deliveries began into San Diego County in 2003 with an initial transfer of 10,000 acre-feet. SDCWA received 20,000 acre-feet in 2004 and will receive an additional 30,000 acre-feet by the end of 2005. The quantities will increase annually to 200,000 acre-feet by 2021 then remain fixed for the duration of the transfer agreement, which is 45 years and can be extended to 75 years.

All-American Canal (AAC) and Coachella Canal (CC) Lining Projects - The SDCWA was assigned MWD's rights to an annual quantity of 77,700 acre-feet of conserved water from projects that will line the AAC and the CC. The projects will reduce the loss of water that currently occurs through seepage, with the conserved water being delivered to SDCWA. This conserved water will provide the San Diego region with an additional 8.5 million acre-feet over the 110-year life of the agreement.

Earthwork for the CC lining project began in November 2004 and involves 37 miles of canals. Project completion is expected in early 2007. Preliminary design-related activities have begun on the AAC. Construction is expected to begin in early 2006.

SDCWA Seawater Desalination Program - SDCWA has been evaluating seawater desalination as a highly reliable local water source. To date, their efforts have focused on three main areas within San Diego County: Encina Power Station, San Onofre Generating Station, and the South Bay area.

The site at the Encina Power Station, would be a public/private partnering between SDCWA and Poseidon and is currently undergoing environmental impact review. This plant would have the capacity to produce 50 mgd of treated water, with an expansion potential of an additional 30 mgd. Should SDCWA discontinue its participation in this project, the District will have the opportunity to participate in a water exchange of desalinated water with Poseidon on an independent basis.

**Water Shortage
Contingency Plan**

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WATER SHORTAGE CONTINGENCY PLAN

Law: 10632. *The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50-percent reduction in water supply, and an outline of specific water supply condition which are applicable to each stage.*

Stages and Conditions

In 2004, the District filed its Emergency Response Plan, as required by law, with the United States Environmental Protection Agency in preparation of a catastrophic water supply interruption. In the event that an emergency, which may endanger any of the District's facilities, and/or could result in danger to persons or property, District staff is authorized by the Board to take the necessary steps to protect the facilities and to maintain as safe a water supply to as many customers as possible.

Should a major emergency beyond the corrective capacities of District personnel occur, and which could result in long-term disruption of service, or require the implementation of outside agency assistance, the District's Emergency Operations Organization Plan (EOO) would be activated under direct supervision of the General Manager.

Table 14.
Preparation Actions for a Catastrophe

Specific Action	Completed	To be Addressed
Determine what constitutes a water shortage	●	
Re-evaluate & expand Disaster Preparedness Plan policy	●	
Develop alternative water supplies	●	
Obtain additional water supplies		●
Contact and coordinate with neighboring water agencies	●	
Identify required reference manuals for response team	●	
Designate an Emergency Team Coordinator	●	
Revise existing Disaster Preparedness Plan	●	
Develop procedure manual	●	
Train employees	●	
Identify methods to communicate with the public	●	
Identify methods to communicate with the media	●	
Identify methods to coordinate with other local agencies	●	

The District's EOO would provide primary control for any major emergency as well as initiate ties with appropriate agencies, such as SDCWA, the City, the County of San Diego, and the state of California. Specific tasks have been established and assigned for general duties, power and/or communications failure, emergency chlorination, failure of imported water deliveries, structural failure, contamination, and wide-spread disruption. Dependant on the severity of the emergency, the District could enforce any Stage Alert necessary for customer water conservation under Ordinance 101.2 (see **Appendix F**). The District revised its EOO in 2004 and resulting actions are addressed in **Table 14**.

In the event of declared water shortages (i.e., drought), or when a shortage declaration appears likely, the General Manager and/or the Board would determine the necessary degree of conservation staging required by its customers. The District would continue to implement BMPs where appropriate. See **Table 15** for the staging parameters.

Stage	Water Supply Condition	% of Shortage
1.	Normal water use	0%
2.	District may not be able to meet all of its water demands or when SDCWA requests Stage 2 (Voluntary)	6% - 12%
3.	District may not be able to meet all of its water demands or when SDCWA requests Stage 3 (Voluntary to Mandatory)	12% - 18%
4.	District not likely to meet all water demands or when SDCWA requests Stage 4 (Voluntary to Mandatory)	18% - 24%
5.	District is unable to meet all water demands or when SDCWA requests Stage 5 (Voluntary to Mandatory)	24% - 36%
6.	District is unable to meet all water demands or when SDCWA requests Stage 6 (Mandatory)	36% - 42%
7.	District is unable to meet all water demands or when SDCWA requests Stage 7 (Mandatory)	> 42%

The District is currently reviewing its conservation ordinance including the percentage of shortages listed in the chart above. It is important to note here however that any District-enforced conservation staging is exclusively focused on localized supply shortages. Since the District depends on SDCWA for 100% of its potable water supplies, shortages on a regional basis would most likely be issued as a *Request for Compliance* from SDCWA.

In addition to Ordinance 101.2, the District participated, through a Technical Advisory Committee, in the development of SDCWA's Drought Management Plan (DMP). The DMP will provide SDCWA and its member agencies with a series of actions to take when faced

with a shortage of imported water supplies. The potential actions will help the region minimize the impacts of shortages and ensure equitable allocation of supplies. The DMP includes a drought response matrix containing actions to be taken by SDCWA at different drought stages, an allocation methodology, and a communication strategy. Once the DMP is adopted by SDCWA, the District's Board will re-examine it's ordinance in light of this DMP and make changes as necessary.

Recycled water is not subject to rationing.

Minimum Supply Requirements for the Next Three Years

Law: **10632.** *The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.*

Through its standing as a member agency of SDCWA, the District works with the SDCWA to insure adequate supplies to meet the needs of its customers. The District provides 25-year water demand projections to SDCWA and SDCWA maintains adequate supplies to meet those needs in normal, and single and multiple dry years.

Catastrophic Supply Interruption Plan

Law: **10632.** *The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (c) 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, an earthquake, or other disaster.*

It is critical that the District set in place sources of water supplies in the event of an emergency due to earthquakes, power outages, vandalism, and terrorism. To offset potential water shortages due to these events, the District has considered the following:

Water Exchanges - The District currently has agreements with three neighboring water agencies for water exchanges in the event of an emergency. These exchanges would be temporary and are not considered a component of increased future supplies.

Rationing and Reduction Goals - As discussed earlier in this Plan, the District has adopted a seven stage rationing plan. Stage 1 is observed during normal

conditions while Stage 7 would be implemented in the worst case scenario. The rationing plan includes both voluntary and mandatory factors, both of which would depend significantly on the severity and the anticipated duration of the water supply shortage.

Disaster Drills - In an effort to reduce the impacts of disaster, the District regularly conducts drills on various singular/multiple disaster scenarios. Activities are monitored/reviewed, the EOO is updated, and staff is further advised, as required.

Prohibitions, Penalties, and Consumption Reduction

Law: 10632. *The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (d) 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. (e) 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 50-percent reduction in water supply. (f) Penalties or charges for excessive use, where applicable.*

Table 16. Mandatory Prohibitions & Estimated Reduction		
Action	Mandatory Stage	Estimated Reduction of overall demand
No runoff of water from irrigation or drainage	Stage 1	0%
No neglecting leak repair	Stage 1	
No washing of paved areas	Stage 1	
No landscape irrigation between 8:00 AM to 5:00 PM	Stage 2	12% +
No non-essential agricultural water use	Stage 2	
No washing of vehicles without a bucket (no running water)	Stage 2	
No overfilling of pools, spas, fountains, ponds, and lakes	Stage 2	
No use of construction meters	Stage 2	
No water-truck filling	Stage 2	
No automatic serving of water in restaurants	Stage 2	
No new meter applications	Stage 4	12% +
Drought notice posted at restaurants and hotel/motels	Stage 5	6% +
No landscape irrigation sprinkler use with potable water	Stage 6	12% +
No topping off uncovered pools or spas	Stage 6	
No water for ponds, lakes, or other water bodies	Stage 6	
No irrigation of lawns	Stage 7	6% +

District ordinance does not allow the use of construction meters during times of water shortages. These water users are isolated from the system during a water shortage and new requests for construction meters are denied. Other water users are not prioritized for rationing. Instead, specific activities such as the elimination of car washing, runoff from irrigation systems, etc., are prioritized within the rationing stages. See **Tables 16**, and **17** for details on *Mandatory Prohibition & Estimated Reduction* and *Penalties & Charges*, respectively.

**Table 17.
Penalties and Charges**

Violation	Violation Amount	Actions
First	None	Written notification
Second	\$200.00	None
Third	\$600.00	Flow restriction device added to customer's system
Fourth	\$1,000.00	Service termination and written notification

Penalties for non-compliance are based on the number of violations committed within the period of one year. Customers may also be subject to reimburse charges for actions resulting in additional staff time (such as the installation of a flow restriction device).

Analysis of Revenue Impacts of Reduced Sales During Shortages

Law: 10632. *The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (g) An analysis of the impacts of each of the actions and conditions described in subdivision (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome impacts, such as the development of reserves and rate adjustment.*

**Table 18.
Impacts of Water Shortage
on Revenue & Expenses**

Impact	Effect of Impact	
	Disaster	Drought
Reduced sales	Minor to Significant	Significant
Increase in staffing cost	Minor to Significant	Moderate to Significant
Increase in operations and maintenance costs	Significant	Moderate
Increase in cost of supply & treatment	Minor to Significant	Significant

The District is currently reviewing its conservation ordinance which includes an analysis of potential revenue and expense impacts caused by a shortage of water. **Table 18** shows the potential severity of impacts on revenues and expenses

created by a disaster (short-term) versus those created by a drought (long-term). The effects and focuses of short and long-term shortages vary and are specifically unique to the exact cause of a water shortage.

Table 19 shows the potential options for counteracting the impacts caused by a water shortage. Again, the method(s) selected to offset any impact would be determined by the Board based on the severity and anticipated duration of the shortage.

Table 19. Measures to Lessen Impacts of Water Shortage		
Measure	Effect of Measure	
	Disaster	Drought
Increase rates, fees, charges	Minor to Significant	Significant
Change tiered-pricing trigger	Minor to Significant	Moderate to Significant
Use of reserves	Significant	Significant
Evaluate and prioritize capital projects	Significant	Moderate to Significant
Apply for loans/grants	Significant	Minor

Draft Ordinance and Use Monitoring Procedure

Law: **10632.** *The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (h) A draft water shortage contingency resolution or ordinance. (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency plan.*

The District's water shortage contingency plan is included in Ordinance 101.2 and is located in this Plan as **Appendix F**. Given that a water shortage, its impacts, and the agency requesting action are so varied, the District will implement a mechanism for determining exact/actual water reduction at the time it is needed. The mechanism may include the following: daily to weekly monitoring of water distribution, more frequent reading of meters, monitoring of water waste violations, etc.

Recycled Water Plan

RECYCLED WATER PLAN

Participation in Regional Recycled Water Planning

Law: **10633.** *The plan shall provide, to the extent possible, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies and shall include all of the following: (a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.*

The District, along with SDCWA and MWD, are participants in regional recycled water planning. As mentioned in the Water Management section of this Plan, the District is currently implementing a recycled water program.

The District purchases tertiary water from the City's Regional Reclaimed Water Project. The treated effluent meets all requirements of Title 22 of the California Code of Regulations. The City currently pumps treated water into a storage tank at an elevation that allows for delivery of adequate pressure through gravity feed into the District's recycled water delivery system.

Funding for a major portion of the District's recycled water distribution system was provided by the State Water Resources Control Board (Proposition 13 and Proposition 50 funds). This funding consisted of a grant award for \$426,264 and a low-interest (2.4%) loan in the amount of \$1,278,794.

Wastewater Collection and Treatment

Law: **10633.** *(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the method of wastewater disposal. (b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project. (c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.*

The District is a *retailer* of imported water and recycled water, and does not participate in the collection or treatment of wastewater. Wastewater collection and treatment within the District's service area and all other parts of Escondido is managed and operated by the City at its Hale Avenue Resource Recovery Facility. For details about waste water collection and

treatment, please see the 2005 Plan submitted by the City.

Potential and Projected Use, Optimization Plan with Incentives

When first considering the delivery of recycled water, the District contacted potential recycled water users that received potable water through meters serving water for landscape irrigation purposes. This sector of customers initially included 80 accounts ranging from HOA common areas, to school yards, and other outdoor facilities. Of the 80 accounts contacted, the District received signed letters of intent (representing 66 meters) for participation in the recycled water program.

Although the construction of the recycled water distribution system was completed in 2004, the process of site retrofit continues. The District anticipates that once retrofits for landscape meters have been completed, 66 potable water meters will have been converted to recycled water.

Future Recycled Water Commitments

Law: **10633.** *(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses. (e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision. (f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year. (g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meters recycled water standards, and to overcome any obstacles to achieving that increased use.*

Beyond those recycled water connections for landscape irrigation discussed above, the District has committed to provide 3,622 acre-feet a year of recycled water to be used in the cooling tower of a 500 mega-watt power generation facility. This industrial use of recycled water is slated to receive deliveries in 2006. See **Table 11** for current and estimated future recycled water demands.

Future Uses

As mentioned earlier in this Plan, the District is currently limited to a specific amount of recycled water available to its delivery system due to the City's treatment facility capabilities. As the City implements recommendations within its Master Plan, and as the treatment facility capacity is increased, the District will be able to consider feasibility studies for increasing recycled water use.

Recycled Water Use - 2000 Projections

In its 2000, Plan the District discussed the upcoming Recycled Water Program. However, at the time the Plan was written, specific information on the quantity of recycled water to be served was not available since negotiations with the City were pending. The District anticipated that initial deliveries were expected to begin at 250 acre-feet per year with an eventual ramping to 648 acre-feet within 30 years. As discussed earlier in this section, the District currently has demands of 4,074 acre-feet per year committed to begin in 2006. The District's original projection of recycled water demands of 2000 have been exceeded by 529%.

Encouraging the Use of Recycled Water

The District adopted Ordinance 114 (see **Appendix G**) on February 1999, establishing a recycled water optimization plan. This Ordinance contains the District's policy on recycled water use. It is the policy of the District that recycled water shall be used within its jurisdiction wherever its use is economically justified, financially and technically feasible, and consistent with legal requirements, compliant of public health, safety and welfare of the environment although dependant on availability.

The District has and will continue to evaluate existing and proposed irrigated greenbelts, irrigated agriculture, commercial office buildings, industrial processing, and artificial lakes when deemed economically and technically feasible, and as increased recycled water supplies become available.

To encourage the use of recycled water as a drought-proof source, the District currently offers recycled water at 34% less than potable water rates, while meter charges are 50% less than potable rates.

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