City of San Clemente

Final

2010 Urban Water Management Plan

June 2011

MALCOLM PIRNIE | ARCADIS

The Water Division of ARCADIS

City of San Clemente
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2010 Urban Water Management Plan

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Acronyms Used in the Report

20x2020	20% reduction by 2020
Act	Urban Water Management Planning Act
AF	acre-feet
AFY	acre-feet per year
AMP	Allen McColloch Pipeline
BDCP	Bay Delta Conservation Plan
BMP	Best Management Practice
Board	Metropolitan's Board of Directors
BOD	biological oxygen demanding
CALFED	CALFED Bay-Delta Program
CDPH	California Department of Public Health
CDR	Center for Demographic Research
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CII	Commercial/Industrial/Institutional
CIMIS	California Irrigation Management Information System
City	City of San Clemente
CRA	Colorado River Aqueduct
CUP	Conjunctive Use Program
CUWCC	California Urban Water Conservation Council
DMM	Demand Management Measure
DWR	Department of Water Resources
EIR	Environmental Impact Report
EOCF #2	East Orange County Feeder #2
ETo	Evapotranspiration
Festival	Children's Water Education Festival
FY	Fiscal Year
FYE	Fiscal Year Ending
GAP	Green Acres Project
GPCD	gallons per capita per day
gpm	gallons per minute
HCF	hundred cubic feet
HECW	High Efficiency Clothes Washer
HET	high efficiency toilet
HOA	Homeowners Association
IRP	Integrated Water Resources Plan
IWA	International Water Association
LOI	Letter of Intent
LPCP	Landscape Performance Certification Program

LTM	Local Transmission Main
Metropolitan	Metropolitan Water District of Southern California
MG	million gallons
MGD	million gallons per day
MOU	Memorandum of Understanding
MWDOC	Municipal Water District of Orange County
NDMA	N-nitrosodimethylamine
NOAA	National Oceanic and Atmospheric Administration
OCWD	Orange County Water District
Poseidon	Poseidon Resources LLC
PPCP	Pharmaceuticals and Personal Care Product
QSA	Quantification Settlement Agreement
RHNA	Regional Housing Needs Assessment
RUWMP	Regional Urban Water Management Plan
SBx7-7	Senate Bill 7 as part of the Seventh Extraordinary Session
SDCWA	San Diego County Water Authority
SOCIRWMP	South Orange County Integrated Regional Watershed Management Plan
SOCWA	South Orange County Wastewater Authority
SOCWRS	South Orange County Water Reliability Study
SWP	State Water Project
TDS	Total Dissolved Solids
ULFT	ultra-low-flush toilet
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
WACO	Water Advisory Committee of Orange County
WEROC	Water Emergency Response Organization of Orange County
WIP	Water Importation Pipeline
WRP	Water Reclamation Plant
WRP	Water Recycling Plant
WSAP	Water Supply Allocation Plan
WSDM	Water Surplus and Drought Management Plan

Executive Summary

This report serves as the 2010 update of the City of San Clemente's (City) Urban Water Management Plan (UWMP). The UWMP has been prepared consistent with the requirements under Water Code Sections 10610 through 10656 of the Urban Water Management Planning Act (Act), which were added by Statute 1983, Chapter 1009, and became effective on January 1, 1984. The Act requires "every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually" to prepare, adopt, and file an UWMP with the California Department of Water Resources (DWR) every five years. 2010 UWMP updates are due to DWR by August 1, 2011.

Since its passage in 1983, several amendments have been added to the Act. The most recent changes affecting the 2010 UWMP include Senate Bill 7 as part of the Seventh Extraordinary Session (SBx7-7) and SB 1087. Water Conservation Act of 2009 or SBx7-7 enacted in 2009 is the water conservation component of the Delta package. It stemmed from the Governor's goal to achieve a 20% statewide reduction in per capita water use by 2020 (20x2020). SBx7-7 requires each urban retail water supplier to develop urban water use targets to help meet the 20% goal by 2020 and an interim 10% goal by 2015.

Service Area and Facilities

The City provides water to a population of 55,398 throughout its 14.7 square mile service area. The City receives its water from three main sources, groundwater from the City's wells, recycled water from treated wastewater; and imported water from the Municipal Water District of Orange County (MWDOC). Groundwater is pumped from 2 active wells located in the San Clemente Sub-Basin, and imported water is treated at the Diemer Filtration Plant and is delivered to the City through two imported water connections.

Water Demand

In 2010, the total water demand for retail customers served by the City is approximately 10,090 acre-feet annually consisting of 8,570 acre-feet of imported water, 620 acre-feet of local groundwater, and 900 acre-feet of recycled water. Water use in 2010 is down from previous years as a result of Metropolitan's water shortage allocation and aggressive conservation outreach, the economic downturn, and above average precipitation. With its diligence in the promotion of water use efficiency through its conservation-based tiered rate structure and financial incentives for water efficient technologies as well as doubling its recycled water capacity, the City is projecting an 8.8% increase in total water demand in the next 25 years despite a population growth of 12.2%.

With MWDOC's assistance, the City has selected to comply with **Option 1** of the SBx7-7 compliance options. The City is a member of the Orange County 20x2020 Regional Alliance formed by MWDOC. This regional alliance consists of 29 retail agencies in Orange County. Under Compliance Option 1, the City's 2015 interim water use target is 167 GPCD and the 2020 final water use target is **148 GPCD**.

The City is on track to meet the SBx7-7 per capita water use reduction requirements individually and as part of a MWDOC regional alliance. In 2010, the City's per capita water use was already 148 GPCD, which is the calculated 20% reduction from baseline target for 2020. To achieve and maintain the target per capita water use the City will continue to implement the Demand Management Measures listed in Section 4 of the UWMP in addition to converting over one hundred existing dedicated irrigation accounts now using potable water to recycled water. Because the SBx7-7 requirements apply to potable per capita water use, the City's recycled water expansion project will benefit the City's compliance as approximately 900 AFY of irrigation demand will switch from potable water to recycled water by 2020.

Water Sources and Supply Reliability

The City's main source of water supply is imported water from Metropolitan through purchases from MWDOC. Imported water is supplemented by local groundwater extracted from City owned wells, and recycled water produced at the City's recycled water treatment facility. Currently, the City relies on 85 percent imported water, 6 percent groundwater from the San Clemente Sub-Basin, and 9 percent recycled water. The water supply mix is expected to shift to more recycled water use as a result of the City's recycled water treatment facility expansion. Once completed, the City's recycled water supply is projected to double to 1,830 AFY by 2020, 17% of the total supply in 2020. Local groundwater production is also expected to increase from the current 620 AFY to the well capacity of 1,000 AFY once Well No. 6 Rehabilitation is complete. Consequently, the reliance on imported water is expected to decline from 85% to approximately 74% by 2020. The sources of imported water supplies include the Colorado River and the State Water Project (SWP). Metropolitan's 2010 Integrated Water Resources Plan (IRP) update describes the core water resource strategy that will be used to meet full-service demands (non-interruptible agricultural and replenishment supplies) at the retail level under all foreseeable hydrologic conditions from 2015 through 2035.

It is required that every urban water supplier assess the reliability to provide water service to its customers under normal, dry, and multiple dry water years. Metropolitan's 2010 RUWMP finds that Metropolitan is able to meet full service demands of its member agencies with existing supplies from 2015 through 2035 during normal years, single dry year, and multiple dry years. The City is therefore capable of meeting the water demands

of its customers in normal, single dry, and multiple dry years between 2015 and 2035, as illustrated in Table 3-12, Table 3-13, and Table 3-14, respectively.

Future Water Supply Projects

The City is in the design process to expand its WRP from 2.2 MGD to 4.4 MGD, based on the 2007 Recycled Water Master Plan. The projected total recycled water demand will increase to 1,830 AFY and will include nearly 9 miles of pipelines, conversion of a domestic water reservoir to recycled water storage, and a pressure reducing station as well as an interconnection with Santa Margarita Water District. This expansion will reduce the City's dependency on imported water by approximately 9%. The project schedule estimates construction to begin in the fall of 2011 with the first phase of new recycled water customers to come on-line in 2013.

In Orange County, there are two proposed ocean desalination projects that could serve MWDOC member agencies, including one that specifically that may benefit the City. The City is participating jointly with MWDOC and four other South County agencies with a pilot plant to evaluate the feasibility for the South Orange Coastal Desalination Project, a potential 15 MGD facility.

1. Introduction

1.1. Urban Water Management Plan Requirements

Water Code Sections 10610 through 10656 of the Urban Water Management Planning Act (Act) requires "every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually" to prepare, adopt, and file an UWMP with the California Department of Water Resources (DWR) every five years. 2010 UWMP updates are due to DWR by August 1, 2011.

This UWMP is to provide DWR with information on the present and future water resources and demands and provide an assessment of the City's water resource needs. Specifically, this document will provide water supply planning for a 25-year planning period in 5-year increments. The plan will identify water supplies for existing and future demands, quantify water demands during normal year, single-dry year, and multiple-dry years, and identify supply reliability under the three hydrologic conditions. The City's 2010 UWMP has been prepared in compliance with the requirements of the Act as amended in 2009, and includes the following analysis:

- Water Service Area and Facilities
- Water Sources and Supplies
- Water Use by Customer Type
- Demand Management Measures
- Water Supply Reliability
- Planned Water Supply Projects and Programs
- Water Shortage Contingency Plan
- Recycled Water

Since its passage in 1983, several amendments have been added to the Act. The most recent changes affecting the 2010 UWMP include Senate Bill 7 as part of the Seventh Extraordinary Session (SBx7-7) and SB 1087. Water Conservation Act of 2009 or SBx7-7 enacted in 2009 is the water conservation component of the historic Delta package. It stemmed from the Governor's goal to achieve a 20% statewide reduction in per capita water use by 2020 (20x2020). SBx7-7 requires each urban retail water supplier to develop urban water use targets to help meet the 20% goal by 2020 and an interim 10% goal by 2015. Each urban retail water supplier must include in its 2010 UWMPs the following information from its target-setting process:

- Baseline daily per capita water use
- 2020 Urban water use target
- 2015 Interim water use target
- Compliance method being used along with calculation method and support data

Wholesale water suppliers are required to include an assessment of present and proposed future measures, programs, and policies that would help achieve the 20 by 2020 goal.

The other recent amendment made to the UWMP Act to be included in the 2010 UWMP is set forth by SB 1087, Water and Sewer Service Priority for Housing Affordable to Low-Income Households. SB 1087 requires water and sewer providers to grant priority for service allocations to proposed developments that include low income housing. SB 1087 also requires UWMPs to include projected water use for single- and multi-family housing needed for low-income households.

The sections in this Plan correspond to the outline of the Act, specifically Article 2, Contents of Plans, Sections 10631, 10632, and 10633. The sequence used for the required information, however, differs slightly in order to present information in a manner reflecting the unique characteristics of the City's water utility. The UWMP Checklist has been completed, which identifies the location of Act requirements in this Plan and is included as Appendix A.

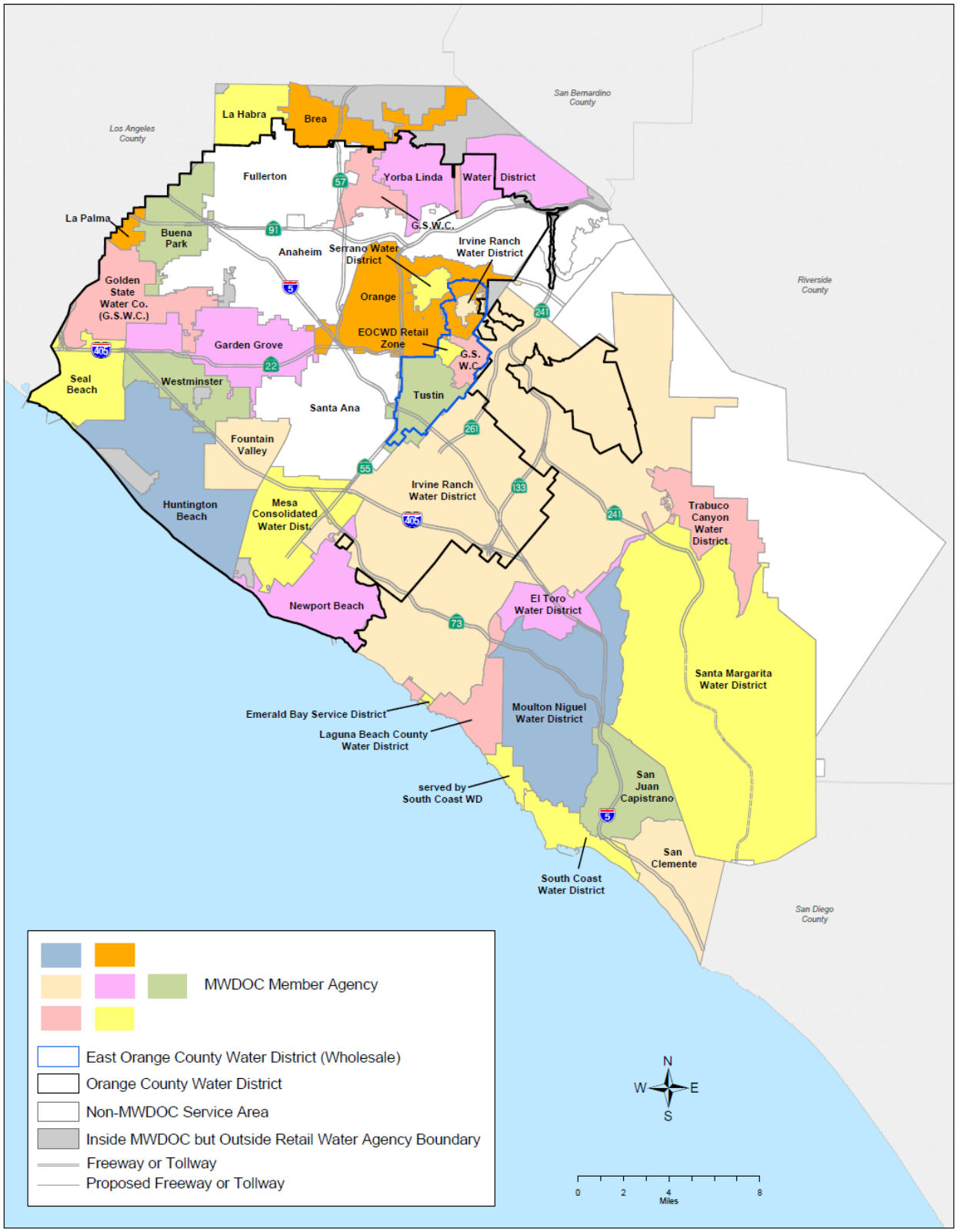


Figure 1-1: Regional Location of Urban Water Supplier

1.2. Agency Overview

The mission of the City's Public Works Department, in support of the City's mission, is to work in partnership with the community and allied City departments to:

- Develop, operate, maintain and upgrade the City's infrastructure
- Ensure that all private developments and City initiated public improvements are in compliance with municipal ordinances, regulations and standards
- Ensure the provision of safe and adequate water supplies and the proper disposal of liquid and solid wastes
- Develop and implement operating plans to effectively respond to local/regional emergencies
- Facilitate the expansion of the City's tax base through development of additional commercial, retail, entertainment and business park land uses

The residents of the City are represented by a five-member City Council. The current City Council members are:

- Lori Donchak, Mayor
- Jim Evert, Mayor Pro Tem
- Bob Baker, Councilmember
- Tim Brown, Councilmember
- Jim Dahl, Councilmember

The City receives its water from three main sources, groundwater from the City's wells, recycled water from treated wastewater; and imported water from the Municipal Water District of Orange County (MWDOC). MWDOC is Orange County's wholesale supplier and is a member agency of the Metropolitan Water District of Southern California (Metropolitan).

1.3. Service Area and Facilities

1.3.1. San Clemente's Service Area

The City spans 18.45 square miles of coastline and scenic foothills and is located in South Orange County bounded to the south by San Diego County and to the west by the Pacific Ocean. To the north and east, the cities of Dana Point and San Juan Capistrano and portions of unincorporated area of Orange County within Santa Margarita Water District's service area. The City's water service area covers 14.7 square miles and excludes a small section in the northern portion of the City which is serviced by South Coast Water District and the inland community of Talega which is serviced by Santa Margarita Water District. A map of the City's water service area is provided in Figure 1-2.

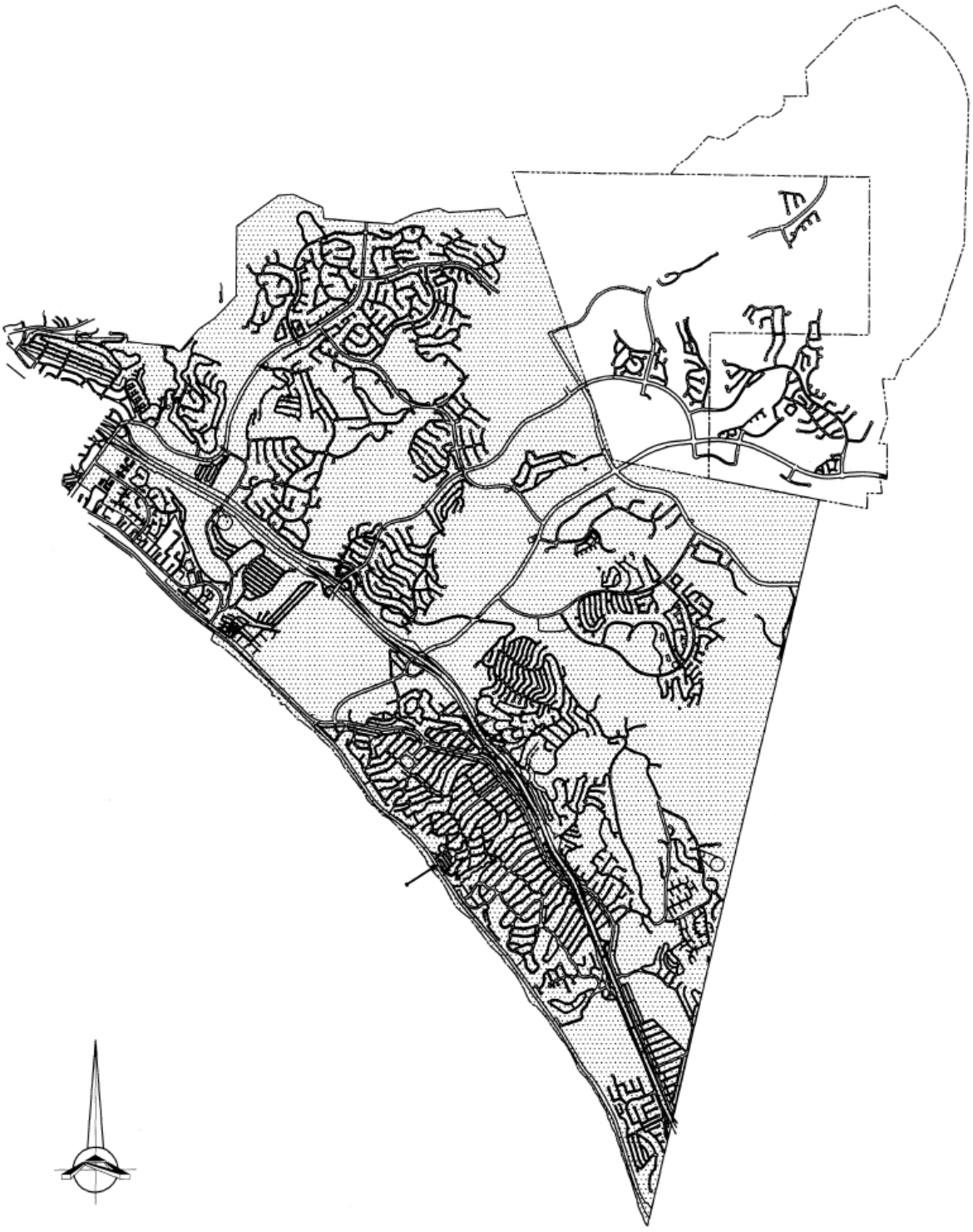


Figure 1-2: City of San Clemente's Service Area

1.3.2. San Clemente's Water Facilities

The City's water system consists of 13 service zones defined by reservoirs and 20 sub-zones through pressure reducing stations. The City maintains approximately 206 miles of distribution system piping, 16 pumping stations, 56 pressure reducing stations, one filtration plant, 14 local and two regional reservoirs, and two wells (Well no.6 and no.8).

Most of the City's water supply is imported through two systems originating at Metropolitan. One of these is the Local Transmission Main (LTM) System; the second is the Water Importation Pipeline (WIP) System. The City has 14.78 cfs capacity through the LTM, and 15 cfs ultimate capacity through the WIP. The WIP capacity is limited to 6.7 cfs until 2016, or until the City purchases additional capacity in the Allen McColloch Pipeline (AMP).

The City currently owns and operates a Water Reclamation Plant (WRP) with a capacity of 2.2 MGD with an anticipated recycled water expansion project slated for fiscal year 2012-13 to 4.4 MGD.

2. Water Demand

2.1. Overview

Currently, the average total water demand for retail customers served by the City is approximately 10,090 acre-feet annually consisting of 8,570 acre-feet of imported water, 620 acre-feet of local groundwater, and 900 acre-feet of recycled water. Water use in 2010 is down from previous years as a result of Metropolitan's water shortage allocation and aggressive conservation outreach, the economic downturn, and above average precipitation. With its diligence in the promotion of water use efficiency through its conservation-based tiered rate structure and financial incentives for water efficient technologies as well as doubling its recycled water capacity, the City is projecting an 8.8% increase in total water demand in the next 25 years despite a population growth of 12.2%.

The passage of SBx7-7 will increase efforts to reduce the use of potable supplies in the future. This new law requires all of California's retail urban water suppliers serving more than 3,000 AFY or 3,000 service connections to achieve a 20% per capita reduction in potable water demands (from a historical baseline) by 2020. Due to proactive water conservation efforts in the past decade, the City is on its way to meeting this requirement on its own. Moreover, the City has elected to join the Orange County 20x2020 Regional Alliance. The City together with other 28 retail agencies in Orange County are committed to reduce the region's water demand by 2020 through the leadership of MWDOC, the region's wholesale potable water provider.

This section will explore in detail the City's current water demands by customer type and the factors which influence those demands as well as providing a perspective of its expected future water demands for the next 25 years. In addition, to satisfy SBx7-7 requirements, this section will provide details of the City's SBx7-7 compliance method selection, baseline water use calculation, and its 2015 and 2020 water use targets.

2.2. Factors Affecting Demand

Water consumption is influenced by many factors from climate characteristics of that hydrologic region, to demographics, land use characteristics, and economics. The key factors affecting water demand in the City's service area are discussed below.

2.2.1. Climate Characteristics

The City, located in Southern California's coastal plain, enjoys a Mediterranean climate. The weather is generally mild, with average temperatures ranging from a low of 55

degrees in January to a high of 69 degrees in August. There are virtually no days below freezing, and approximately 325 days of sunshine each year. Average annual rainfall is about 14 inches. Most of the rainfall occurs between the months of November and March. The average evapotranspiration (ETo) is almost 50 inches per year which is four times the annual average rainfall. This translates to a high demand for landscape irrigation for homes, commercial properties, parks, and golf courses. Moreover, a region with low rainfall like Southern California is also more prone to droughts.

Climate data in Table 2-1 is comprised of California Irrigation Management Information System (CIMIS) data from Irvine station no.75 from October 1987 to present. Irvine Station no.75 provided the longest local record and most recent data in the vicinity of the City's service area for ETo. The precipitation and temperature data were obtained from the National Oceanic and Atmospheric Administration's (NOAA) database for the Laguna Beach station.

Table 2-1: Climate Characteristics

	Standard Monthly Average ETo (inches) [1]	Annual Rainfall (inches) [2]	Average Temperature (˚F) [3]
Jan	2.18	2.75	55.4
Feb	2.49	2.96	56.0
Mar	3.67	2.58	57.0
Apr	4.71	0.84	59.7
May	5.18	0.25	62.5
Jun	5.87	0.13	65.6
Jul	6.29	0.04	68.7
Aug	6.17	0.12	69.3
Sep	4.57	0.35	69.2
Oct	3.66	0.47	65.4
Nov	2.59	1.23	59.6
Dec	2.25	1.84	55.5
Annual	**49.63**	**13.56**	**62.0**

[1] CIMIS Station #75, Irvine, California from October 1987 to Present
[2] NOAA, Laguna Beach, California 1971 to 2000, Mean Precipitation Total
[3] NOAA, Laguna Beach, California 1971 to 2000, Mean Temperature

The source of the City's imported water supplies, the State Water Project and Colorado River Project, is influenced by weather conditions in Northern California and along the Colorado River. Both regions have recently been suffering from multi-year drought conditions and record low rainfalls which directly impact demands and supplies to Southern California.

2.2.2. Demographics

Population in the City service area is expected to increase from a present 55,398 to 62,138 by the year 2035 representing a 12% increase in the next 25 years. A 5% population increase is anticipated by 2020 after the addition of 313 homes in the Marblehead Coastal development. The Marblehead Coastal development remains to be the last significant project on developable land in the City's service area as discussed below. Table 2-2 shows the population projections for the next 25 years based on the California State University at Fullerton, Center for Demographic Research (CDR) projections.

Table 2-2: Population – Current and Projected

	2010	2015	2020	2025	2030	2035
Service Area Population [1]	55,398	56,746	58,094	59,442	60,790	62,138

[1] Center for Demographic Research, California State University, Fullerton 2010

2.2.3. Land Use

The most recent General Plan was adopted by the City in 1992 although the City is currently updating its General Plan with a tentative completion date of spring 2012. The City's General Plan serves as the foundational planning document for the City. The Plan provides policies regarding the management of new development, economic development, and conservation of natural resources, as well as many other issues affecting the City. It defines the framework by which the City will change and grow, detailing how physical and economic resources are to be managed and utilized over time. It is the intent of the land use policies of the General Plan to achieve the following:

- Retain existing residential neighborhoods and community and visitor serving commercial and industrial districts and provide for infill with uses that are compatible with existing development.
- Allow for the intensification or changing of use in selected existing sites which contain obsolete uses or are economically "underutilized," where new development activity would realize significant economic and physical benefits to the City and/or improved compatibility with adjacent use.
- Provide for the planned development of vacant lands which is linked to the timely expansion of supporting transportation and utility infrastructure and public services.
- Preserve and expand significant open space resources, including passive and active recreational lands (parks, beaches, and trails), significant visual elements (ridgelines, hillsides, canyons, and coastline), and significant vegetative and wildlife habitats.

Marblehead Coastal Development

Most recently, the City approved the Marblehead Coastal development which remains to be the last significant project on developable land in the City. The 250 acre proposed development contains 313 residential dwelling units, two parks, wetland restoration acres, and commercial. Construction was suspended in 2008 when the developer declared bankruptcy. The exact timeline for the completion is currently unknown but it is assumed that it will be completed by 2020. The average potable water demand for this development will be 525 AFY and of that amount 80 AFY is estimated to be irrigation needs alone, which will primarily be served by recycled water as part of the City's recycled water expansion project.

2.3. Water Use by Customer Type

The knowledge of an agency's water consumption by type of use or by customer class is key to developing that agency's water use profile which identifies when, where, how, and how much water is used, and by whom within the agency's service area. A comprehensive water use profile is critical to the assessment of impacts of prior conservation efforts as well as to the development of future water use efficiency programs.

This section provides an overview of the City's water consumption by customer type in 2005 and 2010, as well as projections for 2015 to 2035. The customer classes are categorized as follows: single-family residential, multi-family residential, commercial/industrial/institutional (CII), dedicated landscape, construction water, and recycled water. Other water uses including sales to other agencies and non-revenue water are also discussed in this section.

2.3.1. Overview

The City has 17,278 customer connections to its water distribution system. It is expected to add approximately 500 more connections by 2035. All connections in the City's service area are metered. Approximately 61% of the City's total water demand is residential. CII and dedicated landscape accounts consume approximately 26% of the City's total water demand. The City does not provide water for agricultural use.

Tables 2-3 and 2-4 provide a summary of past, current, and projected number of water service customers and water use by customer class in five-year increments from 2005 through to 2035.

Table 2-3: Past, Current and Projected Number of Accounts by Water Use Sector

Fiscal Year Ending	Number of Accounts by Water Use Sector						
	Single Family	Multi-Family	CII	Dedicated Landscape	Construction Water	Recycled Water	Total Accounts
2005	11,925	3,415	842	739	20	3	**16,944**
2010	12,060	3,550	880	765	20	3	**17,278**
2015	12,200	3,575	880	692	25	80	**17,452**
2020	12,300	3,600	880	650	25	120	**17,575**
2025	12,350	3,650	885	650	20	120	**17,675**
2030	12,400	3,700	890	655	20	120	**17,785**
2035	12,400	3,700	900	655	20	120	**17,795**

Table 2-4: Past, Current and Projected Water Demands by Water Use Sector

Fiscal Year Ending	Water Demand by Water Use Sectors (AFY)						
	Single Family	Multi-Family	CII	Dedicated Landscape	Construction Water	Recycled Water	Total Demand
2005	5,015	1,600	890	2,240	37	550	**10,332**
2010	4,650	1,460	850	1,800	30	900	**9,690**
2015	5,000	1,500	1,020	1,200	30	1,500	**10,250**
2020	5,100	1,550	1,050	885	25	1,830	**10,440**
2025	5,200	1,560	1,050	855	25	1,830	**10,520**
2030	5,250	1,570	1,050	800	25	1,830	**10,525**
2035	5,300	1,570	1,050	800	25	1,830	**10,575**

2.3.2. Residential

Residential water use accounts for the majority of the City's water demands. The single family residential sector accounts for approximately 46% and multi-family residential accounts for 14% of the total water demand. Water consumption by the residential sector is projected to remain at about 60% of total demand through the 25-year planning horizon.

2.3.3. Non-Residential

Non-residential demand, including recycled water, accounts for approximately 35% of the overall demand and is expected to remain so through to 2035. CII uses (excluding dedicated landscape accounts) represent a combined 8% of the City's total demand. Demands from dedicated landscape accounts are expected to decline slightly from 18% to 7% of the City's total water demands for the next 25 years as dedicated landscape accounts that now use potable water will switch over to recycled water. As a result, recycled water demand will increase from 9% to 17% over the 25-year planning horizon.

2.3.4. Other Water Uses

2.3.4.1. Sales to Other Agencies

The City does not sell water to other agencies.

2.3.4.2. Non-Revenue Water

Non-revenue water is defined by the International Water Association (IWA) as the difference between distribution systems input volume (i.e. production) and billed authorized consumption. Non-revenue water consists of three components: unbilled authorized consumption (e.g. hydrant flushing, fire fighting, and blow-off water from well start-ups), real losses (e.g. leakage in mains and service lines), and apparent losses (unauthorized consumption and metering inaccuracies).

The City's non-revenue water amounts to about 4.5% of City's potable water demand and is expected to remain so (Table 2-5).

Table 2-5: Additional Water Uses and Losses (AFY)

Water Use	Fiscal Year Ending						
	2005	2010	2015	2020	2025	2030	2035
Saline Barriers	-	-	-	-	-	-	-
Groundwater Recharge	-	-	-	-	-	-	-
Conjunctive Use	-	-	-	-	-	-	-
Raw Water	-	-	-	-	-	-	-
Recycled Water	-	-	-	-	-	-	-
Unaccounted-for System Losses	460	400	400	400	400	400	400
Total	**460**	**400**	**400**	**400**	**400**	**400**	**400**

2.4. SBx7-7 Requirements

2.4.1. Overview

SBx7-7, which became effective on February 3, 2010, is the water conservation component to the Delta legislative package. It seeks to implement former Governor Schwarzenegger's 2008 water use reduction goals to achieve a 20% statewide reduction in urban per capita water use by December 31, 2020. As discussed above, the bill requires each urban retail water supplier to develop urban water use targets to help meet the 20% per capita reduction goal by 2020 and an interim 10% per capita reduction goal by 2015. The bill establishes methods for urban retail water suppliers to determine targets to help achieve water reduction targets. The retail water supplier must select one of the four compliance options. The retail agency may choose to comply to SBx7-7 as an individual or as a region in collaboration with other water suppliers. Under the regional compliance option, the retail water supplier still has to report the water use target for its individual

service area. The bill also includes reporting requirements in the 2010, 2015, and 2020 UWMPs. An agency that does not comply with SBx7-7 requirement will not be eligible for water related grant, or loan, from the state on and after July 16, 2016. However, if an agency that is not in compliance documents a plan and obtains funding approval to come into compliance then could become eligible for grants or loans.

2.4.2. SBx7-7 Compliance Options

DWR has established four compliance options for urban retail water suppliers to choose from. Each supplier is required to adopt one of the four options to comply with SBx7-7 requirements. The four options include:

- *Option 1* requires a simple 20% per capita reduction from the baseline by 2020 and 10 percent reduction from baseline by 2015.
- *Option 2* employs a budget-based approach by requiring an agency to achieve a performance standard based on three metrics
    - Residential indoor water use of 55 GPCD
    - Landscape water use commensurate with Model Landscape Ordinance
    - 10 percent reduction in baseline CII water use
- *Option 3* is to achieve 95% of the applicable state hydrologic region target as set forth in the State's 20x2020 Water Conservation Plan.
- *Option 4* requires the subtraction of Total Savings from the Base GPCD:
    - Total Savings includes indoor residential savings, meter savings, CII savings, and landscape and water loss savings.

San Clemente's Compliance Option Selection

With the assistance of MWDOC in the calculation of the City's base daily per capita use and water use targets, the City has selected to comply with **Option 1**.

While each retail agency is required to choose a compliance option in 2010, DWR allows for the agency to change its compliance option in 2015. This will allow the City to determine its water use targets for Compliance Option 2 and 4 as it anticipates more data to be available for targets calculation in the future.

2.4.3. Regional Alliance

Retail agencies can choose to meet the SBx7-7 targets on its own or several retail agencies may form a regional alliance and meet the water use targets as a region. The benefit for an agency that joins a regional alliance is that it has multiple means of meeting compliance.

The City is a member of the Orange County 20x2020 Regional Alliance formed by MWDOC. This regional alliance consists of 29 retail agencies in Orange County as described in MWDOC's 2010 RUWMP. The Regional Alliance Weighted 2015 target is

174.1 GPCD and 2020 target is 156.5 GPCD. Should the Orange County 20x2020 Regional Alliance meet its water use target, then the City will be deemed complaint. If the Regional Alliance fails to meet its water use target, then DWR will look whether the City has achieved its individual target.

2.4.4. Baseline Potable Water Use

The first step to calculating an agency's water use targets is to determine its base daily per capita potable water use (baseline water use). This baseline potable water use is essentially the agency's gross potable water use divided by its service area population, reported in gallons per capita per day (GPCD). The baseline potable water use is calculated as a continuous 10-year average during a period which ends no earlier than December 31, 2004 and no later than December 31, 2010. Agencies that recycled water made up 10% or more of 2008 retail water delivery can use up to a 15-year average for the calculation.

Recycled water use was less than 10% of the City's retail delivery in 2008; therefore, a 10-year instead of a 15-year rolling average was calculated. The City's baseline potable water use is **186 GPCD** which was obtained from the 10-year period July 1, 1995 to June 30, 2005.

Tables 2-6 and 2-7 provide the base period ranges used to calculate the baseline potable water use for the City as well as the service area population and annual water use data which the base daily per capita potable water use was derived. Data provided in Table 2-6 was used to calculate the continuous 10-year average baseline GPCD. Moreover, regardless of the compliance option adopted by the City, it will need to meet a minimum water use target of 5% reduction from a five-year baseline which begins July 1, 2003 and ends June 30, 2008 as calculated in Table 2-7.

Table 2-6: Base Daily per Capita Potable Water Use – 10-year range

Highest Available Baseline [1]	Beginning	Ending
10 Year Avg	July 1, 1995	June 30, 2005

Fiscal Year Ending	Service Area Population	Gross Potable Water Use (gallons per day)	Daily Per Capita Potable Water Use
1996	43,776	8,338,482	190
1997	44,709	8,705,043	195
1998	45,725	8,093,335	177
1999	46,739	8,722,540	187
2000	48,115	9,568,771	199
2001	49,750	9,351,120	188
2002	52,091	10,011,750	192
2003	54,013	9,734,464	180
2004	54,632	10,131,824	185
2005	54,754	8,860,380	162
		Base Daily Per Capita Water Use:	186

[1] The most recent year in base period must end no earlier than December 31, 2004, and no later than December 31, 2010. The base period cannot exceed 10 years unless at least 10 percent of 2008 retail deliveries were met with recycled water.

Table 2-7: Minimum 5% per Capita Potable Water Use Reduction – 5-year range

Highest Available Baseline [2]	Beginning	Ending
5 Year Avg	July 1, 2003	June 30, 2008

Fiscal Year Ending	Service Area Population	Gross Potable Water Use (gallons per day)	Daily Per Capita Potable Water Use
2004	54,632	10,131,824	185
2005	54,754	8,860,380	162
2006	54,759	9,765,531	178
2007	54,619	10,352,956	190
2008	54,726	9,871,411	180
		Base Daily Per Capita Water Use:	179
		Minimum Water Use 2020 Target (5% reduction):	170

[2] The base period must end no earlier than December 31, 2007, and no later than December 31, 2010.

2.4.5. SBx7-7 Water Use Targets

Under Compliance Option 1, the simple 20% reduction from the baseline, the City's 2015 interim water use target is 167 GPCD and the 2020 final water use target is **148 GPCD** as summarized in Table 2-8.

Table 2-8: Preferred Compliance Option and Water Use Targets (GPCD)

	Baseline	2015 Target	2020 Target
Option 1 - Simple 20% Reduction	186	167	148

Figure 2-1 illustrates the City's actual GPCD between 1991 and 2010 and the baseline GPCD obtained by averaging GPCD over the 10-year period between July 1, 1995 and June 30, 2005. Figure 2-1 also shows the 2015 interim and 2020 final water use targets under compliance option 1.

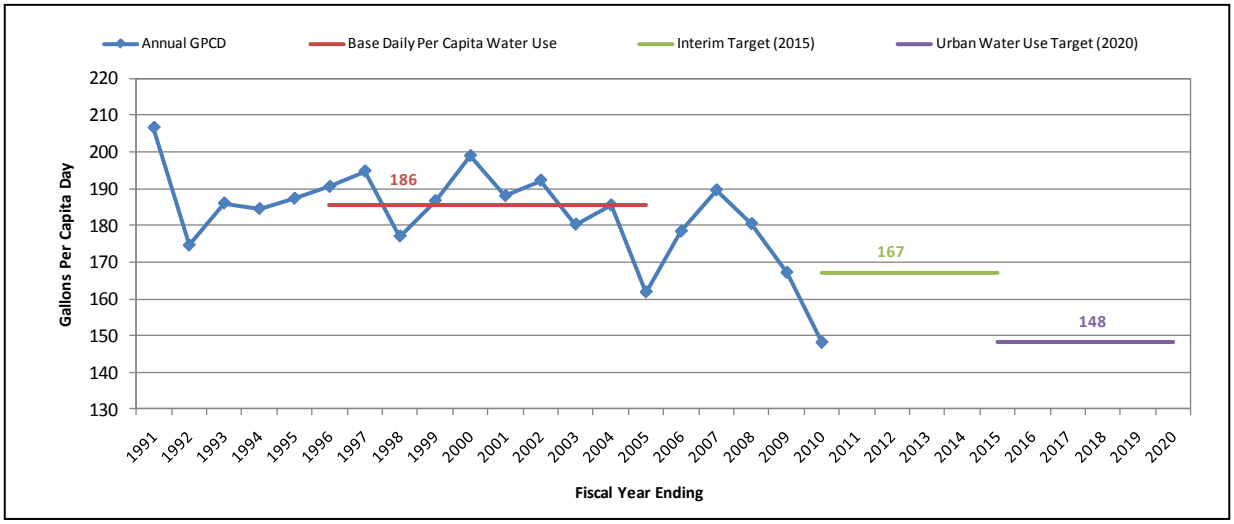


Figure 2-1: City of San Clemente's 20x2020 Water Use Targets Under Compliance Option 1

2.4.6. SBx7-7 Compliance Strategy Summary

The City is on track to meet the SBx7-7 per capita water use reduction requirements individually and as part of a MWDOC regional alliance. In 2010, the City's per capita water use was already 148 GPCD, which is the calculated 20% reduction from baseline target for 2020. To achieve and maintain the target per capita water use the City will continue to implement the Demand Management Measures listed in Section 4 of the UWMP in addition to converting existing dedicated irrigation accounts now using potable water to recycled water. Because the SBx7-7 requirements apply to potable per capita water use, the City's recycled water expansion project will benefit the City's compliance as approximately 900 AFY of irrigation demand will switch from potable water to recycled water by 2020.

2.5. Demand Projections

2.5.1. 25 Year Projections

One of the main objectives of this UWMP is to provide an insight into the City's future water demand outlook. As discussed above, currently, the City's total water demand is 10,090 acre-feet comprising of 85% imported water, 9% recycled water, and 6% local groundwater. By 2035, the City's total water demand is estimated to be 10,975 acre-feet with a reduced demand of imported to 74% while recycled water and local groundwater will comprise 17% and 9% respectively, as illustrated in Table 2-9.

Table 2-9: Current and Projected Total Water Demands (AFY)

Water Supply Sources	Fiscal Year Ending					
	2010	2015	2020	2025	2030	2035-opt
MWDOC (Imported Treated Full Service (non-int.))	8,570	8,150	8,010	8,090	8,095	8,145
San Clemente Sub-Basin	620	1,000	1,000	1,000	1,000	1,000
Recycled Water	900	1,500	1,830	1,830	1,830	1,830
Total	**10,090**	**10,650**	**10,840**	**10,920**	**10,925**	**10,975**

The City's 25-year demand projections for imported water shown in Table 2-10 are based on the projections furnished by MWDOC in consultation with City staff. MWDOC as the regional wholesale supplier of Orange County works in collaboration with each of its member agencies as well as with Metropolitan, its wholesaler to develop demand projections for imported water. The City's 25-year demand projections place the City in compliance with SBx7-7 requirements for a 20% per capita potable water use reduction by 2020.

Table 2-10: San Clemente's Demand Projections Provided by Wholesale Suppliers (AFY)

Wholesales	Fiscal Year Ending				
	2015	2020	2025	2030	2035-opt
MWDOC	8,150	8,010	8,090	8,095	8,145

2.5.2. Low Income Household Projections

One significant change to the UWMP Act since 2005 is the requirement for retail water suppliers to include water use projections for single-family and multifamily residential housing needed for lower income and affordable households. This requirement is to assist the retail suppliers in complying with the requirement under Section 65589.7 of the Government Code that suppliers grant a priority for the provision of service to housing

units affordable to lower income households. A lower income household is defined as a household earning 80% of the County of Orange's median income or less.

In order to identify the planned lower income housing projects within its service area, DWR[1] recommends that retail suppliers may rely on Regional Housing Needs Assessment (RHNA) or Regional Housing Needs Plan information developed by the local council of governments, the California Department of Housing and Community Development.

The RHNA is an assessment process performed periodically as part of Housing Element and General Plan updates at the local level. Regional Council of Governments in California are required by the State Housing Element Law enacted in 1980 to determine the existing and projected regional housing needs for persons at all income levels. The RHNA quantifies the need for housing by income group within each jurisdiction during specific planning periods. The RHNA is used in land use planning, to prioritize local resource allocation and to help decide how to address existing and future housing needs. The RHNA consists of two measurements: 1) existing need for housing, and 2) future need for housing.

The current RHNA planning period is January 1, 2006 to June 30, 2014 completed by the Southern California Association of Governments (SCAG) in 2007. The next RHNA which will cover the planning period of January 1, 2011 to September 30, 2021 is not expected to be completed until fall of 2012; therefore, the 2007 RHNA will be used for the purpose of this 2010 UWMP.

Based on the 2007 Final Regional Housing Need Allocation Plan[2], the projected housing need for low and very low income households (hereafter referred to as low-income) in the City of San Clemente are 17.6% and 21.6%, respectively or 39.2% combined.

Therefore, from inference, it is estimated that approximately 39.2% of the projected single-family and multi-family water demands within the City's service area will be needed for low income households. Table 2-11 provides a breakdown of the projected water needs for low income single family and multifamily units. The projected water demands shown here represent 39.2% of the projected water demand by customer type for single-family and multifamily categories provided in Table 2-4 above. For example, the total single family residential demand is projected to be 5,000 AFY in 2015 and 5,300 AFY in 2035. The projected water demands for housing needed for single family low income households are 1,960 and 2,078 AFY for 2015 and 2035, respectively.

[1] California Department of Water Resources, Guidebook to Assist Urban Water Suppliers to Prepare a 2010 UWMP, Final (March 2011)
[2] Southern California Association Governments, Final Regional Housing Need Allocation Plan for Jurisdictions within the Six County SCAG Region (July 2007)

Table 2-11: Projected Water Demands for Housing Needed for Low Income Households (AFY)

Water Use Sector	Fiscal Year Ending				
	2015	2020	2025	2030	2035
Total Retail Demand	10,650	10,840	10,920	10,925	10,975
Total Residential Demand	6,500	6,650	6,760	6,820	6,870
Total Low Income Households Demand	***2,548***	***2,607***	***2,650***	***2,673***	***2,693***
SF Residential Demand - Total	5,000	5,100	5,200	5,250	5,300
SF Residential Demand - Low Income Households	***1,960***	***1,999***	***2,038***	***2,058***	***2,078***
MF Residential Demand - Total	1,500	1,550	1,560	1,570	1,570
MF Residential Demand - Low Income Households	***588***	***608***	***612***	***615***	***615***

3. Water Sources and Supply Reliability

3.1. Overview

The City's main source of water supply is imported water from Metropolitan through purchases from MWDOC. Imported water is supplemented by local groundwater extracted from City owned wells, and recycled water produced at the City's recycled water treatment facility. Currently, the City relies on 85 percent imported water, 6 percent groundwater from the San Clemente Sub-Basin, and 9 percent recycled water. The water supply mix is expected to shift to more recycled water use as a result of the City's recycled water treatment facility expansion. Once completed, the City's recycled water supply is projected to double to 1,830 AFY by 2020, 17% of the total supply in 2020. Local groundwater production is also expected to increase from the current 620 AFY to the well capacity of 1,000 AFY. Consequently, the reliance on imported water is expected to decline from 85% to approximately 74% by 2020.

The City works together with two primary agencies – Metropolitan, and MWDOC to insure a safe and high quality water supply, which will continue to serve the community in periods of drought and shortage. The sources of imported water supplies include the Colorado River and the State Water Project (SWP). Metropolitan's 2010 Integrated Water Resources Plan (IRP) update describes the core water resource strategy that will be used to meet full service demands (non-interruptible agricultural and replenishment supplies) at the retail level under all foreseeable hydrologic conditions from 2015 through 2035. The imported water supply numbers shown here represent only the amount of supplies projected to meet demands and not the full supply capacity.

Figure 3-1 depicts the City's current and projected water supplies by source through 2035.

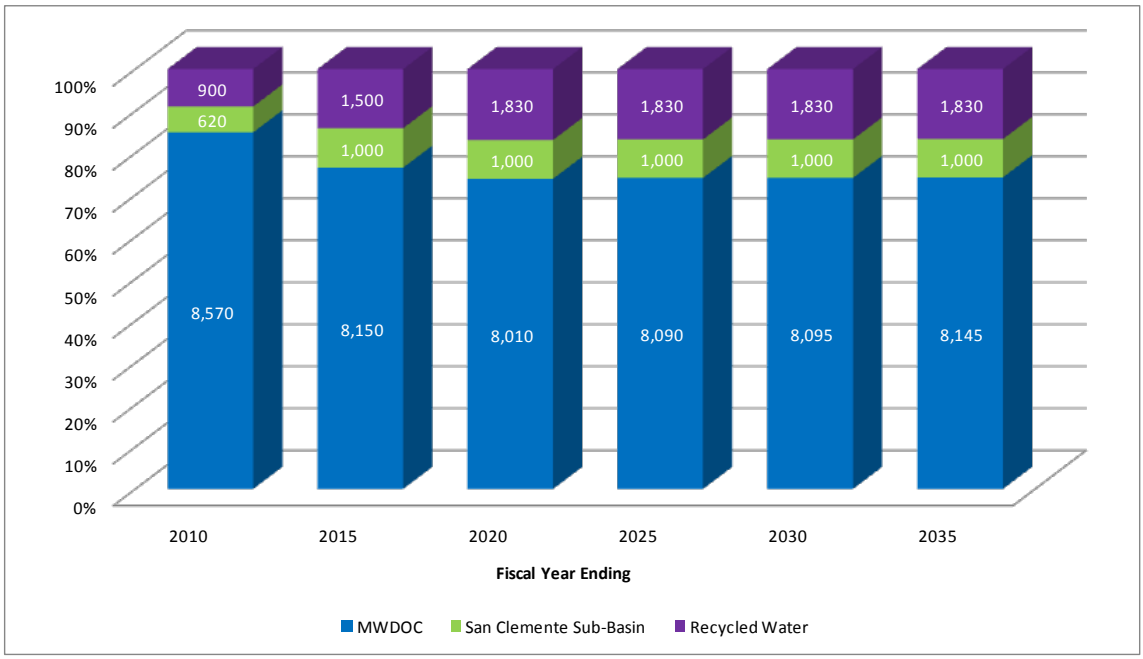


Figure 3-1: Current and Projected Water Supplies (AFY)

The following section provides a detailed discussion of the City's main water sources as well as projections to the City's future water supply portfolio for the next 25 years. Moreover, it compares projected supply and demand under various hydrological conditions to determine the City's supply reliability for the 25 year planning horizon. This section satisfies the requirements of § 10631 (b) and (c), and 10635 of the Water Code.

3.2. Imported Water

In 2010, the City relied on 8,570 AFY of imported water wholesaled by Metropolitan through MWDOC. Imported water represents approximately 85 percent of the City's total water supply. Metropolitan's principal sources of water originate from two sources - the Colorado River via the Colorado Aqueduct and the Lake Oroville watershed in Northern California through the State Water Project (SWP). This water is treated at the Robert B. Diemer Filtration Plant located north of Yorba Linda. Typically, the Diemer Filtration Plant receives a blend of Colorado River water from Lake Mathews through the Metropolitan Lower Feeder and SWP water through the Yorba Linda Feeder. The water is then delivered to the City via two systems: the East Orange County Feeder No.2/Joint Regional Water Supply System Transmission Main/Local Transmission Main System (LTM) and the Allen-McColloch Pipeline/South County Pump Station/South County Pipeline/Water Importation Pipeline system (WIP). The City has 14.78 cfs of capacity in the LTM and 15.00 cfs of ultimate capacity in the WIP. The capacity through the WIP is

limited to 6.7 cfs until 2016 or until the City purchases additional capacity in the Allen-McColloch Pipeline (AMP).

3.2.1. Metropolitan's 2010 Regional Urban Water Management Plan

Metropolitan's 2010 Regional Urban Water Management Plan (RUWMP) reports on its water reliability and identifies projected supplies to meet the long-term demand within its service area. It presents Metropolitan's supply capacities from 2015 through 2035 under the three hydrologic conditions specified in the Act: single dry-year, multiple dry-years, and average year.

Colorado River Supplies

Colorado River Aqueduct supplies include supplies that would result from existing and committed programs and from implementation of the Quantification Settlement Agreement (QSA) and related agreements to transfer water from agricultural agencies to urban uses. Colorado River transactions are potentially available to supply additional water up to the CRA capacity of 1.25 MAF on an as-needed basis.

State Water Project Supplies

Metropolitan's State Water Project (SWP) supplies have been impacted in recent years by restrictions on SWP operations in accordance with the biological opinions of the U.S. Fish and Wildlife Service and National Marine Fishery Service issued on December 15, 2008 and June 4, 2009, respectively. In dry, below-normal conditions, Metropolitan has increased the supplies received from the California Aqueduct by developing flexible Central Valley/SWP storage and transfer programs. The goal of the storage/transfer programs is to develop additional dry-year supplies that can be conveyed through the available Banks pumping capacity to maximize deliveries through the California Aqueduct during dry hydrologic conditions and regulatory restrictions.

In June 2007, Metropolitan's Board approved a Delta Action Plan that provides a framework for staff to pursue actions with other agencies and stakeholders to build a sustainable Delta and reduce conflicts between water supply conveyance and the environment. The Delta action plan aims to prioritize immediate short-term actions to stabilize the Delta while an ultimate solution is selected, and mid-term steps to maintain the Bay-Delta while the long-term solution is implemented.

State and federal resource agencies and various environmental and water user entities are currently engaged in the development of the Bay Delta Conservation Plan (BDCP), which is aimed at addressing the basic elements that include the Delta ecosystem restoration, water supply conveyance, and flood control protection and storage development. In evaluating the supply capabilities for the 2010 RUWMP, Metropolitan assumed a new Delta conveyance is fully operational by 2022 that would return supply

reliability similar to 2005 condition, prior to supply restrictions imposed due to the Biological Opinions.

Storage

Storage is a major component of Metropolitan's dry year resource management strategy. Metropolitan's likelihood of having adequate supply capability to meet projected demands, without implementing its Water Supply Allocation Plan (WSAP), is dependent on its storage resources. In developing the supply capabilities for the 2010 RUWMP, Metropolitan assumed a simulated median storage level going into each of five-year increments based on the balances of supplies and demands.

Supply Reliability

Metropolitan evaluated supply reliability by projecting supply and demand conditions for the single- and multi-year drought cases based on conditions affecting the SWP (Metropolitan's largest and most variable supply). For this supply source, the single driest-year was 1977 and the three-year dry period was 1990-1992. Metropolitan's analyses are illustrated in Tables 3-1, 3-2, and 3-3 which correspond to Metropolitan's 2010 RUWMP's Tables 2-11, 2-9 and 2-10, respectively. These tables show that the region can provide reliable water supplies not only under normal conditions but also under both the single driest year and the multiple dry year hydrologies.

Table 3-1: Metropolitan Average Year Projected Supply Capability and Demands for 2015 to 2035

AverageYear
Supply Capability[1] and Projected Demands
Average of 1922-2004 Hydrologies
(acre-feet per year)

Forecast Year	2015	2020	2025	2030	2035
Current Programs					
In-Region Storage and Programs	685,000	931,000	1,076,000	964,000	830,000
California Aqueduct[2]	1,550,000	1,629,000	1,763,000	1,733,000	1,734,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	1,507,000	1,529,000	1,472,000	1,432,000	1,429,000
Aqueduct Capacity Limit[4]	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**3,485,000**	**3,810,000**	**4,089,000**	**3,947,000**	**3,814,000**
Demands					
Firm Demands of Metropolitan	1,826,000	1,660,000	1,705,000	1,769,000	1,826,000
IID-SDCWA Transfers and Canal Linings	180,000	273,000	280,000	280,000	280,000
Total Demands on Metropolitan[5]	**2,006,000**	**1,933,000**	**1,985,000**	**2,049,000**	**2,106,000**
Surplus	**1,479,000**	**1,877,000**	**2,104,000**	**1,898,000**	**1,708,000**
Programs Under Development					
In-Region Storage and Programs	206,000	306,000	336,000	336,000	336,000
California Aqueduct	382,000	383,000	715,000	715,000	715,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	187,000	187,000	187,000	182,000	182,000
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**588,000**	**689,000**	**1,051,000**	**1,051,000**	**1,051,000**
Potential Surplus	**2,067,000**	**2,566,000**	**3,155,000**	**2,949,000**	**2,759,000**

[1] Represents Supply Capability for resource programs under listed year type.

[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.

[3] Colorado River Aqueduct includes water management programs, IID-SDCWA transfers and canal linings conveyed by the aqueduct.

[4] Maximum CRA deliveries limited to 1.25 MAF including IID-SDCWA transfers and canal linings.

[5] Firm demands are adjusted to include IID-SDCWA transfers and canal linings. These supplies are calculated as local supply, but need to be shown for the purposes of CRA capacity limit calculations without double counting.

Table 3-2: Metropolitan Single-Dry Year Projected Supply Capability and Demands for 2015 to 2035

Single Dry-Year
Supply Capability[1] and Projected Demands
Repeat of 1977 Hydrology
(acre-feet per year)

Forecast Year	2015	2020	2025	2030	2035
Current Programs					
In-Region Storage and Programs	685,000	931,000	1,076,000	964,000	830,000
California Aqueduct[2]	522,000	601,000	651,000	609,000	610,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	1,416,000	1,824,000	1,669,000	1,419,000	1,419,000
Aqueduct Capacity Limit[4]	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**2,457,000**	**2,782,000**	**2,977,000**	**2,823,000**	**2,690,000**
Demands					
Firm Demands of Metropolitan	1,991,000	1,889,000	1,921,000	1,974,000	2,039,000
IID-SDCWA Transfers and Canal Linings	180,000	273,000	280,000	280,000	280,000
Total Demands on Metropolitan[5]	**2,171,000**	**2,162,000**	**2,201,000**	**2,254,000**	**2,319,000**
Surplus	**286,000**	**620,000**	**776,000**	**569,000**	**371,000**
Programs Under Development					
In-Region Storage and Programs	206,000	306,000	336,000	336,000	336,000
California Aqueduct	556,000	556,000	700,000	700,000	700,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	187,000	187,000	187,000	182,000	182,000
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**762,000**	**862,000**	**1,036,000**	**1,036,000**	**1,036,000**
Potential Surplus	**1,048,000**	**1,482,000**	**1,812,000**	**1,605,000**	**1,407,000**

[1] Represents Supply Capability for resource programs under listed year type.

[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.

[3] Colorado River Aqueduct includes water management programs, IID-SDCWA transfers and canal linings conveyed by the aqueduct.

[4] Maximum CRA deliveries limited to 1.25 MAF including IID-SDCWA transfers and canal linings.

[5] Firm demands are adjusted to include IID-SDCWA transfers and canal linings. These supplies are calculated as local supply, but need to be shown for the purposes of CRA capacity limit calculations without double counting.

Table 3-3: Metropolitan Multiple-Dry Year Projected Supply Capability and Demands for 2015 to 2035

Multiple Dry-Year
Supply Capability[1] and Projected Demands
Repeat of 1990-1992 Hydrology
(acre-feet per year)

Forecast Year	2015	2020	2025	2030	2035
Current Programs					
In-Region Storage and Programs	246,000	373,000	435,000	398,000	353,000
California Aqueduct[2]	752,000	794,000	835,000	811,000	812,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	1,318,000	1,600,000	1,417,000	1,416,000	1,416,000
Aqueduct Capacity Limit[4]	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**2,248,000**	**2,417,000**	**2,520,000**	**2,459,000**	**2,415,000**
Demands					
Firm Demands of Metropolitan	2,056,000	1,947,000	2,003,000	2,059,000	2,119,000
IID-SDCWA Transfers and Canal Linings	180,000	241,000	280,000	280,000	280,000
Total Demands on Metropolitan[5]	**2,236,000**	**2,188,000**	**2,283,000**	**2,339,000**	**2,399,000**
Surplus	**12,000**	**229,000**	**237,000**	**120,000**	**16,000**
Programs Under Development					
In-Region Storage and Programs	162,000	280,000	314,000	336,000	336,000
California Aqueduct	242,000	273,000	419,000	419,000	419,000
Colorado River Aqueduct					
Colorado River Aqueduct Supply[3]	187,000	187,000	187,000	182,000	182,000
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**404,000**	**553,000**	**733,000**	**755,000**	**755,000**
Potential Surplus	**416,000**	**782,000**	**970,000**	**875,000**	**771,000**

[1] Represents Supply Capability for resource programs under listed year type.

[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.

[3] Colorado River Aqueduct includes water management programs, IID-SDCWA transfers and canal linings conveyed by the aqueduct.

[4] Maximum CRA deliveries limited to 1.25 MAF including IID-SDCWA transfers and canal linings.

[5] Firm demands are adjusted to include IID-SDCWA transfers and canal linings. These supplies are calculated as local supply, but need to be shown for the purposes of CRA capacity limit calculations without double counting.

3.2.2. San Clemente's Imported Water Supply Projections

Based on Metropolitan's supply projections that it will be able to meet full service demands under all three hydrologic scenarios, MWDOC, Orange County's wholesale supplier projects that it would also be able to meet the demands of its retail agencies under these conditions.

California Water Code section 10631 (k) requires the wholesale agency to provide information to the urban retail water supplier for inclusion in its UWMP that identifies and quantifies the existing and planned sources of water available from the wholesale agency. Table 3-4 indicates the wholesaler's water availability projections by source for the next 25 years as provided to the City by MWDOC. The water supply projections shown in Table 3-4 represent the amount of supplies projected to meet demands. They do not represent the full supply capacity.

Table 3-4: Wholesaler Identified & Quantified Existing and Planned Sources of Water (AFY)

Wholesaler Sources	Fiscal Year Ending				
	2015	2020	2025	2030	2035-opt
MWDOC	8,150	8,010	8,090	8,095	8,145

3.3. Groundwater

Local groundwater has been the cheapest source of supply for the City. However, the City has limited access to groundwater supply. The City relies on approximately 660 acre-feet per year of groundwater from the non-adjudicated San Clemente Sub-Basin. This local source of supply meets approximately 6% of the City's total annual demand. The City currently has two operating wells, Well 6 and Well 8. The City is projected to increase groundwater production to 1,000 AFY by 2015. The City established a safe pumping yield on the San Clemente Sub-Basin of 1,100 acre-feet per year. This safe pumping yield is in place to avoid seawater intrusion and prevent basin overdraft.

3.3.1. San Clemente Sub-Basin Management

The 1987 groundwater study by Boyle Engineering indicated that confined groundwater in the San Clemente Sub-Basin is produced from a deep-lying series of semi-consolidated sandstone beds with numerous coarse gravel lenses. The majority of the soils in the sub-unit have slow or very slow infiltration rates. The usable surface area of San Clemente Sub-Basin was identified to be 107 acres with a hypothetical usable depth ranging from 10 to 110 feet. After assessing the aquifer's size, safe yield was set at 1,100 AFY. The City has successfully relied on well water production during drought years and does not anticipate a reduction in safe yield.

The City's groundwater management procedure was created in cooperation with the California Department of Public Health (CDPH) and incorporated results from the 1987 study by Boyle Engineering Corporation included in Appendix B, titled "City of San Clemente Groundwater Supply and Management Study." The City established a safe pumping yield on the San Clemente Sub-Basin of 1,100 acre-feet per year. This safe pumping yield is in place to avoid seawater intrusion and prevent basin overdraft. Groundwater pumping is monitored to ensure water extraction does not exceed the safe yield.

Table 3-5: Safe Pumping Yield (AFY)

Basin Name	Pumping Yield (AFY)
San Clemente Sub-Basin	1,100
Total	**1,100**

3.3.2. Historical Groundwater Production

Table 3-6 provides historical pumping data for the groundwater basin in the past five years. Local groundwater accounted for only about 5 percent of the City's total supply. The City's groundwater production for the past five years has been lower than the sustainable yield of 1,100 AFY due to rehabilitation work being performed on Well No.6 and replacement of Well No. 7 with Well No. 8.

Table 3-6: Amount of Groundwater Pumped in the Past 5 Years (AFY)

Basin Name(s)	Fiscal Year Ending				
	2005	2006	2007	2008	2009
San Clemente Sub-Basin	428	279	529	474	554
% of Total Water Supply	**4%**	**2%**	**4%**	**4%**	**5%**

3.3.3. Projections of Groundwater Production

Annual groundwater extractions are currently 620 AFY and are anticipated to increase to 1,000 AFY by 2015. This is virtually at the safe pumping yield of 1,100 AFY and will represent 10 percent of the City's total water supply. Table 3-7 shows the amount of groundwater production the City expects to produce from the City's sub-basin in the next 25 years.

Table 3-7: Amount of Groundwater Projected to be Pumped (AFY)

Basin Name(s)	Fiscal Year Ending					
	2010	2015	2020	2025	2030	2035-opt
San Clemente Sub-Basin	620	1,000	1,000	1,000	1,000	1,000
% of Total Water Supply	**6%**	**9%**	**9%**	**9%**	**9%**	**9%**

3.4. Recycled Water

One of the major components of the City's water conservation program is its recycled water program. The City provides additional treatment to a portion of its secondary treated wastewater, rather than discharging it to the ocean, and is used for landscape irrigation services. The City currently owns and operates a Water Reclamation Plant (WRP) with a capacity of 2.2 MGD with an anticipated recycled water expansion project slated for fiscal year 2012-13 to 4.4 MGD. The City's recycled water program is more fully described in Section 6.

3.5. Supply Reliability

3.5.1. Overview

It is required that every urban water supplier assess the reliability to provide water service to its customers under normal, dry, and multiple dry water years. The City depends on a combination of imported and local supplies to meet its water demands and has taken numerous steps to ensure it has adequate supplies. Development of groundwater, a recycled water system, and desalination opportunities augment the reliability of the imported water system. There are various factors that may impact reliability of supplies such as legal, environmental, water quality and climatic issues which are discussed below. Despite these issues, water supplies are projected to meet full-service demands; Metropolitan's 2010 RUWMP finds that Metropolitan is able to meet with existing supplies, the full service demands of its member agencies starting 2015 through 2035 during normal years, single dry year, and multiple dry years.

Metropolitan's 2010 Integrated Water Resources Plan (IRP) update describes the core water resource strategy that will be used to meet full-service demands at the retail level under all foreseeable hydrologic conditions from 2015 through 2035. The foundation of Metropolitan's resource strategy for achieving regional water supply reliability has been to develop and implement water resources programs and activities through its IRP preferred resource mix. This preferred resource mix includes: conservation; local resources such as water recycling and groundwater recovery; Colorado River supplies and transfers; SWP supplies and transfers; in-region surface reservoir storage; in-region groundwater storage; out-of-region banking, and; treatment, conveyance, and

infrastructure improvements. MWDOC is reliant on Metropolitan for all of its imported water. With the addition of planned supplies under development, Metropolitan's 2010 RUWMP finds that Metropolitan will be able to meet full-service demands from 2015 through 2035, even under a repeat of the worst drought. Table 3-8 shows the reliability of the wholesaler's supply for single dry year and multiple dry year scenarios.

Table 3-8: Wholesaler Supply Reliability - % of Normal AFY

		Multiple Dry Water Years		
Wholesaler Sources	Single Dry	Year 1	Year 2	Year 3
MWDOC	100%	100%	100%	100%

In addition to meeting full-service demands from 2015 through 2035, Metropolitan projects reserve and replenishment supplies to refill system storage. MWDOC's 2010 RUWMP states that it will meet full service demands to its retail agencies from 2015 through 2035. Table 3-9 shows the basis of water year data used to predict Metropolitan's drought supply availability.

Table 3-9: Basis of Water Year Data

Water Year Type	Base Year	Base Year	Base Year
Normal Water Year	Average 1922-2004		
Single-Dry Water Year	1977		
Multiple-Dry Water Years	1990	1991	1992

3.5.2. Factors Impacting Reliability

The Act requires a description of the reliability of the water supply and vulnerability to seasonal or climatic shortage. The City relies on import supplies provided by Metropolitan through MWDOC. The following are some of the factors identified by Metropolitan that may have an impact on the reliability of Metropolitan supplies.

Environment – Endangered species protection needs in the Sacramento-San Joaquin River Delta have resulted in operational constraints to the SWP system. The Bay-Delta's declining ecosystem caused by agricultural runoff, operation of water pumps and other factors has led to historical restrictions in SWP supply deliveries. SWP delivery restrictions due to the biological opinions resulted in the loss of about one-third of the available SWP supplies in 2008, and the restrictions continue to impact SWP supply availability today.

Legal – Listings of additional species under the Endangered Species Act and new regulatory requirements could impact SWP operations by requiring additional export

reductions, releases of additional water from storage or other operational changes impacting water supply operations. Additionally, the Quantification Settlement Agreement has been challenged in courts and may have impacts on the Imperial Irrigation District and San Diego County Water Authority water transfer. If there are negative impacts, San Diego could become more dependent on the Metropolitan supplies, further stretching limited imported supplies.

Water Quality –Water imported from the Colorado River Aqueduct (CRA) contains high level of salts. The operational constraint is that this water needs to be blended with SWP supplies to meet the target salinity of 500 mg/L of total dissolved solids (TDS). Another water quality concern is related to the quagga mussel. Controlling the spread and impacts of quagga mussels within the Colorado River Aqueduct requires extensive maintenance and results in reduced operational flexibility.

Climate Change – Changing climate patterns are expected to shift precipitation patterns and affect water supply. Unpredictable weather patterns will make water supply planning even more challenging. The areas of concern for California include the reduction in Sierra Nevada snowpack, increased intensity and frequency of extreme weather events, and rising sea levels causing increased risk of levee failure.

Legal, environmental, and water quality issues may have impacts on Metropolitan supplies. It is felt, however, that climatic factors would have more of an impact than the others. Climatic conditions have been projected based on historical patterns; however severe pattern changes may occur in the future. Table 3-10 shows the factors resulting in inconsistency of supply.

Table 3-10: Factors Resulting in Inconsistency of Supply

Name of Supply	Legal	Environmental	Water Quality	Climatic
State Water Project	X	X		
Colorado River			X	X

These and other factors are addressed in greater detail in Metropolitan's 2010 RUWMP.

3.5.2.1. Water Quality

Imported Water **-** Metropolitan is responsible for providing water of a high quality throughout its service area. The water that Metropolitan delivers is tested both for currently regulated contaminants and for additional contaminants of concern as over 300,000 water quality tests are conducted each year to regulate the safety of its waters. Metropolitan's supplies originate primarily from the Colorado River Aqueduct (CRA) and from the State Water Project (SWP). A blend of these two sources, proportional to

each year's availability of the source, is then delivered throughout Metropolitan's service area.

Metropolitan's primary sources face individual water quality issues of concern. The CRA water source contains a higher level of total dissolved solids (TDS) and a lower level of organic material while the SWP contains a lower TDS level while its level or organic materials is much higher, lending to the formation of disinfection byproducts. To remediate the CRA's high level of salinity and the SWP's high level of organic materials, Metropolitan has been blending CRA water with SWP supplies as well as implementing updated treatment processes to decrease the disinfection byproducts. In addition, Metropolitan has been engaged in efforts to protect its Colorado River supplies from threats of uranium, perchlorate, and chromium VI while also investigating the potential water quality impact of emerging contaminants, N-nitrosodimethylamine (NDMA) and pharmaceuticals and personal care products (PPCPs). Metropolitan has assured its ability to overcome the above mentioned water quality concerns through its protection of source waters, implementation of renovated treatment processes, and blending of its two sources. While unforeseeable water quality issues could alter reliability, Metropolitan's current strategies ensure the deliverability of high quality water.

Groundwater – The City treats for removal of iron and manganese to meet water quality standards.

Table 3-11 shows the impact in acre-feet per year that water quality would have on supply.

Table 3-11: Water Quality – Current and Projected Water Supply Impacts (AFY)

Water Source	Fiscal Year Ending					
	2010	2015	2020	2025	2030	2035-opt
Imported	0	0	0	0	0	0
Local	0	0	0	0	0	0

3.5.3. Normal-Year Reliability Comparison

The City has entitlements and/or written contracts to receive imported water from Metropolitan via the regional distribution system. Although pipeline capacity rights do not guarantee the availability of water, per se, they do guarantee the ability to convey water when it is available to the Metropolitan distribution system. All imported water supplies assumed in this section are available to the City from existing water transmission facilities. Table 3-12 shows supply and demand under normal year conditions. Total water supplies projected to be available from Metropolitan exceed demands; however, only the projected supplies necessary to meet projected demands are included.

Table 3-12: Projected Normal Water Supply and Demand (AFY)

	Fiscal Year Ending				
	2015	2020	2025	2030	2035
Total Demand	**10,650**	**10,840**	**10,920**	**10,925**	**10,975**
San Clemente Sub-Basin	1,000	1,000	1,000	1,000	1,000
Recycled Water	1,500	1,830	1,830	1,830	1,830
Imported	8,150	8,010	8,090	8,095	8,145
Total Supply	10,650	10,840	10,920	10,925	10,975

3.5.4. Single Dry-Year Reliability Comparison

The City has documented that it is 100% reliable for single dry year demands from 2015 through 2035 with a demand increase of 7.4% using FY 2006-07 as the single dry year. Table 3-13 compiles supply and demand projections for a single dry water year. The available imported supply is greater than shown; however, only the projected supplies necessary to meet projected demands are included.

Table 3-13: Projected Single-Dry Year Water Supply and Demand (AFY)

	Fiscal Year Ending				
	2015	2020	2025	2030	2035
Total Demand	**11,438**	**11,642**	**11,728**	**11,733**	**11,787**
San Clemente Sub-Basin	1,000	1,000	1,000	1,000	1,000
Recycled Water	1,500	1,830	1,830	1,830	1,830
Imported	8,938	8,812	8,898	8,903	8,957
Total Supply	11,438	11,642	11,728	11,733	11,787

3.5.5. Multiple Dry-Year Reliability Comparison

The City is capable of providing their customers all their demands with significant reserves in multiple dry years from 2015 through 2035 with a demand increase of 7.4% using FY 2006-07 as basis for each of the multiple dry years. FY 2006-07, the single highest demand year for the City, was used as the basis for each year in the 3-year sequence in order to provide the most conservative scenario for planning purposes. The City would be able to meet all demands even if the demand projections were to be increased by a large margin. Table 3-14 shows supply and demand projections under multiple dry year conditions.

Table 3-14: Projected Multiple Dry Year Period Supply and Demand (AFY)

		Fiscal Year Ending				
		2015	**2020**	**2025**	**2030**	**2035**
First Year Supply	**Total Demand**	**11,438**	**11,642**	**11,728**	**11,733**	**11,787**
	San Clemente Sub-Basin	800	800	800	800	800
	Recycled Water	1,500	1,830	1,830	1,830	1,830
	Imported	9,138	9,012	9,098	9,103	9,157
	Total Supply	11,438	11,642	11,728	11,733	11,787
Second Year Supply	**Total Demand**	**11,438**	**11,642**	**11,728**	**11,733**	**11,787**
	San Clemente Sub-Basin	800	800	800	800	800
	Recycled Water	1,500	1,830	1,830	1,830	1,830
	Imported	9,138	9,012	9,098	9,103	9,157
	Total Supply	11,438	11,642	11,728	11,733	11,787
Third Year Supply	**Total Demand**	**11,438**	**11,642**	**11,728**	**11,733**	**11,787**
	San Clemente Sub-Basin	800	800	800	800	800
	Recycled Water	1,500	1,830	1,830	1,830	1,830
	Imported	9,138	9,012	9,098	9,103	9,157
	Total Supply	11,438	11,642	11,728	11,733	11,787

4. Demand Management Measures

4.1. Overview

Water conservation, often called demand-side management, can be defined as practices, techniques, and technologies that improve the efficiency of water use. Such practices are referred to as demand management measures (DMM). Increased efficiency expands the use of the water resource, freeing up water supplies for other uses, such as population growth, new industry, and environmental conservation.

The increasing efforts in water conservation are spurred by a number of factors: growing competition for limited supplies, increasing costs and difficulties in developing new supplies, optimization of existing facilities, delay of capital investments in capacity expansion, and growing public support for the conservation of limited natural resources and adequate water supplies to preserve environmental integrity.

The City recognizes the importance of water conservation and has made water use efficiency an integral part of water use planning. The City has been a signatory to the California Urban Water Conservation Council's (CUWCC) Best Management Practices (BMPs) Memorandum of Understanding (MOU) since fall of 2007. Demand Management Measures as defined by the Act corresponds to the CUWCC's original list of 14 BMPs. The City is currently implementing all 14 DMMs described in the Act.

As a result of implementing the CUWCC BMPs in addition to providing financial incentives for high efficiency technologies, the City has produced a quantifiable cumulative water savings of approximately 3, 310 acre-feet. This calculation doesn't take into consideration the unquantifiable water savings attributable to the numerous public outreach and educational programs the City engages in.

This section of the UWMP satisfies the requirements of § 10631 (f) & (j). It describes how each DMM is being implemented by the City and how the City evaluates the effectiveness of the DMMs implemented. This section also provides an estimate of existing conservation savings where information is available.

4.2. Water Use Efficiency Programs

As a Signatory to the CUWCC MOU, the City has committed to use good-faith efforts to implement the 14 cost-effective BMPs. The City is actively participating in many water conservation activities. The City's Water Conservation Ordinance was amended and updated by the City Council in 2009 as Ordinance No. 1487 under Chapter 13.12 of the

San Clemente Municipal Code titled Water Conservation. The purpose of this chapter of the code is to establish standards and procedures for water conservation, to reduce or eliminate the waste of water in the City, to complement the City's Storm water Runoff Control Ordinance (SCMC Chapter 13.40), and enable implementation of the City's water shortage contingency measures. More details on this water conservation ordinance are provided in Section 5 of this document.

Moreover, as a member agency of MWDOC, the City participates in various Metropolitan's residential and CII rebate programs, as well as school and public education and outreach programs, and other programs administered by MWDOC. MWDOC also implements many of the urban water conservation BMPs on behalf of its member agencies. MWDOC's 2010 RUWMP should be referred to for a detailed discussion of each regional BMP program. The City works cooperatively with MWDOC for technical and financial support needed to facilitate meeting the terms of the CUWCC's MOU. MWDOC's current Water Use Efficiency Programs implemented on behalf of its member agencies follow three basic focuses:

1. Regional Program Development – MWDOC develops, obtains funding for, and implements regional BMP programs on behalf of all member agencies in Orange County.
2. Local Program Assistance - MWDOC assists member agencies to develop and implement local programs within their individual service areas.
3. Research and Evaluation – MWDOC conducts research programs which allow an agency to measure the water savings benefits of a specific program and then compare those benefits to the costs of implementing the program in order to evaluate the economic feasibility of the program.

At the local level, the City develops and manages DMM programs for the San Clemente community. Table 4-1 provides an overview of City's DMM program status.

Table 4-1: City of San Clemente's Demand Management Measures Overview

Demand Management Measure (DMM)	DMM Status		
	Past	Current	Future
Residential Water Surveys		X	
Residential Plumbing Retrofits		X	
System Water Audits, Leak Detection and Repair		X	
Metering with Commodity Rates		X	
Large Landscape Conservation Programs		X	
High-Efficiency Washing Machine Rebates		X	
Public Information Programs		X	
School Education Programs		X	
Commercial, Industrial and Institutional Programs		X	
Wholesale Agency Assistance		N/A	
Conservation Pricing		X	
Conservation Coordinator		X	
Water Waste Prohibition		X	
Residential ULFT Replacement Programs	X		

4.2.1. DMM 1: Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

The City participates in both regional and local programs in support of this BMP to affect water conservation in both single-family and multi-family residential customers. In implementing the various programs that fall under this DMM category, the City targets both single-family and multi-family high use customers. At this time, the City does not have a method developed to evaluate the water savings attributable to the programs in this DMM.

City of San Clemente's Local Programs

The City created local programs targeting high residential water users as described below.

Residential Survey - Since 1995, the City has offered free residential water use surveys to single-family and multi-family customers. The City has also provided free water conservation kits including showerheads, aerators, hose nozzles, and educational materials and continues to offer these kits and water surveys to those customers who request this service and to customers whose water use indicates a survey would be

beneficial. More recently, the City has improved these efforts by targeting high-water users in the billing process.

High Use Letters - During monthly water meter reading, a high use notification letter is sent to customers whose water use is significantly greater than the previous month (>80%). The letter provides suggestions for checking for toilet leaks and irrigation schedule changes. The letters are sent approximately one or two weeks before a customer would receive a high bill, allowing for quick resolution of leaks. A conservation flyer is also inserted which contains information about rebate programs, irrigation scheduling, and the City's water conservation water waste restrictions. A copy of the City's high use letter can be found in Appendix D.

Door Hangers - The City developed a door hanger to notify residents when excess irrigation runoff leaves their property. Information about adjusting sprinklers, urban runoff and water quality is explained on the back of the hanger along with a phone number to contact the City for additional information. Utilities staff have the door hangers on their trucks and distribute them as runoff is observed. A copy of the door tag is provided in Appendix D.

Customer Assistance - City staff works with customers to identify and resolve the causes of high water use. These high-use customers are identified as such via records of water use history, site observations and self-selection, such as when a customer calls and requests a water survey. City staff will meet customers at their homes and show customers how to read their water meter and check for leaks using the leak dial, provide toilet leak detection tablets and review the irrigation and even re-program the irrigation schedule. When on site, City staff also provides information about current rebates and BMPs to the customers that will help them conserve water.

WaterSmart SC Plant Rebate Program – The City provides up to $300 for drought-tolerant plants to residential customers who take out a minimum of 250 square feet of turf-grass. Program participants must agree to a pre-retrofit site survey at which time the landscape is surveyed, water efficient design ideas are discussed, and resources are shared with the participant. This program was launched in 2010 so a water saving measurement is not possible at this time.

MWDOC's Regional Programs

The City also participates in regional landscape programs aimed at helping residential and small commercial customers to be more water efficient through MWDOC including Smart Timer Rebate Program, Rotating Nozzle Rebate Program, Synthetic Turf Rebate, South County SmartScape Program, and the California Friendly Landscape Program as described below.

Smart Timer Rebate Program - The Smart Timer Rebate Program started in FY 2004/05. Under this regional program, residential and commercial properties, including Homeowners Association (HOA) common areas, are eligible for a rebate when they purchase and install a weather-based irrigation controller which has the potential to save 41 gallons per day per residence and reduce runoff and pollution by 49%. Once residents are enrolled in the rebate program, a detailed residential outdoor water survey is conducted to inspect the irrigation system, distribution uniformity, and irrigated area. Water savings from the program can be estimated from information obtained from the water surveys pre- and post-installation of the Smart Timer. To date, 650 rebates have been given out to residential customers and 297 rebates to commercial customers within the City's service area which translate to a water savings of approximately 605 acre-feet, collectively. As part of the MWDOC Grant for the smart timers, a site audit and inspection is required and provided by contract through MWDOC.

Rotating Nozzle Rebate Program – This rebate program started in 2007 and is offered to both residential and commercial customers. Through this program, site owners will purchase and install rotary nozzles in existing irrigation systems. Following the submittal of a rebate application, water bill, and original purchase receipt, MWDOC will direct a third party installation verification contractor to perform installation verifications on up to 100% of the sites that installed devices. To date, within the City's service area, 1,313 rotating nozzles have been installed at residential properties and another 1,324 at commercial sites, including HOA common areas, representing a combined water savings of approximately 24 acre-feet since the beginning of the program.

Synthetic Turf Rebate Program – Through this program, residential and commercial customers of participating retail water agencies are eligible to receive rebate money for qualifying synthetic turf projects. To date 23,092 sq. ft. of turf grass have been replaced by synthetic turf on residential properties and another 1,740 sq. ft. on commercial properties translating to a combined savings of approximately 11 acre-feet since the beginning of the program.

South County SmartScape: Landscape Improvement Incentive Program - MWDOC obtained grant funding from the State Water Resources Control Board and the County of Orange to implement this program. The purpose of the program is to retrofit existing high water-using landscapes with 'fixes' that will reduce the site's outdoor water consumption in single-family homes and small commercial properties. This program is only offered to retail water agencies in the South Orange County Integrated Regional Watershed Management Plan (SOCIRWMP) area which includes the City of San Clemente. Each site, within each of the program's eligible areas, will receive a menu-option of retrofit improvements, labeled as "A," "AB," or "ABC," indicating which specific set of improvements may be implemented. The three different retrofit improvement designations are summarized in Table 4-2:

Table 4-2: Retrofit Improvement Designations

Retrofit Type	Improvement Description
A	Replacement of an existing conventional "dumb" irrigation timer with a weather-based "smart timer" irrigation controller. REQUIRED STEP (limit of 1 per site)
B	Replacement with a weather-based controller ***and*** implementation of specific irrigation distribution system improvements (may include both front and back yards), such as rotating nozzles, drip irrigation, and sprayhead adjustments.
C	Replacement with a weather-based controller, ***and*** implementation of irrigation distribution system improvements, ***and*** replacement of high water using plants, specifically turf grass with a choice of certain water-efficient landscape improvements from a Program Plant List of California Friendly® and native species (plant replacement retrofits in front yards only).

All sites that choose to participate in this program must receive Retrofit Type A. Depending on the outcome of a pre-installation landscape audit performed by a third party contractor employed by MWDOC, sites may become eligible for Retrofit Types A and B, and/or Types A, B, and C. Participating sites may not receive Type B or C without having a smart timer (Type A) installed.

The Reserve HOA Outdoor Sustainability Program – The City, in partnership with MWDOC, obtained grant funding from the State Water Resources Control Board and the County of Orange to implement this program. The purpose of this program was to identify how holistic irrigation and landscape improvements could reduce water use and runoff in a controlled pilot study. The Reserve HOA in San Clemente was selected because the development contained two separated stormdrain systems which allowed for a control (180 homes) and retrofit group (239 homes).

The retrofit homes were eligible to receive the same irrigation and landscape improvements as detailed in the South County SmartScape program above. In total, 72 of the eligible 239 homes (30% participation rate, which was considered a success) in the retrofit group enrolled in the program and received the improvements.

As part of this study, a rigorous statistical analysis is underway to determine the water savings and water runoff reduction achieved as a result of the irrigation and landscape improvements. The statistical analysis is expected to be completed in the summer of 2011. The South County SmartScape Program is modeled after this pilot study.

California Friendly Landscape Training (Residential) - The California Friendly Landscape Training provides education to residential homeowners and professional landscape contractors on a variety of landscape water efficiency practices they can employ. These classes are hosted by MWDOC and/or the retail agencies to encourage participation across the county. The residential training program consists of either a half-day Mini Class or individual, topic-specific, four-hour classes.

DMM 1 Summary - At this time, the City does not have a method developed to evaluate the water savings attributable to the on-site home surveys, door hangers, and high use letters reported in this DMM. The City has, however, developed a method to evaluate the water savings that the Smart Timer and rotating nozzle retrofits offer. Once residents are enrolled in these rebate programs, a detailed residential outdoor water survey is conducted to inspect the irrigation system, distribution uniformity, and irrigated area.

4.2.2. DMM 2: Residential Plumbing Retrofit

The City participated in MWDOC's regional showerhead distribution program which began in 1991. Through this program a total of 2,492 low flow showerheads were installed in the City between 1992 and 2001, which resulted in cumulative water savings of 110 AF. As a benchmark, the numbers of pre-1992 single-family and multi-family accounts were 9,294 and 3,179, respectively.

To determine whether the 75% saturation requirement was achieved within Orange County, a saturation study was conducted by MWDOC and Metropolitan and completed in 2001. Data was obtained through telephone surveys and on-site inspections. Using the saturation findings of the study, MWDOC estimates that today low flow showerhead saturation is at nearly 100% for single-family homes and at 94% for multi-family homes. Despite the saturation of low-flow showerheads and aerators, the City will still provide residents and businesses with these devices if requested.

The City also participated in MWDOC's regional ultra low flow toilet (ULFT) rebate program which ended in 2009. A total of 3,076 ULFTs were distributed under this program to single-family and multi-family homes representing a cumulative water savings of 1,110 acre-feet. The ULFT program has been replaced by the high efficiency toilets (HETs) rebate program. HETs are toilets which use 1.28 gallons per flush or less. The ULFT and HET rebate programs are discussed in more detail under Section 4.2.14.

4.2.3. DMM 3: System Water Audits, Leak Detection and Repair

The City has conducted water audits and leak detection repair since 1989. The City had permanently incorporated the system water audit, leak detection, and meter calibration programs into its utility operations. The City manages a proactive leak detection and repair program. Approximately 40 miles or 19% of the City's 206 mile distribution system is leak detected quarterly. Leak detection results are maintained in a maintenance

management data base program. Any detected leaks are quickly investigated in order to make appropriate repairs. Non-revenue water is approximately 3% of the total water supply of the City's system, as determined by the City's methodology for determining distribution system water loss.

The City has not developed a formal methodology to estimate the water savings attributable to this DMM. There are, however, real water savings as a result of the proactive pre-screening leak detections and repair program which maintains an acceptable non-revenue water of 3%.

4.2.4. DMM 4: Metering with Commodity Rates

The City is fully metered for all customer sectors, including single-family, multi-family, CII, and large landscape. All utility water accounts are metered and billed monthly based on commodity rates. Meters are required for all new connections and new CII developments are required to have dedicated irrigation meters in order to separately measure and bill indoor and outdoor water usage. All new multi-family residential developments are required to individually meter each dwelling unit rather than utilize a master-meter which services the entire building. This policy leads to more efficient water use as individuals water users receive a bill for the specific amount of water they use.

The utility billing rate structure contains a fixed rate and a commodity charge based on the volume of water used. The City's commodity charge has been setup as a conservation-based tiered rate which was overhauled in 2008 and is discussed in section 4.2.11. The City's utility water bill provides important messaging regarding conservation such as displaying the customer's usage for that month in a bar chart comparing it to the previous 12 months of usage. A sample of the city's water utility bill is provided in Appendix D.

There is no formal evaluation to determine the efficacy of this DMM. However, as part of the City's WRP expansion, more than one hundred dedicated irrigation meters now using potable water will convert to using recycled water.

4.2.5. DMM 5: Large Landscape Conservation Programs and Incentives

Irrigation customers are targeted for water conservation due to the large landscaped areas under their control. In order to implement this DMM, the City actively provides customer support, education and assistance; encourages and facilitates dedicated irrigation accounts to operate within an ET-based water use budget; targets CII mixed-use accounts with large landscapes to receive educational materials and rebates for water efficient technologies; and provides new accounts with information covering water efficient landscape designs and irrigation system design.

The City collaborates with its wholesaler, MWDOC on several large landscape water use efficiency programs. Many of MWDOC's landscape water use efficiency programs target both residential and commercial customers as described under DMM 1. MWDOC also offers programs in Orange County which specifically assist large landscape customers as follows:

Landscape Performance Certification Program (LPCP) – This is a MWDOC-administered program which started in 2004. The LPCP program is a free water management training program sponsored by MWDOC and Metropolitan and offered to CII customers with dedicated irrigation meters. The program also helps create site specific water budgets and track monthly water use for each participating site. As of FY 2010-11, nearly 33% of the City's dedicated irrigation accounts, a total of 247 landscape meters within the City's service area have participated in this program. To date, the overall water savings is approximately 1,030 acre-feet. As a benchmark, the City currently has 880 CCI accounts and 765 dedicated irrigation accounts. Of the 765 dedicated irrigation accounts, 247 are enrolled in the LPCP program.

California Friendly Landscape Training (Professional) – The California Friendly Landscape Training provides education to residential homeowners and professional landscape contractors on a variety of landscape water efficiency practices they can employ. These classes are hosted by MWDOC and/or the member agencies to encourage participation across the county. The Professional Training Program course consists of four consecutive classes in landscape water management, each building upon principles presented in the preceding class. Each participant receives a bound handbook containing educational materials for each class. These classes are offered throughout the year and taught in both English and Spanish languages. This program is stemmed from Metropolitan's Protector del Agua Program where the City has partnered with the Casa Romantica Cultural Center and Gardens in the City since 2005 to hold classes at their facility. The Casa Romantica was built in 1928 and is located on an ocean bluff overlooking the San Clemente pier. The Casa Romantica has a native and California friendly plant garden onsite that is showcased in each of the residential classes. The unique and special venue has considerably increased class interest and attendance. Classes are projected to continue at a rate of 3 per year with a target number of participants of 105 annually.

Tri-Cities H2O for HOAs Water Forum – This innovative program is a collaborative effort between the Cities of San Clemente, San Juan Capistrano, and Dana Point in addition to the South Coast Water District to educate HOA board members, property managers, and landscape contractors about proper irrigation and landscape management. This is an annual event that began in 2007 and attracts over 100 participants who directly manage the large landscapes in our communities. Participants receive the latest information on water efficient technologies and rebates, local water conservation and

stormwater prevention ordinances, and efficient landscape and irrigation design. Surveys indicate that the participants, specifically the HOA board members, come away from this event more educated about how to sustainably manage their landscapes and empowered to invest more resources, such as installing weather-based irrigation controllers, into conserving water.

In addition to the programs listed above, the City takes advantage of regional and local efforts which target and market to large landscape properties including bill inserts, direct marketing efforts, ads in various publications, educational seminars/symposiums for property owners, and presentations at Homeowners Associations (HOAs) board meetings. Aside from the Landscape Performance Certification Program, the City does not have a methodology to determine water savings garnered from the landscaping classes and HOA workshops.

4.2.6. DMM 6: High-Efficiency Washing Machine Rebate Programs

The City participates in the SoCal Water Smart residential rebate program offered by Metropolitan. This program offers financial incentives to single-family and multi-family residential customers through the form of a rebate for various landscape products as described under DMM 1 in Section 4.2.1 and clothes washers as described below.

Orange County residents are eligible to receive an $85 rebate when they purchase a new High Efficiency Clothes Washer (HECW). This program began in 2001 and is sponsored by MWDOC, Metropolitan, and local retail water agencies. Rebates are available on a first-come, first-served basis, while funds last. Participants must be willing to allow an inspection of the installed machine for verification of program compliance. To qualify for a rebate, the HECW must have a water factor of 4.0 or less. An HECW with a water factor of 4 will use approximately 15 gallons of water per load compared to a conventional top-loading clothes washer which can use 40 gallons or more per load. Depending on use, these machines can save 10,000 gallons of water per year. Participants are encouraged to contact their local gas and/or electric utility as additional rebates may be available. As of FY 2010-11, the City has given out 1,593 high-efficiency washing machine rebates to its customers. This equates to a water savings of approximately 189 acre-feet.

4.2.7. DMM 7: Public Information Programs

The City communicates information about water supply, water quality and the importance of water use efficiency through its public information programs. Unless otherwise listed, all programs have been in effect since 2001 and are planned to continue through 2015 and beyond. There is no method to evaluate the water savings attributable to this DMM, however, the City will continue to administer this DMM for its ability to educate and interact with customers.

City of San Clemente's Local Public Information Programs

The 2000 UWMP deferred to MWDOC to establish contact with the public using MWDOC's Public Affairs Workgroup. Since then, the City has developed additional programs to provide public information, including: information provided on the water bill, high use letters, new customer letters, door hangers, bill inserts, brochures, classes, community special events, speakers bureau, website, and social media, environmental sustainability grants, and networking with public advocacy and interest groups. A description of each program is provided below.

Water Bill - In order to assist customers in understanding their water use, bills visually display customers' water usage in a bar graph which also shows the prior 12 months consumption in order to better educate the customer on their water usage and trends. The water bill also breaks down the 3-tier commodity charge to show how many units of water a customer used in each tier and the corresponding tier charge. This provides a dynamic message and incentive for customers to judiciously use water. A sample water bill is attached in Appendix D.

High Use Letters - During monthly water meter reading, a high use notification letter is sent to customers whose water use is significantly greater than the previous month. The letter is sent a week before a customer would receive a high bill, allowing for quick resolution of leaks and provides suggestions for checking for toilet leaks and irrigation schedule changes. The letter also encourages residents to call the Utilities Division and set up a site survey, thereby funneling high water users into receiving assistance in actively conserving water. A conservation flyer is also inserted which contains information about rebate programs, irrigation scheduling, and the City's water conservation water waste restrictions. A sample high use letter is attached in Appendix D.

New Customer Letters - A welcome letter is sent each month to all new utility customers. The letter provides contact telephone numbers and email addresses for various utility divisions, including water quality, water conservation and water treatment. Included as an insert in this letter is a conservation flyer which educates the new homeowner on the many rebates available for water conservation devices and services the conservation program can perform, such as site surveys. This program started in 2003. A sample new customer letter is attached in Appendix D.

Door Hangers - The City developed a door hanger to notify residents when excess irrigation runoff leaves their property. Information about adjusting sprinklers, urban runoff and water quality is explained on the back of the hanger. Utilities staff have the door hangers in their trucks and distribute them when runoff is observed. For sites that receive a door hanger, a follow-up letter is sent encouraging property owners or managers to schedule a site survey. A sample door hanger is attached in Appendix D.

Bill Inserts, Newsletters and Brochures - Bill inserts, newspaper articles, brochures, and E-Newsletter are used to communicate information on a variety of topics including irrigation, native plants, high efficiency clothes washing machines and new programs and rebates.

Classes - The City regularly offers California Friendly Landscape water management classes for homeowners and professional landscapers as described under DMM 5 above. The City has also provided financial assistance in the form of grants to the Casa Romantica Cultural Center and Gardens to help them setup their own classes which are oriented to informing the public and their members about water conservation design in landscapes.

Community Special Events - The City Utilities Division routinely participates in community events to teach residents about water supply, water conservation, wastewater, storm drains and the sewer system. At each event the City hosts a booth with hands on displays and educational games for children. The City provides promotional giveaways and educational literature. The annual community events include the San Clemente Ocean Festival, San Clemente Earth Day Fair, San Clemente Fiesta, Character Counts Fair, the San Clemente Garden Club's GardenFest, and other miscellaneous events as invited.

Demonstration Garden - In 2003, the City was awarded as a grant recipient of Metropolitan's City Makeover Program which was used to transform the 2.4-acre site of Casa Romantica Cultural Center and Gardens, the historic home of San Clemente founder Ole Hanson. The conversion includes interpretive exhibits, California Friendly gardens, and a garden workshop suitable for classes on horticulture and gardening. The City's water conservation program has also provided grants to the San Clemente Garden Club to assist them with installing rain barrels and native gardens in local elementary schools.

Speakers Bureau - City staff members provide interested community groups with customized presentations and handouts about current water programs and issues.

Web Site - The City's web page (www.San-Clemente.org/WaterSmartSC) contains water conservation related information, including conservation tips, current rebate programs and links to additional resources. The City's conservation website averages approximately 30 distinct daily web 'hits' making it a visible and sought-after resource in our community.

Social Media – In 2009, the City's water conservation program began to utilize Twitter to provide updates and conservation tips in a timely manner. Additionally, because the nature of Twitter users is to share information, the City's conservation messages and programs receive far greater attention as followers re-direct the messages to others who

otherwise may have not received the original message or been exposed to the City's programs.

Coordinate with Other Government Agencies **-** The City participates in MWDOC's regional Water Use Efficiency and Public Affairs Workgroups. These meeting facilitate increased communication and shared resources with other Orange County water agencies. As discussed in section 4.2.5, the Tri-Cities group collaborates on many public outreach and education projects which target select groups. For example, the H2O for HOAs Water Forum targets HOA board members, property managers, and local landscape contractors while the H2O for Hospitality Water Forum targets owners and managers of hotels and restaurants to go over conservation-related BMPs for their related industry, trade, or responsibility.

MWDOC's Regional Public Information Programs

MWDOC currently offers a wide range of public information programs in Orange County in collaboration with its member agencies including the City of San Clemente. Current regional public information programs within the MWDOC's service area are summarized below.

Water Facility Inspection Trip Program **-** The inspection trip program is sponsored by MWDOC and Metropolitan. Each year, Orange County elected officials, residents, business owners, and community leaders are invited to attend educational inspection trips to tour key water facilities throughout the state of California. The goal is to educate members of our community about planning, procurement and management of southern California's water supply and the issues surrounding delivery and management of this vital resource.

O.C. Water Hero Program - The goal of this program is to engage children in water use efficiency activities while facilitating discussion with friends and family members about how to save water. Any Orange County child can become a Water Hero by pledging to save 20 gallons of water per day. In exchange for their pledge, they receive a free Water Hero kit, which includes a variety of fun, water-saving items like a 5-minute shower timer and "fix-it" ticket pad for busting water wasters. To become a Superhero, a student must get their parents to also pledge to save 20 gallons of water per day. To date, more than 13,000 children in Orange County have become Water Heroes and more than 4,000 have become Superheroes. In San Clemente, 400 children have signed up to be Water Heroes and another 138 kids have become Super Heroes by enrolling their parents to become Water Heroes themselves.

eCurrents **-** This monthly electronic newsletter is designed to keep MWDOC's 28 member agencies, residents and businesses, stakeholder groups, opinion leaders, and others apprised of MWDOC news, programs, events, and activities. The publication also

serves to keep readers informed about regional, state, and federal issues affecting water supply, water management, water quality, and water policy and regulation.

Water Advisory Committee of Orange County (WACO) - WACO was formed in 1983 to facilitate the introduction, discussion, and debate of current and emerging water issues among Orange County policymakers and water professionals. The committee's membership has evolved to include elected officials and management staff from Orange County cities and water districts, engineers, attorneys, consultants, and other industry professionals. Monthly meetings are open to the public and are typically held on the first Friday of each month at 7:30 a.m.

4.2.8. DMM 8: School Education Programs

The City and MWDOC have implemented this BMP aggressively. MWDOC's regional water education program began in 1973 and provides water education to Orange County students in grades kindergarten through high school. The program teaches students about the water cycle, the importance and value of water and water conservation. While it is not feasible for the City to evaluate the water savings of this DMM, the City will continue to consider this DMM as vital and necessary.

City of San Clemente's Local School Education Program

San Clemente Water Education Program – The San Clemente Utilities Division developed an effective water education program. The education program establishes early habits of water conservation with students, instills them with a desire to protect ocean water quality and provides them with an appreciation of the wastewater treatment process.

The Utilities Division developed distinct curriculum for two elementary school grade levels and high school and community college science classes. Presentations on Water Use and Conservation and Urban Runoff topics are provided to second grade students, and third grade classes. The in-class presentations are structured around the theme of community and through hands-on lessons students understand how their actions can make a difference. San Clemente High School Environmental Studies and Chemistry students participate in an annual June field trip to the Water Recycling Plant (WRP). The tour provides them with insight into operating requirements and regulations associated with water reclamation and water quality. Science classes from the local community college, Saddleback, also participate in annual tours for the WRP. A minimum of 350 students per year tour the WRP.

Utilities water education programs were recognized with public education awards in 2003 by the American Public Works Association and the California Water Environment

Association. Since 2000, over 8,000 students have participated in the City's educational programs.

MWDOC's Regional School Education Programs

Water Education School Program - One of the most successful and well-recognized water education curriculums in Southern California is MWDOC's Water Education School Program. For more than 30 years, School Program mascot "Ricki the Rambunctious Raindrop" has been educating students in grades K-5 about the water cycle, the importance and value of water, and the personal responsibility we all have as environmental stewards.

The School Program features assembly-style presentations that are grade-specific and performed on-site at the schools. The program curriculum is aligned with the science content standards established by the State of California. Since its inception in 1973, nearly three million Orange County students have been educated through the School Program.

In 2004, MWDOC formed an exciting partnership with Discovery Science Center that has allowed both organizations to reach more Orange County students each year and provide them with even greater educational experiences in the areas of water and science. Discovery Science Center currently serves as the School Program administrator, handling all of the program marketing, bookings, and program implementation. During the 2010-11 school year, more than 70,000 Orange County students will be educated through the program. For the City, specifically, approximately 9,930 students have been educated through this program since 2005.

Water Education Poster & Slogan Contest - Each year, MWDOC holds a Water Education Poster and Slogan Contest to increase water awareness. To participate, children in grades K-6 develop posters and slogans that reflect a water awareness message. The goal is to get children thinking about how they can use water wisely and to facilitate discussion about water between children and their friend, parents, and teachers. Each year, more than 1,500 poster and slogan entries are received through the contest.

During a special judging event, approximately 16 posters and 10 slogans are selected as the winners. All of the winners – and their parents, teachers, and principals – are invited to attend a special awards ceremony with Ricki Raindrop at Discovery Science Center. At the awards ceremony, the winners are presented with their framed artwork as well as a custom t-shirt featuring their poster or slogan, a trophy, a certificate, and other fun water-saving prizes.

Orange County Children's Water Education Festival **-** The largest water education festival of its kind is the annual Children's Water Education Festival (Festival). The Festival is presented by OCWD, the National Water Research Institute, Disneyland Resort, and MWDOC. Each year, more than 5,000 students participate in the Festival over the course of this two-day event. The Festival is currently held at the Richard Nixon Library and Birthplace in Yorba Linda, California.

The Festival presents a unique opportunity to educate students in grades four through six about local water issues and help them understand how they can protect our water resources and the environment. Students attend the Festival with their teacher and classmates, visiting a variety of booths focused on different water-related topics throughout the day. Participating organizations (presenters) engage the students through interactive educational presentations that are aligned with the science content standards established by the State of California.

4.2.9. DMM 9: Conservation Programs for Commercial, Industrial and Institutional Accounts

The City currently provides services to 880 CII accounts. The City offers financial incentives under MWDOC sponsored Save Water Save A Buck Rebate Program which offers rebates for various water efficient devices to CII customers. The City also participates in MWDOC's Water Smart Hotel Program as described below.

Save Water Save a Buck – This program began in 2002 and offers rebates to assist CII customers in replacing high-flow plumbing fixtures with low-flow fixtures. Facilities where low-flow devices are installed must be located in Orange County. Rebates are available only on those devices listed in Table 4-3 below and must replace higher water use devices. Installation of devices is the responsibility of each participant. Participants may purchase and install as many of the water saving devices as is applicable to their site.

Table 4-3: Retrofit Devices and Rebate Amounts Available Under Save Water Save a Buck Program

Retrofit Device	Rebate Amount
High Efficiency Toilet	$50
Ultra-Low-Water or Zero Water Urinal	$200
Connectionless Food Steamers	$485 per compartment
Air-Cooled Ice Machines (Tier III)	$300
Cooling Tower Conductivity Controller	$625
pH / Conductivity Controller	$1,750
Dry Vacuum Pumps	$125 per HP
Water Pressurized Broom	$110

As of FY 2010/11, the City's CII customers have installed a total 412 water-saving fixtures representing a water savings of approximately 193 acre-feet. The City will continue to educate CII customers to meet the DMM requirements.

Water Smart Hotel Program – In 2008 and 2009, MWDOC received grants from DWR and the US Bureau of Reclamation (USBR) to conduct the Water Smart Hotel Program, a program designed to provide Orange County hotels and motels with commercial and landscape water saving surveys, incentives for retrofits and customer follow-up and support. The goal of the program is to implement water use efficiency changes in Orange County hotels to achieve an anticipated water savings of 7,078 acre feet over 10 years. Thus far, San Clemente's hotels have installed a total of 71 HETs and 1 HECW.

4.2.10. DMM 10: Wholesale Agency Programs

This BMP pertains to wholesale agency programs which are not applicable to the City, a retail agency. The City is a member agency of MWDOC, the region's wholesaler that is responsible for the implementation and reporting requirements of this DMM.

4.2.11. DMM 11: Conservation Pricing

The City has implemented a conservation based rate structure which creates a financial incentive to conserve water since 1994. The water rate structure contains a fixed service charge and promotes water conservation via an increasing tiered block commodity rate structure. The tiered rate structure is also seasonal, with more water allocated per tier during summer months than winter months. All customer classifications use tiered rates

except for the CII classification, which uses a flat commodity charge of $2.51 per hundred cubic feet of water (HCF) consumed.

The water structure includes three rate tiers, for single- and multi-family residential accounts as well as dedicated irrigation accounts. The 3 tier rates escalate as follows: $1.89, $2.86 and $6.59 per hundred cubic feet of water (HCF) consumed, with different allocations provide for the winter and summer season. The first tier is intended to reward outstanding conservation efforts by customers. However, the average household will see some usage in the second tier. The structure is also seasonal, with more water allocated in tiers 1 and 2 during summer months than winter. The allocation in each price tier for residential single family homes is based on lot size while the allocation for irrigation meter customers is based on the square footage of area irrigated. The City's current water rates and tier allocation as shown in Table 4-4.

Table 4-4: City of San Clemente Water Rates and Tier Allocation

Customer Classification	Tier	Water Rates	Allocation (in HCF)	
		per HCF	Winter	Summer
Single Family Dwellings				
Lot Size 0-7,000 sq.ft.	1	$1.89	0-9	0-13
	2	$2.83	10-15	14-21
	3	$6.59	16+	22+
Lot Size >7,000 sq.ft.	1	$1.89	0-11	0-17
	2	$2.83	12-17	18-31
	3	$6.59	18+	32+
Multi-Family Dwellings				
Master-Metered	1	$1.89	0-6	0-6
(per dwelling unit)	2	$2.83	7-9	7-10
	3	$6.59	10+	11+
Individual Metered	1	$1.89	0-6	0-6
	2	$2.83	7-9	7-11
	3	$6.59	10+	12+
Commercial, Industrial, Institutional (CII)	-	$2.51	Uniform Rate	
Customer Classification	**Tier**	**Water Rates**	**Allocation (inches /week)**	
		per HCF	**Winter**	**Summer**
Irrigation				
Based on irrigation sq.ft.	1	$1.89	0-0.2	0-0.4
	2	$2.83	0.2-0.5	0.4-1.0
	3	$6.59	0.5+	1.0+

Single family residential customers pay a commodity charge for sewer based on 90% of their water consumption in the wettest winter month. A maximum charge of 20 sewer units per month will be charged to single family dwellings. This charge remains in place for one full calendar year and will be adjusted each year. All remaining customers pay sewerage charges based on 90% of water consumption during the billing period.

The City has not conducted an evaluation of the water savings attributable to this DMM, however, the City will continue to make customers aware of the rate structure and use it as a tool to affect water conservation.

4.2.12. DMM 12: Water Conservation Coordinator

One full time position has been dedicated to Water Conservation from 1990 through 1997 and from 2001 through present day. The Water Conservation Coordinator position is planned to be staffed beyond 2015. The responsibilities of the water conservation coordinator are to provide coordination and oversight of conservation programs; communicate and promote water conservation programs and issues to senior management and the public; interact with and participate with water conservation coordinators and staff of other agencies; and manage the City's UWMP. There is close collaboration between the water conservation coordinator and MWDOC to implement regional and local BMPs/DMMs.

4.2.13. DMM 13: Water Waste Prohibition

The City Council adopted Ordinance 1487 in May 2009 and amended Water Conservation Chapter 13.12 of the City of San Clemente Municipal Code to establish standards and procedures for water conservation and enable implementation of water shortage contingency measures. Under the new ordinance, the City added to those water waste restrictions listed in the CUWCC's BMP 13 in order to strengthen the City's Water Conservation Ordinance Chapter 13.12. Specifically, the City's amendments to the Water Conservation Chapter 13.12 include prohibitions to gutter flooding, single pass cooling systems in new connections, non-recirculating systems in all new conveyer car wash and commercial laundry systems, and non-recycling decorative water fountains. The City also established provisions which encourage and facilitate the use of weather-based irrigation systems to conserve water and reduce runoff. These amendments are vital and necessary for the City to effectively establish a water conservation program. Moreover, MWDOC effectively lobbies on behalf of the City and other member agencies to support efforts to develop state laws regarding the promotion of and use of more efficient demand-initiated regenerating water softeners.

The City's new Water Conservation Ordinance established year-round water waste restrictions which are discussed in greater detail in Section 5 and can be summarized as falling into the following categories:

- Repair of Plumbing, Sprinkler, and Irrigation System
- Watering/Irrigation
- City Medians and Parks
- Washing of Vehicles
- Commercial Car Washes
- Washing of Equipment and Machinery
- Cleaning of Structures
- Cleaning of Surfaces
- Swimming Pools and Spas
- Fountains, Decorative Basins, Ponds, Waterways
- Cooling Systems
- Commercial Laundry Facilities, Laundromats, and Common Area Laundry Rooms
- Commercial Lodging Establishments
- Visitor-serving Facilities
- Food and Beverage Service Facilities
- Public and Quasi-public Entities
- Construction
- Use of Hydrants
- Water Spillage
- Indiscriminate Use

The City has not conducted an evaluation of the water savings attributable to this DMM.

4.2.14. DMM 14: Residential Ultra-Low-Flush Toilet Replacement Programs

Over the past 19 years, MWDOC has continuously implemented a regional ULFT Rebate and/or Distribution Program targeting single- and multi-family homes in Orange County. Since the end of distribution program in 2004, MWDOC's program has focused solely on providing rebate incentives for retrofitting non-efficient devices with either ULFTs or HETs. HETs are defined as using 1.28 gallons per flush or less and use 20% less water than ULFTs which flush 1.6 gallons of water. The ULFT portion of this program concluded in June 2009, and over 360,000 ULFTs were replaced in single family and multi-family homes, throughout Orange County, with an overall program to date savings of approximately 138,457 acre feet of water. The HET rebate program, which concluded in 2010, has incentivized over 26,000 devices in Orange County, with an overall program to date savings of approximately 3,419 acre-feet.

The City has participated in this program from the beginning. The City supported the ULFT programs by distributing marketing materials and hosting toilet exchange events at City facilities. To date 3,076 ULFTs and 314 HETs have been installed representing a combined water savings of approximately 1,150 acre-feet within the City's service area. As of 2010, rebates are no longer being provided for HETs because the CalGREEN

plumbing codes now require HETs to be installed in new development and HETs will soon become the only model of toilet available at the retail level.

5. Water Supplies Contingency Plan

5.1. Overview

Recent water supply challenges throughout the American Southwest and the State of California have resulted in the development of a number of policy actions that water agencies would implement in the event of a water shortage. In southern California, the development of such policies has occurred at both the wholesale and retail level. This section describes how new and existing policies that Metropolitan, MWDOC and the City have in place to respond to water supply shortages, including a catastrophic interruption and up to a 50 percent reduction in water supply.

5.2. Shortage Actions

Metropolitan

As an importer of water from multiple sources, including both the Colorado River and Sierra Nevada, a number of water supply challenges have impacted the reliability of Metropolitan's imported supplies. In response to these challenges, Metropolitan has implemented existing policies as well as developed new ones.

The first action that Metropolitan implements in the event of a water shortage is the suspension and/or reduction of its interruptible supplies, which are supplies sold at a discount in return for the buyers agreeing to be the first to be cutback in the event of a shortage. Metropolitan currently has two interruptible programs for agricultural users and groundwater replenishment, under which supplies were either suspended or reduced in 2007.

In addition, in preparation for the possibility of being unable to the meet "firm demands" (non-interruptible supplies) of its member agencies, in February 2008, the Metropolitan's Board of Directors (Board) adopted the Water Supply Allocation Plan (WSAP), which was subsequently updated in June 2009.

Metropolitan's plan includes the specific formula for calculating member agency supply allocations and the key implementation elements needed for administering an allocation. Metropolitan's WSAP is the foundation for the urban water shortage contingency analysis required under Water Code Section 10632 and is part of Metropolitan's 2010 RUWMP.

Metropolitan's WSAP was developed in consideration of the principles and guidelines described in Metropolitan's 1999 Water Surplus and Drought Management Plan

(WSDM), with the objective of creating an equitable needs-based allocation. The plan's formula seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level for shortages of Metropolitan supplies of up to 50 percent. The formula takes into account: impact on retail customers and the economy; growth and population; changes in supply conditions; investments in local resources; demand hardening aspects of non-potable recycled water use; implementation of conservation savings program; participation in Metropolitan's interruptible programs; and investments in facilities.

The formula is calculated in three steps: historical base period calculations, allocation year calculations, and supply allocation calculations. The first two steps involve standard computations, while the third section contains specific methodology developed for the WSAP.

Step 1: Base Period Calculations – The first step in calculating a water supply allocation is to estimate water supply and demand using a historical base period with established water supply and delivery data. The base period for each of the different categories of demand and supply is calculated using data from the three most recent non-shortage years, 2004-2006.

Step 2: Allocation Year Calculations – The next step in calculating the water supply allocation is estimating water needs in the allocation year. This is done by adjusting the base period estimates of retail demand for population or economic growth and changes in local supplies.

Step 3: Supply Allocation Calculations – The final step is calculating the water supply allocation for each member agency based on the allocation year water needs identified in Step 2. Each element and its application in the allocation formula are discussed in detail in Metropolitan's WSAP.

In order to implement the WSAP, the Metropolitan Board makes a determination on the level of the regional shortage, based on specific criteria, in April each year. If it is determined allocations are necessary, they go into effect in July for that year and remain for a 12-month period, although the schedule is at the discretion of Metropolitan's Board. Metropolitan's Board implemented the WSAP at a Level 2 (10%) reduction for FY 2009-2010 and FY 2010-2011, which resulted in a 12% reduction in the City's water supplies.

Metropolitan's 2010 RUWMP forecasts that Metropolitan will be able to meet projected firm demands throughout the forecast period from 2015 to 2035. However, these projections do not mean that Metropolitan would not implement its WSAP during this period.

MWDOC

To prepare for the potential allocation of imported water supplies from Metropolitan, MWDOC worked collaboratively with its 28 member agencies to develop its own Water Supply Allocation Plan (MWDOC WSAP), adopted January 2009, to allocate imported water supplies at the retail level. The MWDOC WSAP lays out the essential components of how MWDOC will determine and implement each member agency's allocation during a time of shortage.

The MWDOC WSAP uses a similar method and approach, when reasonable, as that of the Metropolitan's WSAP. However, MWDOC's plan remains flexible to use an alternative approach when Metropolitan's method produces a significant unintended result for the member agencies. The MWDOC WSAP model follows five (5) basic steps to determine a retail agency's imported supply allocation.

Step 1: Determine Baseline Information – The first step in calculating a water supply allocation is to estimate water supply and demand using a historical base period with established water supply and delivery data. The base period for each of the different categories of demand and supply is calculated using data from the last three non-shortage years – calendar years, 2004, 2005, and 2006.

Step 2: Establish Allocation Year Information – In this step, the model adjusts for each member agency's water need in the allocation year. This is done by adjusting the base period estimates for increased retail water demand based on growth and changes in local supplies.

Step 3: Calculate Initial Minimum Allocation Based on Metropolitan's Declared Shortage Level – This step sets the initial water supply allocation for each member agency. After a regional shortage level is established, MWDOC will calculate the initial allocation as a percentage of adjusted Base Period Imported water needs within the model for each member agency.

Step 4: Apply Allocation Adjustments and Credits in the Areas of Retail Impacts, Conservation, and the Interim Agriculture Water Program – In this step, the model assigns additional water to address disparate impacts at the retail level caused by an across-the-board cut of imported supplies. It also applies a conservation credit given to those agencies that have achieved additional water savings at the retail level as a result of successful implementation of water conservation devices, programs and rate structures.

Step 5: Sum Total Allocations and Determine Retail Reliability – This is the final step in calculating a retail agency's total allocation for imported supplies. The model sums an agency's total imported allocation with all of the adjustments and credits and then calculates each agency's retail reliability compared to its Allocation Year Retail Demand.

The MWDOC WSAP includes additional measures for plan implementation, including the following:

- Appeal Process – An appeals process to provide member agencies the opportunity to request a change to their allocation based on new or corrected information. MWDOC anticipates that under most circumstances, a member agency's appeal will be the basis for an appeal to Metropolitan by MWDOC.
- Melded Penalty Rate Structure – At the end of the allocation year, MWDOC would only charge a penalty to each member agency that exceeded their allocation if MWDOC exceeds its total allocation and is required to pay a penalty to Metropolitan. Metropolitan enforces allocations to member agencies through a tiered penalty rate structure: penalty rates to a member agency that exceeds its total annual allocation at the end of the twelve-month allocation period, according to a specified rate structure. MWDOC's penalty would be assessed according to the member agency's prorated share (acre-feet over usage) of MWDOC penalty amount with Metropolitan. Penalty funds collected by Metropolitan will be invested in water conservation and local resource development.
- Tracking and Reporting Water Usage – MWDOC will provide each member agency with water use monthly reports that will compare each member agency's current cumulative retail usage to their allocation baseline. MWDOC will also provide quarterly reports on it cumulative retail usage versus its allocation baseline.
- Timeline and Option to Revisit the Plan – The allocation period will cover 12 consecutive months and the Regional Shortage Level will be set for the entire allocation period. MWDOC only anticipates calling for allocation when Metropolitan declares a shortage; and no later than 30 days from Metropolitan's declaration will MWDOC announce allocation to its member agencies.

Due to the complexity of calculating allocations and the potential for unforeseen circumstances that may occur during an allocation year, after one year of implementation, MWDOC staff and member agencies have the opportunity to make recommendations to the MWDOC Board that will improve the method, calculation, and approach of the MWDOC WSAP. MWDOC declared a shortage level 2 as a result of Metropolitan implementing a WSAP. This regional water supply allocation resulted in a 12% water supply cut to the City in FY 09-10 and FY 10-11.

City of San Clemente

The City Council adopted Water Conservation Ordinance No. 1487 on May 21, 2009, amending and restating the San Clemente Municipal Code, Chapter 13.12, which established a staged water conservation program that contains provisions for a staged water conservation program that will encourage reduced water consumption within the

City through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City. Along with permanent water conservation requirements, the City's Water Conservation Program consists of the following four stages found in Table 5-1 to respond to a reduction in potable water available to the City for distribution to its customers in addition to the year round restrictions in effect at all times.

Table 5-1: Water Supply Shortage Stages and Conditions – Rationing Stages

Stage No.	Water Supply Conditions	% Shortage
Level 1 – Water Watch	Possibility exists that the City will not be able to meet all of the demands of its customers.	0-10%
Level 2 – Water Alert	Possibility exists that the City will not be able to meet all of the demands of its customers.	11-20%
Level 3 – Water Warning	There is a critical differential between supply and demand and it is determined that demand cannot be reduced sufficiently through Level 1 and 2 measures to remain within the available supply.	21-40%
Level 4 – Water Emergency	The state or a regional supplier has required a significant reduction in water use, or when normal production and supply are curtailed or interrupted.	>40%

5.3. Three-Year Minimum Water Supply

As a matter of practice, Metropolitan does not provide annual estimates of the minimum supplies available to its member agencies. As such, Metropolitan member agencies must develop their own estimates for the purposes of meeting the requirements of the Act.

Section 135 of the Metropolitan Water District Act declares that a member agency has the right to invoke its "preferential right" to water, which grants each member agency a preferential right to purchase a percentage of Metropolitan's available supplies based on specified, cumulative financial contributions to Metropolitan. Each year, Metropolitan calculates and distributes each member agency's percentage of preferential rights. However, since Metropolitan's creation in 1927, no member agency has ever invoked these rights as a means of acquiring limited supplies from Metropolitan.

As an alternative to preferential rights, Metropolitan adopted the Water Shortage Allocation Plan (WSAP) in February 2008. Under the WSAP, member agencies are allowed to purchase a specified level of supplies without the imposition of penalty rates. The WSAP uses a combination of estimated total retail demands and historical local supply production within the member agency service area to estimate the firm demands on Metropolitan from each member agency in a given year. Based on a number of factors, including storage and supply conditions, Metropolitan then determines whether it has the ability to meet these firm demands or will need to allocate its limited supplies among its member agencies. Thus, implicit in Metropolitan's decision not to implement an allocation of its supplies is that at a minimum Metropolitan will be able to meet the firm demands identified for each of the member agencies.

In order to estimate the minimum available supplies from Metropolitan for the period 2011-2013, an analysis was performed to assess the likelihood that Metropolitan would re-implement mandatory water use restrictions in the event of a 1990-92 hydrologic conditions over this period. Specific water management actions during times of water shortage are governed by Metropolitan's Water Shortage and Drought Management Plan (WSDM Plan). Adopted by the Metropolitan Board in 1999, the WSDM Plan provides a general framework for potential storage actions during shortages, but recognizes that storage withdrawals are not isolated actions but part of a set of resource management actions along with water transfers and conservation. As such, there is no specific criterion for which water management actions are to be taken at specific levels of storage. The implementation of mandatory restrictions is solely at the discretion of the Metropolitan Board and there are no set criteria that require the Board to implement restrictions. Given these conditions, the analysis relies upon a review of recent water operations and transactions that Metropolitan has implemented during recent drought.

The first step in the analysis was a review of projected SWP allocations to Metropolitan, based on historical hydrologies. As with the recent drought, potential impacts to SWP supplies from further drought and the recently implemented biological opinions are anticipated to be the biggest challenges facing Metropolitan in the coming three years.

A review of projected SWP allocations from the DWR's State Water Project Delivery Reliability Report 2009 (2009 SWP Reliability Report) was made to estimate a range of conservative supply assumptions regarding the availability of SWP supplies. The 2009 SWP Reliability Report provides estimates of the current (2009) and future (2029) SWP delivery reliability and incorporates regulatory requirements for SWP and CVP operations in accordance with USFWS and NMFS biological opinions. Estimates of future reliability also reflect potential impacts of climate change and sea level rise.

The analysis assumes a maximum SWP allocation available to Metropolitan of 2,011,500 AF and a Metropolitan storage level of 1,700,000 AF at 2010 year-end. The analysis also

assumes a stable water supply from the Colorado River in the amount of 1,150,000 AF through 2015. Although the Colorado River watershed has also experienced drought in recent years, Metropolitan has implemented a number of supply programs that should ensure that supplies from this source are relatively steady for the next three years. Based on estimated "firm" demands on Metropolitan of 2.12 MAF, the annual surplus or deficit was calculated for each year of the three-year period.

A review of recent Metropolitan water management actions under shortage conditions was then undertaken to estimate the level of storage withdrawals and water transfers that Metropolitan may exercise under the 1990-92 hydrologic conditions were identified. For this analysis, it was assumed that, if Metropolitan storage levels were greater than 2 MAF at the beginning of any year, Metropolitan would be willing to take up to 600 TAF out of storage in that year. Where Metropolitan storage supplies were between 1.2 MAF and 2 MAF at the beginning of the year, it was assumed that Metropolitan would be willing to take up to 400 TAF in that year. At storage levels below 1.2 MAF, it was assumed that Metropolitan would take up to 200 TAF in a given year.

It was also assumed that Metropolitan would be willing to purchase up to 300 TAF of water transfer in any given year. For years where demands still exceeded supplies after accounting for storage withdrawals, transfer purchases were estimated and compared against the 300 TAF limit.

Table 5-2: Metropolitan Shortage Conditions

Study Year	Actual Year	SWP Allocation (%)	SWP (AF)	CRA (AF)	Total (AF)	Demand (AF)	Surplus/ Shortage (AF)	Storage at YE (AF)	Transfers (AF)
2011	1990	30%	603,450	1,108,000	1,711,450	2,124,000	(400,000)	1,300,000	(12,550)
2012	1991	27%	542,820	1,108,000	1,650,820	2,123,000	(200,000)	1,100,000	(272,180)
2013	1992	26%	522,990	1,108,000	1,630,990	2,123,000	(200,000)	900,000	(292,010)

Based on the analysis above, Metropolitan would be able to meet firm demands under the driest three-year hydrologic scenario using the recent water management actions described above without re-implementing mandatory water use restrictions on its member agencies. Given the assumed absence of mandatory restrictions, the estimated minimum imported water supplies available to MWDOC from Metropolitan is assumed to be equal to Metropolitan's estimate of demand for firm supplies for MWDOC, which Metropolitan uses when considering whether to impose mandatory restrictions. Thus, the estimate of the minimum imported supplies available to MWDOC is 261,577 AF[3].

MWDOC also has also adopted a shortage allocation plan and accompanying allocation model that estimates firm demands on MWDOC. Assuming MWDOC would not be

[3] Metropolitan 2010/11 Water Shortage Allocation Plan model (March 2011)

imposing mandatory restrictions if Metropolitan is not, the estimate of firms demands in MWDOC's latest allocation model has been used to estimate the minimum imported supplies available to each of MWDOC's customer agencies for 2011-13. Thus, the estimate of the minimum imported supplies available to the City is 10,176 AF[4].

As captured in its 2010 RUWMP, Metropolitan believes that the water supply and demand management actions it is undertaking will increase its reliability throughout the 25-year period addressed in its plan. Thus for purposes of this estimate, it is assumed that Metropolitan and MWDOC will be able to maintain the identified supply amounts throughout the three-year period.

Metropolitan projects reliability for full service demands through the year 2035. Additionally, local supplies are projected to be maintained at demand levels. Based on the MWDOC Water Supply Allocation Plan, the City is expected to fully meet demands for the next three years, assuming Metropolitan and MWDOC are not in shortage and zero allocations are imposed for Imported Supplies. The Three Year Estimated Minimum Water Supply is listed in Table 5-3.

Table 5-3: Three-Year Estimated Minimum Water Supply (AFY)

Source	Year 1	Year 2	Year 3
Local Supplies	700	700	700
Imported Supply	10,176	10,176	10,176
Total Supply Capability	*10,876*	*10,876*	*10,876*

5.4. Catastrophic Supply Interruption

Given the great distances that imported supplies travel to reach Orange County, the region is vulnerable to interruptions along hundreds of miles aqueducts, pipelines and other facilities associated with delivering the supplies to the region. Additionally, this water is distributed to customers through an intricate network of pipes and water mains that are susceptible to damage from earthquakes and other disasters.

Metropolitan

Metropolitan has comprehensive plans for stages of actions it would undertake to address a catastrophic interruption in water supplies through its WSDM and WSAP Plans. Metropolitan also developed an Emergency Storage Requirement to mitigate against potential interruption in water supplies resulting from catastrophic occurrences within the

[4] MWDOC Water Shortage Allocation model (August 2010)

southern California region, including seismic events along the San Andreas Fault. Under the requirement, the City must maintain 7 days worth of water supply in storage. In addition, Metropolitan is working with the State to implement a comprehensive improvement plan to address catastrophic occurrences that could occur outside of the Southern California region, such as a maximum probable seismic event in the Delta that would cause levee failure and disruption of SWP deliveries. For greater detail on Metropolitan's planned responses to catastrophic interruption, please refer to Metropolitan's RUWMP.

Water Emergency Response Organization of Orange County

In 1983, the Orange County water community identified a need to develop a plan on how agencies would respond effectively to disasters impacting the regional water distribution system. The collective efforts of these agencies resulted in the formation of the Water Emergency Response Organization of Orange County (WEROC) to coordinate emergency response on behalf of all Orange County water and wastewater agencies, develop an emergency plan to respond to disasters, and conduct disaster training exercises for the Orange County water community. WEROC was established with the creation of an indemnification agreement between its member agencies to protect each other against civil liabilities and to facilitate the exchange of resources. WEROC is unique in its ability to provide a single point of contact for representation of all water and wastewater utilities in Orange County during a disaster. This representation is to the county, state, and federal disaster coordination agencies. Within the Orange County Operational Area, WEROC is the recognized contact for emergency response for the water community.

City of San Clemente

In the event of an interruption of water supplies, the City will respond in accordance with the San Clemente Water Utility System Emergency Operation Manual and the regional Water Supply Emergency Response Plan. The City is a member agency of WEROC. The City participates in the following WEROC sponsored events:

- Regularly Scheduled Training Workshops
- Annual Water Supply Disaster Training Exercises
- Emergency Communication Network for Orange County Water Agencies
- Emergency Responses of all Orange County Water Agencies

The City's preparation actions for water supply interruptions include creating an emergency response team, putting employees and contractors on-call, coordinating with other agencies and communicating with the public, and activate the City's Emergency Operations Center (EOC). Table 5-4 details the City's planned response during specific catastrophic supply interruptions.

Table 5-4: Preparation Actions for Catastrophe

Possible Catastrophe	Preparation Actions
Regional Power Outage	Coordinate communication with San Diego Gas & Electric for restoration of services. Determine scope of power outage and spot mobile generators at pre-determined locations. Ensure all fixed emergency generators at pumping and plant facilities are operating properly. Consult with the California Department of Public Health (CDPH) for water quality concerns and public notices.
Earthquake	Activate the City's Emergency Operations Center (EOC).Utility staff will be dispatched to assess damage to entire water system. Damage to the system will be prioritized and staff assigned to fix damage to water system or shut down parts that cannot be immediately fixed. Facilitate mutual aid from outside agencies through WEROC, California Utilities Emergency Association, and the Orange County Operational Area. Water contamination is expected, and will require purification of all available sources. The importation of water from outside sources may be required. Long term, widespread strict rationing of water, may be considered.
Tsunami	Activate the Emergency Operations Center (EOC). If time allows, shut down operations in inundation zone, including but not limited to wells and pumps. Request California Department of Public Health (CDPH) support in evaluating water contamination via salt water intrusion and backflow of raw sewer water. Facilitate mutual aid from outside agencies through WEROC, California Utilities Emergency Association, and the Orange County Operational Area.
Malicious Act	The Civil Unrest/Terrorism Plan outlines a strategy to (1) prepare for, (2) respond to, and (3) recover from any Civil Unrest or Terrorism [Weapons of Mass Destruction (WMD)] type incident that affects the City. The Civil Unrest/Terrorism Plan: • Establishes official City policy for response to Civil Unrest/Terrorism related emergencies; • Identifies authorities and assigns responsibilities for planning and response activities; • Identifies the scope of potential Civil Unrest/Terrorism targets and/or hazards, which form the basis for planning;

Possible Catastrophe	Preparation Actions
	• Establishes the City Emergency Organization which will manage the emergency response; • Identifies other jurisdictions and organizations with which planning and emergency response activities will be coordinated; • Outlines preplanned response actions which will be taken by City emergency personnel, to mitigate the emergency's effects; and • Describes the resources available to support emergency response activities.
Water Contamination	The following procedure is in place in the event of water contamination: • Dispatch a Utilities operator to the contaminated or potentially contaminated facility. • Inspect the facility; identify whether water system contamination is known to have occurred or is suspected, when the contamination may have occurred, and whether the type of contaminant is known. Remove the source of contamination to prevent it from further impacting the water system, if possible. • If the potential for contamination is determined to represent a possible threat to water quality or public health: − Isolate facilities and portions of the distribution system likely to be affected by the actual or potential contamination, − Notify the California Department of Public Health (CDPH) of the actual or potential contamination event, and − Issue direction to Water Utilities in-house chemists to collect and analyze samples of the actual or potential contamination. • Take direction from CDPH relative to public notification orders. • Analyze collected samples to confirm the contamination event and characterize the nature of the contamination, and provide CDPH with applicable data. • Coordinate with CDPH on required procedures to purge contaminated water from the distribution system, to disinfect and clean the system, and to place any offline facilities back into service. • Determine if required procedures/actions can be

Possible Catastrophe	Preparation Actions
	performed by Utilities crews or whether outside contractor assistance is required. • Cooperate with law enforcement in providing information and evidence relative to the contamination event.
Hazardous Materials Spill/Release	The Hazardous Materials (HAZ MAT) Plan outlines a strategy to (1) prepare for, (2) respond to, and (3) recover from any Haz-Mat Incident that affects the City. The HAZ MAT Plan: • Establishes official City policy for response to Haz-Mat related emergencies. • Identifies authorities and assigns responsibilities for planning and response activities. • Identifies the scope of potential Haz-Mat hazards, which form the basis for planning. • Establishes the City Emergency Organization which will manage the emergency response. • Identifies other jurisdictions and organizations with which planning and emergency response activities will be coordinated. • Outlines pre-planned response actions which will be taken by City emergency personnel, to mitigate the emergency's effects. • Describes the resources available to support emergency response activities.
Storage Tank or Reservoir Failure	If time allows shut down operations in inundation zone, including but not limited to: wells and pumps. Request California Department of Public Health (CDPH) support in evaluating water contamination. Facilitate mutual aid from outside agencies through WEROC, California Utilities Emergency Association, and the Orange County Operational Area.

The City currently relies on imported water for the majority of its supply. In the event of a supply interruption in the importation facilities, the City's, as well as most of South Orange County's, customers would be impacted. In December of 1999, the AMP unexpectedly ruptured, immediately eliminating a major source of supply to South Orange County. Metropolitan was able to repair the pipeline and restore regular operations within seven days. It was fortunate that this pipeline failure occurred during the winter in a relatively accessible location. A more difficult pipeline repair or a major failure at the Diemer Filtration Plant could result in an interruption in imported supply far greater than seven days. The Metropolitan Administrative Policy requires its member

agencies be able to withstand planned supply shutdowns of at least seven days between the months of October and April. This policy is designed to facilitate Metropolitan ability to conduct scheduled maintenance of the supply and treatment systems.

Of all these risks, earthquakes represent the major area of risk to water system reliability. Imported water is treated locally at the Diemer Filtration Plant in Yorba Linda and delivered via two pipelines, the EOCF #2 and AMP. To ensure continued water reliability for South Orange County, 11 Orange County agencies, Metropolitan and the U.S. Bureau of Reclamation joined together to fund the South Orange County Water Reliability Study (SOCWRS) - Phase 2 System Reliability Plan. Heading these efforts was MWDOC.

The purpose of this planning effort was to:

- Identify risks, including earthquakes, that pose the greatest threat to the regional water treatment and distribution infrastructure;
- Identify ways to bolster source-of-supply and regional distribution systems, building on earlier engineering investigations and studies;
- Develop a list of projects that accomplish the above objectives, and identify appropriate investments;
- Allow for flexibility in phasing. Most notably project operational dates and sizing should be flexible to account for changes in Local Resource Development (Laps);
- The plan builds on a number of prior studies, including: SOCWRS Phase 1, which served as the foundation for this effort; Metropolitan Central Pool Augmentation Project, currently in project and right-of-way refinement; construction of the Santa Margarita Water District Upper Chiquita Reservoir to increase local storage for emergency needs; Irvine Ranch Water District Water Resources Master Plan Update and Planning Area-6 Sub-Area Master Plan; and various Orange County Water District plans and groundwater basin operations studies.

An emergency outage of the Diemer Filtration Plant, which is situated adjacent to the Whittier Fault, is judged to be the most severe supply risk to South Orange County. In addition, there are scheduled and sometimes urgent shutdowns of critical facilities that are necessary to make repairs and improvements.

One of these critical facilities, AMP, has experienced one pipeline break and two minor leaks since its construction in 1980. It has been shutdown at various times for inspection and repairs. The pipeline break occurred in December 1999 due to a pressure surge, and was repaired and restored to service in seven days by Metropolitan maintenance crews.

Finally, the EOCF #2, a Metropolitan-operated pipeline, is considered to be in good condition, but it is aging, having been constructed in 1961. An outage of this pipeline has a smaller impact in South Orange County since AMP and SCP, the major extension of the AMP into South Orange County, provides about 50% greater capacity than the EOCF #2.

There are several faults in the area that could cause earthquake-induced failures. Of most significance is the Whittier-Ellsinore Fault Zone and, to a lesser extent, the Peralta Hills Fault, San Joaquin Hills Thrust Fault, and the Newport-Inglewood Fault Zone. Knowledge of seismic forces has advanced significantly since the design and construction of the Orange County regional water treatment and distribution system. Design standards have therefore advanced for the protection of structures from major earthquakes.

5.5. Prohibitions, Penalties and Consumption Reduction Methods

Prohibitions

The City's Water Conservation Ordinance No. 1487 (Appendix D) lists year-round mandatory restrictions on water waste in addition to water conservation contingency measures should City Council declare a water supply shortage. These restrictions shall promote the efficient use of water, reduce or eliminate water waste, and complement the City's Water Quality regulations and urban runoff reduction efforts. Water waste restrictions include but are not limited to the following activities: outdoor watering, washing of vehicles, washing of hard or paved surfaces, filling or refilling swimming pools and decorative water features, using potable water in construction activities, and serving water in food and beverage service facilities. Additionally, the City requires leaks to be repaired in a time frame relative to each water supply shortage level. The prohibitions and the stages at which they take effect can be found in Table 5-5.

Table 5-5: Mandatory Prohibitions

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Leaks, breaks, and malfunctions in the water user's plumbing or irrigation system are prohibited for any period of time after such water waste should have been reasonably discovered and must be corrected within 72 hours of City notification.	Year Round
Watering or irrigation of vegetated areas is prohibited between 9:00 am and 6:00 pm except by use of a hand held device, hose equipped with an automatic shutoff device, low flow irrigation systems, recycled water, or sensor/weather controlled irrigation system.	Year Round
Outside watering is prohibited during rain events.	Year Round
Watering vegetated areas in a manner that causes excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter, or ditch is prohibited.	Year Round
The City shall no longer install turf on medians, parkways, island dividers, or on other non-recreational areas for any new, rehabilitated, or re-landscaped City project.	Year Round
Washing or hosing down vehicles is prohibited except by use of a hand held container, hose with an automatic shut off device, or at a commercial car wash.	Year Round
Commercial car wash facilities shall not permit the washing of any boat or vehicle on its premises other than by use of mechanical automatic car was h facilities utilizing water recycling equipment, use of a hose that operates on a timer and shuts off automatically at the expiration of the time period, use of a hose equipped with an automatic shutoff device, or use of bucket and hand washing. All wash/rinse water must be captured and recycled or discharged into the sanitary sewer system. All new commercial car wash facilities shall be equipped with a water recycling system.	Year Round
No person shall use a water hose to wash any type of equipment or machinery unless the hose is equipped with an automatic shutoff device.	Year Round
No person shall use water through a hose to clean the exterior of any building or structure unless	Year Round

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
such hose is equipped with an automatic shutoff device.	
Washing hard or paved surfaces is prohibited except to alleviate safety or sanitary hazards using a hand held container, hose with an automatic shut off device, or a low-volume high pressure cleaning machine that recycles used water.	Year Round
Swimming pools may not be emptied and refilled except to prevent or repair structural damage or to comply with public health regulations. All pools and spas shall be equipped with a water recirculation device.	Year Round
The use of water to operate or maintain levels in decorative fountains, basins, ponds, and water ways is prohibited unless a recirculation device is used.	Year Round
Buildings requesting new water service or being remodeled are prohibited from installing single-pass cooling systems.	Year Round
All new commercial laundry facilities shall be equipped with a water reclamation system for reuse of rinse water. Laundromats and common area laundry rooms shall install high efficiency clothes washing machines as older machines are replaced.	Year Round
Commercial lodging establishments must provide option not to launder linen daily.	Year Round
Eating or drinking establishments shall serve drinking water only upon request.	Year Round
Restaurants with pre-rinse spray nozzles must use models which spray 1.6 gallons per minute or less.	Year Round
Defrosting food with running water is prohibited.	Year Round
Using a hose for wash-down of kitchens, garbage areas, or any other area required by the health department or for sanitation reasons is prohibited unless equipped with an automatic shutoff device.	Year Round
Scoop sinks shall be set at minimum flow at all times.	Year Round
All other water using equipment in new or remodeled kitchens shall use the best available water conserving technology.	Year Round
No potable water may be used for compacting or dust control purposes during construction	Year Round

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
activities when there is a reasonably available non-potable water source approved by the California Department of Public Health.	
Water hoses used for construction activities must be equipped with an automatic shut off nozzle and water used on a construction site must be prevented from entering any part of the storm drain system.	Year Round
No person may use water from a fire hydrant for purposes other than fire suppression or emergency aid without obtaining City permission	Year Round
Water use that is wasteful and/or without reasonable purpose is prohibited.	Year Round
All leaks shall be fixed within forty eight (48) hours once an owner/operator is made aware of a leak.	Level 1
All leaks shall be fixed within twenty four (24) hours once an owner/operator is made aware of a leak.	Level 2
New and rehabilitated landscaping for commercial and dedicated irrigation accounts of over one thousand (1000) square feet shall be limited to a plant palette such that the average plant factor and/or the landscape coefficient shall be less than or equal to 0.5 for all new landscaping. Exempt from this restriction are environmental mitigation projects, landscaping necessary for fire protection and/or erosion control, plant materials identified as rare or essential to the well being of endangered/rare species, and active recreation areas and playing fields.	Level 2
Water for construction will be limited to essential activities only including testing fire suppression systems, maintaining hygiene and dust control at construction sites, interior dry wall tape texturing, exterior masonry stucco finishing, and pressure testing domestic water and sanitary waste lines. Potable water may not be used for grading without City permission.	Level 2
No person or entity, other than the City, shall implement landscaping requirements onto another person.	Level 3
Dedicated irrigation accounts are restricted from installing new plant material between the months of May through October.	Level 3

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
All customers are prohibited from planting and/or establishing turf.	Level 3
Non-profit and charity car washes are prohibited.	Level 3
No person shall use water through a hose to clean the exterior of any building or structure.	Level 3
Filling residential pools and spas is prohibited.	Level 3
Filling or refilling ornamental lakes and ponds is prohibited. Ornamental lakes and ponds that sustain aquatic life of significant value and were actively managed prior to the shortage declaration are exempt.	Level 3
No new will-serve letters will be provided except under one or more of the following: a. Projects necessary to protect public health, safety, and/or well being. b. Projects with a valid unexpired building permit.	Level 3
All outdoor irrigation is prohibited or curtailed as determined by the City Council. Dedicated irrigation accounts may be turned off.	Level 4
No hosing or washing down of vehicles other than at a commercial car wash. RV's and boats are exempt.	Level 4
Potable water use for construction related activities is prohibited or curtailed as determined by the City Council.	Level 4
The City, in its sole discretion, may discontinue service to customers who willfully violate the restrictions set forth during a Level 4 Water Emergency.	Level 4

Penalties and Charges

Any customer who violates provisions of the Water Conservation Ordinance by either excess use of water or by specific violation of one or more of the applicable water use restrictions for a particular mandatory conservation stage may be cited by the City and may be subject to written notices, surcharges, fines, flow restrictions, service disconnection, and/or service termination which are detailed in Table 5-6 and in the Water Conservation Ordinance in Appendix D.

Table 5-6: Penalties and Charges

Penalties or Charges	Stage When Penalty Takes Effect
First Violation – Written notice, a twenty five dollar ($25) administrative fee payable to the City, and a fine not to exceed one hundred dollars ($100) for residential accounts. Commercial, industrial, and irrigation accounts will have a fine not to exceed two hundred dollars ($200) and a water waste use fee of four (4) times the regular water rate for each billing unit of water that the City estimates is wasted along with the written notice and administrative fee.	Any
Second Violation – Written notice, a fifty dollar ($50) administrative fee payable to the City and a fine not to exceed two hundred dollars ($200) for residential accounts. Commercial, industrial, and irrigation accounts will have a fine not to exceed four hundred dollars ($400) and a water waste use fee of four (4) times the regular water rate for each billing unit of water that the City estimates is wasted along with the written notice and administrative fee.	Any
Third and Subsequent Violations – Written notice, fifty dollar administrative fee payable to the City, and a five hundred dollar ($500) fine for residential accounts. Commercial, industrial, and irrigation accounts will have a fine not to exceed one thousand dollars ($1000) and a water waste use fee of four (4) times the regular water rate for each billing unit of water that the City estimates is wasted along with the written notice and administrative fee.	Any
Any Violation – Possible abatement of violation as a nuisance.	Any
Possible termination of water service to the site of the violation.	Any

Consumption Reduction Methods

The City has established reduction methods in Chapter 13.12 of the Municipal Code of the City of San Clemente (Appendix D). Reductions methods and prohibitions for stages I through III are detailed in Table 5-7. The cumulative implementation of these prohibitions will result in a greater than 40% reduction in water use.

Table 5-7: Consumption Reduction Methods

Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
Water Watch Conservation Measures	1	10%
Water Alert Conservation Measures	2	10-20%
Water Warning Conservation Measures	3	21-40%
Water Emergency Conservation Measures	4	>40%

5.6. Impacts to Revenue

A cash reserve fund in the amount of 8% of the total operating expenditures has been established to offset an interruption of revenues from declined water sales and unanticipated or emergency expenditures. Initial responses to revenue declines include deferment of supply purchases, utilization of supply inventory reserves, and reduction of non-essential contractual services and postponement of capital equipment purchases. In addition to the expected decrease of revenue during periods of water shortages, there is a corresponding decrease in expenditures of purchased water supplies and energy costs for water transportation.

The City will closely monitor revenue requirements during extended periods of water shortages and if necessary, will implement special charges or rate adjustments to ensure revenue needs are met.

Table 5-8: Proposed Measures to Overcome Revenue Impacts

Name of Measures
Rate Adjustment
Development of Reserves (e.g. Rate Stabilization Reserve)
Implement Water Shortage Surcharge
Cost of Service Analysis

Table 5-9: Proposed Measures to Overcome Expenditure Impacts

Name of Measures
Scale Back Meter Replacement Program
Reduce Annual Equipment Maintenance
Reduce Depreciation Contributions
Reduce Conservation Media Outreach

5.7. Reduction Measuring Mechanism

Water Use Monitoring Procedure

Ordinance

The City of San Clemente has adopted an ordinance to respond to shortages of water supplies. Chapter 13.12 of the Municipal Code of the City of San Clemente specifically addresses regulations, restrictions and priorities on the delivery, consumption and use of water within the service area of the City during periods of water supply shortages. The municipal code also implements seasonal and year round water conservation measures and describes appropriate levels of enforcement.

A copy of Chapter 13.12 of the Municipal Code of the City is included as Appendix D.

Monitoring Procedure

During normal supply conditions, potable water production is recorded daily and importation water deliveries are recorded monthly.

During periods of water shortages, water levels at Bradt Reservoir are used as a barometer to determine water importation supply rates. Bradt Reservoir has a capacity of 48 million gallons and normally operates between 35 and 48 million gallons. Operations bench marked 4 operating levels, each with defined water use reduction criteria.

Additional water reduction may be implemented in the event of a planned temporary water shortage due to repairs. The Utilities manager and staff will implement voluntary water reduction planning to ensure stored supplies will last for the duration of the planned shortage. Operations will monitor stored water levels daily along with groundwater production rates during the shortage event.

In the event of a water supply allocation from Metropolitan and MWDOC, MWDOC will provide the City with a water use monthly report that will compare the City's current cumulative retail usage to its allocation baseline. MWDOC will also provide quarterly reports on the City's cumulative retail usage versus its allocation baseline.

Reduction Monitoring Mechanisms are listed in Table 5-10.

Table 5-10: Water Use Monitoring Mechanisms

Mechanisms for Determining Actual Reductions	Type of Data Expected
Use average water use to determine reductions	Average reduction
Increase monitoring of importation storage and supplies	Reservoir level data, flow data
Increase monitoring of groundwater production	Compare production data with target production
Increase leak detection monitoring program and system audits	Identify water loss
Increase customer meter reading	Consumption data and high water use
Increase customer meter calibration, repairs and replacement	Increase in meter read accuracy
MWDOC Water Use Monthly Reports	Comparison of cumulative retail usage to allocation baseline.
Automated sensors and telemetry	Monitor reservoir levels

6. Recycled Water

6.1. Agency Coordination

There are a number of water agencies in south Orange County that provide potable water service as well as wastewater collection and treatment. These agencies depend on imported water supplies for the majority of their potable water supplies due to misfortune of geography in that very little groundwater supplies are available. These agencies have been in the forefront of recycled water development to diversify water supplies.

The City owns and operates a Water Recycling Plant (WRP) located within the City. In 1995, the City completed a recycled water use master plan that was updated in 2007 in which various agencies provided information and assistance in developing the recycled water plan and are listed in Table 6-1.

Table 6-1: Participating Agencies

Participating Agencies	Participated
Water Agencies	San Clemente, MWDOC
Wastewater Agencies	San Clemente, SOCWA
Groundwater Agencies	San Clemente

6.2. Wastewater Description and Disposal

The City provides wastewater service to most areas within the City boundaries. The 14.7 square mile service area contains approximately 180 miles of gravity sewers ranging in size from 6" to 24" in diameter, 10 pump stations and 5 miles of pressure force mains. Wastewater is conveyed to the treatment plant located on Avenida Pico from two pump stations situated in the vicinity of the plant. The pump stations are equipped with variable frequency drives that pace incoming flows to the treatment plant.

Wastewater first enters the treatment plant at the headworks building for metering, screening and grit removal. Incoming flows are accurately metered through a Parshall flume combined with ultra-sonic flow meter, screened through bar screens to remove the larger debris that can clog downstream piping, pumps and equipment, then conveyed into grit tanks for removal of coarse material such as sand and other fine inorganic material particles that cause wear in pumps and occupy valuable space in the digesters.

The first treatment process is primary clarification. The clarifiers provide a quiescent zone to promote the settling of suspended solids. Along with the removal of the majority of these solids a portion of the biological oxygen demanding (BOD) substances and grease and oils are also removed.

The next step is the activated sludge process which consists of aeration basins and secondary clarifiers. The aeration basins contain a population of bacteria and other microorganisms defined as mixed liquor. The mixed liquor culture feeds on the primary effluent suspended material and soluble BOD. Air is pumped and diffused into the aeration basins to provide aerobic conditions and mixing.

The mixed liquor then flows to the secondary clarifiers, which are similar to the primary units. The mixed liquor settles and is collected at one end of the basin. The majority of the settled mixed liquor is returned to the aeration basins to treat incoming primary effluent. To maintain balance in this biological treatment process a portion of the mixed liquor is removed from the process. The clear liquid called secondary effluent then flows through the Land Outfall to SOCWA (South Orange County Wastewater Authority) Ocean Outfall for disposal.

A portion is diverted and pumped to the reclamation process. Reclamation provides further treatment beyond secondary and is commonly referred to as Tertiary Treatment. The process includes chemical addition to promote the formation of floc. Flocculation results in the aggregation of larger secondary effluent suspended solids into larger particles. The flocculated effluent is then filtered and disinfected by chlorine. The tertiary effluent is used within the plant and distributed offsite to the Municipal and Bella Collina Golf Courses.

Effluent from the City's Water Treatment Plant that is not used for recycled water enters a land outfall splitter box before discharging to the South Orange County Wastewater Authority's Ocean Outfall for disposal. Turbidity levels are monitored at the splitter box and, if within specifications, a portion of secondary effluent is diverted to the reclamation facilities for tertiary treatment.

Solids removed from the primary clarifiers (primary sludge) and secondary clarifiers (waste activated sludge) are pumped to anaerobic digesters. The digesters further treat the solids to reduce their organic content. The resulting bio-solids are then conditioned, dewatered and trucked to a regional composting site.

Table 6-2 summarizes the past, current, and projected wastewater volumes collected and treated, and the quantity of wastewater treated to recycled water standards for treatment plants within the City’s service area. Table 6-3 summarizes the disposal method, and treatment level of discharge volumes.

Table 6-2: Wastewater Collection and Treatment (AFY)

Type of Wastewater	Fiscal Year Ending						
	2005	2010	2015	2020	2025	2030	2035-opt
Wastewater Collected & Treated in Service Area	4,200	4,400	4,700	5,000	5,000	5,000	5,000
Volume that Meets Recycled Water Standards	700	900	1,500	1,830	1,830	1,830	1,830

Table 6-3: Disposal of Wastewater (Non-Recycled) (AFY)

Method of Disposal	Treatment Level	Fiscal Year Ending					
		2010	2015	2020	2025	2030	2035-opt
Ocean Outfall	Secondary/Tertiary	3,500	3,200	3,170	3,170	3,170	3,170

6.3. Current Recycled Water Uses

The City currently owns and operates a 2.2 MGD WRP that takes a portion of the City's wastewater and treats it to tertiary levels. The recycled water is used for irrigation and process water at the treatment plant and sold to the Municipal and Bella Collina Golf Courses. In FY 09-10 approximately 430 AF of recycled water from the WRP was used to irrigate the City's Municipal Golf Course, or approximately 3.5% of the City's total water demand in FY 09-10.

Table 6-4 below illustrates the current uses for recycled water in the City. The usage is limited to landscape irrigation with a tertiary treatment level.

Table 6-4: Current Recycled Water Uses (AFY)

User Type	Treatment Level	Fiscal Year Ending
		2010
Agriculture		
Landscape	Tertiary	600
Wildlife Habitat		
Wetlands		
Industrial		
Groundwater Recharge		
WRP Process Water	Tertiary	300
Total		**900**

6.4. Potential Recycled Water Uses

The City is in the design process to expand its WRP from 2.2 MGD to 4.4 MGD, based on the 2007 Recycled Water Master Plan. The projected total recycled water demand will increase to 1,830 AFY and will include nearly 9 miles of pipelines, conversion of a domestic water reservoir to recycled water storage, and a pressure reducing station as well as an interconnection with Santa Margarita Water District. This expansion will reduce the City's dependency on imported water by approximately 10%. The project schedule estimates construction to begin in the fall of 2011 with the first phase of new recycled water customers to come on-line in 2013.

Tables 6-5 and 6-6 represent projected recycled water use within the City's service area through 2035. Recycled water use will increase by more than double through the 25-year period, with landscape irrigation as its sole use.

Table 6-5: Projected Future Use of Recycled Water in Service Area (AFY)

User Type	Fiscal Year Ending					
	2010	2015	2020	2025	2030	2035-opt
Projected Use of Recycled Water	900	1,500	1,830	1,830	1,830	1,830

Table 6-6: Projected Recycled Water Uses (AFY)

User Type	Treatment Level	Fiscal Year Ending				
		2015	2020	2025	2030	2035-opt
Agriculture						
Landscape	Tertiary	1,200	1,530	1,530	1,530	1,530
Wildlife Habitat						
Wetlands						
Industrial						
Groundwater Recharge						
WRP Process Water	Tertiary	300	300	300	300	300
Total		**1,500**	**1,830**	**1,830**	**1,830**	**1,830**

Table 6-7 compares the recycled water use projections from the City's 2005 UWMP with actual 2010 recycled water use.

Table 6-7: Recycled Water Uses – 2005 Projections compared with 2010 Actual (AFY)

User Type	2005 Projection for 2010	2010 Actual Use
Agriculture		
Landscape	956	600
Wildlife Habitat		
Wetlands		
Industrial		
Groundwater Recharge		
WRP Process Water	300	300
Total	**1,256**	**900**

6.4.1. Direct Non-Potable Reuse

The City currently uses water from their recycled water system for direct non-potable reuse such as landscape irrigation.

6.4.2. Indirect Potable Reuse

The City does not have the potential for indirect potable reuse within their service area.

6.5. Optimization Plan

The City has advocated the use of recycled water since 1957 and requires recycled systems where applicable and feasible.

Recycled projects receive a discounted flat rate for using recycled water. The rate is *$100/AF* less than the retail cost of potable water.

Utilizing recycled water also provides customers with a more reliable supply of water that is not subject to water supply allocations imposed by Metropolitan or MWDOC.

The City will conduct future cost/benefit analyses for recycled water projects, and seek creative solutions to facilitate dedicated irrigation accounts using potable water to convert over to recycled water, in coordination with MWDOC, Metropolitan and other cooperative agencies. These include solutions for funding, regulatory requirements, institutional arrangements and public acceptance.

7. Future Water Supply Projects and Programs

7.1. Water Management Tools

The City is developing a diversified portfolio of water supplies such as doubling its recycling capacity, optimizing Groundwater production, and promoting water use efficiency, in addition to exploring other local supplies such as Desalination to minimize the needs for imported water.

7.2. Transfer or Exchange Opportunities

Metropolitan currently has a tiered unbundled rate structure. Tier 2 of this rate structure increases the cost of supply to a member agency in order to provide a price signal that encourages development of alternative supply sources. One alternative source of supply may be a transfer or exchange of water with a different agency.

The CALFED Bay-Delta Program (CALFED) has helped to develop an effective market for water transactions in the Bay-Delta region. This market is demonstrated by the water purchases made by the Environmental Water Account and Metropolitan in recent years. MWDOC and its member agencies plan to take advantage of selected transfer or exchange opportunities in the future. These opportunities can help ensure supply reliability in dry years and avoid the higher Tier 2 cost of supply from Metropolitan. The continued development of a market for water transactions under CALFED will only increase the likelihood of MWDOC participation in this market when appropriate opportunities arise.

MWDOC will continue to help its member agencies in developing these opportunities and ensure their successes. In fulfilling this role, MWDOC will look to help its member agencies navigate the operational and administrative issues of wheeling water through Metropolitan water distribution system.

The City relies on the efforts of Metropolitan as well as MWDOC to pursue transfer or exchange opportunities. At this time, the City is not currently involved in any transfer or exchange opportunities.

7.3. Planned Water Supply Projects and Programs

The City plans on expanding their existing WRP capacity from 2.2 MGD to 4.4 MGD, increasing their projected recycled water supply up to 1,830 AFY for landscape irrigation. A more detailed description of this project can be found in Section 6.

Table 7-1: Specific Planned Water Supply Projects and Programs

Project Name	Projected Start Date	Projected Completion Date	Normal-Year Supply to Agency (AF)	Single-Dry Year Yield (AF)	Multiple-Dry-Year 1 Yield (AF)	Multiple-Dry-Year 2 Yield (AF)	Multiple-Dry-Year 3 Yield (AF)
WRP Expansion	2010	2013	1,830	1,830	1,830	1,830	1,830

7.4. Desalination Opportunities

Until recently, seawater desalination has been considered uneconomical to be included in the water supply mix. However, recent breakthroughs in membrane technology and plant sitting strategies have helped reduce desalination costs, warranting consideration among alternative resource options. However, the implementation of large-scale seawater desalination plants faces considerable challenges. These challenges include high capital and operation costs for power and membrane replacement, availability of funding measures and grants, addressing environmental issues and addressing the requirements of permitting organizations, such as the Coastal Commission. These issues require additional research and investigation.

MWDOC has been in the process of studying the feasibility of ocean desalination on behalf of its member agencies. MWDOC is reviewing and assessing treatment technologies, pretreatment alternatives, and brine disposal issues, and identifying and evaluating resource issues such as permitting, and the regulatory approvals (including CEQA) associated with the delivery of desalinated seawater to regional and local distribution systems.

MWDOC is also assisting its member agencies in joint development of legislative strategies to seek funding in the form of grant and/or loans, and to inform decision-makers of the role of seawater desalination in the region's future water supplies. Observing the strategies and outcomes of other agency programs (such as that in Tampa Bay, Florida) to gain insights into seawater desalination implementation and cost issues is also being undertaken.

In Orange County, there are three proposed ocean desalination projects that could serve MWDOC member agencies, including one that specifically that may benefit the City. These are the South Orange Coastal Desalination Project, the Huntington Beach Seawater Desalination Project, and the Camp Pendleton Seawater Desalination Project. Table 7-2 provides an overview of the desalination opportunities that the City may consider.

Table 7-2: Opportunities for Desalinated Water

Sources of Water	Check if Yes
Ocean Water	X
Brackish Ocean Water	X
Brackish Groundwater	X

7.4.1. Groundwater

There are limited brackish groundwater opportunities within the City's service area. The City's Groundwater Supply and Management Study from 1987 (Appendix B) has identified small pockets of groundwater in the Prima Deschecha Canada and Secunda Deschecha Canada sub-basins. Due to the low yield and potential for salt-water intrusion, the City has yet to consider these sources of groundwater.

7.4.2. Ocean Water

South Orange Coastal Desalination Project – MWDOC is proposing a desalination project in joint with the City of San Clemente, Laguna Beach County Water District, Moulton Niguel Water District, City of San Juan Capistrano, South Coast Water District, and Metropolitan. The project is to be located adjacent to the San Juan Creek in Dana Point just east of the transition road from PCH to the I-5. The project will provide 15 MGD (16,000 AFY) of drinking water and will account for up to 30% of the potable water supply to the participating agencies.

Phase 1 consists of drilling four test borings and installing monitoring wells. Phase 2 consists of drilling, constructing and pumping a test slant well. Phase 3 consists of constructing a Pilot Test Facility to collect and assess water quality. Phases 1 and 2 have been completed and Phase 3 commenced in June 2010 and will last 18 months.

If pumping results are favorable after testing and the project is determined to be cost-effective, a full-scale project description and Environmental Impact Report (EIR) will be developed. If the EIR is adopted and necessary permits are approved, the project could be operational by 2016.

Huntington Beach Seawater Desalination Project – Poseidon Resources LLC (Poseidon), a private company, has proposed development of the Huntington Beach Seawater Desalination Project to be located adjacent to the AES Generation Power Plant in the City of Huntington Beach along Pacific Coast Highway and Newland Street. The proposed project would produce up to 50 MGD (56,000 AFY) of drinking water and will distribute water to coastal and south Orange County to provide approximately 8% of Orange County's water supply needs.

Poseidon had received non-binding Letters of Intent (LOI) from the Municipal Water District of Orange County and 17 retail water agencies to purchase a total of approximately 72 MGD (88,000 AFY) of Project supplies.

In addition to final agreements with the participating agencies, the Project still needs approvals from the State Lands Commission and the California Coastal Commission before Poseidon can commence construction of the desalination facility in Huntington Beach. If the project receives all required permits by 2011, it could be producing drinking water for Orange County by as soon as 2013.

Camp Pendleton Seawater Desalination Project– San Diego County Water Authority (SDCWA) is proposing a desalination project in joint with Metropolitan to be located at Camp Pendleton Marine Corps Base adjacent to the Santa Margarita River. The initial project would be a 50 or 100 MGD plant with expansions in 50 MGD increments up to a max of 150 MGD making this the largest proposed desalination plant in the US.

The project is currently in the study feasibility stage and is conducting geological surveys to study the effect on ocean life and examining routes to bring desalination to SDCWA's delivery system. MWDOC and south Orange County agencies are maintaining a potential interest in the project, but at this time is only doing some limited fact finding and monitoring of the project.

8. UWMP Adoption Process

8.1. Overview

Recognizing that close coordination among other relevant public agencies is the key to the success of its UWMP, the City worked closely with other entities such as MWDOC to develop and update this planning document. The City also encouraged public involvement through the holding of a public hearing to learn and ask questions about their water supply.

This section provides the information required in Article 3 of the Water Code related to adoption and implementation of the UWMP. Table 8-1 summarizes external coordination and outreach activities carried out by the City and their corresponding dates. The UWMP checklist to confirm compliance with the Water Code is provided in Appendix A.

Table 8-1: External Coordination and Outreach

External Coordination and Outreach	Date	Reference
Notification and Public Hearing	April 28, 2011 & May 5, 2011	Appendix F
Notified city or county within supplier's service area that water supplier is preparing an updated UWMP (at least 60 days prior to public hearing)	March 17, 2011	Appendix E
Held public hearing	May 17, 2011	Appendix F
Adopted UWMP	May 17, 2011	Appendix G
Submitted UWMP to DWR (no later than 30 days after adoption)	June 17, 2011	
Submitted UWMP to the California State Library and city or county within the supplier's service area (no later than 30 days after adoption)	June 17, 2011	
Made UWMP available for public review (no later than 30 days after filing with DWR)	July 17, 2011	

This UWMP was adopted by the City Council on May 17, 2011. A copy of the adopted resolution is provided in Appendix G.

A change from the 2004 legislative session to the 2009 legislative session required the City to notify any city or county within its service area at least 60 days prior to the public

hearing. The City sent a Letter of Notification to the County of Orange on March 17, 2011 that it is in the process of preparing an updated UWMP (Appendix E).

8.2. Public Participation

The City notified the public of its urban water management planning efforts since the first plan was developed in 1985. A legal Public Hearing Notice was published in the local newspaper and posted at City facilities to inform residents of the UWMP update. A public hearing for public review and comment on the draft plan was held during a City Council meeting prior to the City Council's approval of the UWMP. The Notice of Public Hearing on Date is included in Appendix F.

8.3. Agency Coordination

The City's water supply planning takes place in coordination with the policies, rules, and regulations of its regional water and wastewater agencies. The City is dependent on imported water from Metropolitan through MWDOC, its regional wholesaler. The City is a member of the South Orange County Wastewater Authority (SOCWA), a Joint Powers Authority that treats and disposes of wastewater effluent and biosolids from various service areas covering South Orange County. Thus, the City involved these aforementioned water and wastewater agencies in the development of its 2010 UWMP at various levels of contribution as summarized in Table 8-2.

Table 8-2: Coordination with Appropriate Agencies

	Participated in Plan Development	Commented on Draft	Attended Public Meetings	Contacted for Assistance	Sent Copy of Draft Plan	Sent Notice of Intention to Adopt	Not Involved/No Information
CSC Planning Division				X	X	X	
CSC Wastewater Utilities	X	X		X	X	X	
County of Orange						X	
Santa Margarita Water Dist.						X	
South Coast Water Dist.						X	
SOCWA						X	
MWDOC	X			X		X	

As a member agency of MWDOC, MWDOC provided assistance to the City's 2010 UWMP development by providing much of the data and analysis such as, population projections, demand projections, and SBx7-7 modeling. The City's UWMP was developed in collaboration with MWDOC's 2010 RUWMP to ensure consistency between the two documents as well as Metropolitan's 2010 RUWMP and 2010 Integrated Water Resources Plan.

8.4. UWMP Submittal

8.4.1. Review of Implementation of 2005 UWMP

As required by California Water Code, the City summarizes the implementation of the Water Conservation and Water Recycling Programs to date, and compares the implementation to those as planned in its 2005 UWMP.

Comparison of 2005 Planned Water Conservation Programs with 2010 Actual Programs

As a signatory to the MOU regarding urban water use efficiency, the City's commitment to implement BMP-based water use efficiency program continues today. For the City's specific achievements in the area of conservation, please see Section 4 of this Plan.

Comparison of 2005 Projected Recycled Water Use with 2010 Actual Use

Current recycled water projections for the City in 2010 are about 28% less than previously forecasted for 2010 in the 2005 UWMP, as illustrated in Table 6-7.

8.4.2. Filing of 2010 UWMP

The City Council reviewed the Final Draft Plan on May 17, 2011. The five-member City Council approved the 2010 UWMP on May 17, 2011. See Appendix G for the resolution approving the Plan.

By June 17, 2011, the City's Adopted 2010 UWMP was filed with DWR, California State Library, County of Orange, and cities within the City of San Clemente's service area.

Appendices

A. Urban Water Management Plan Checklist
B. City of San Clemente Groundwater Supply and Management Study
C. Calculation of Dry Year Demands
D. Ordinance No. 1487, WaterSmart SC Flyer, Door Hanger, High Use Letter, New Customer Welcome Letter, Utility Bill
E. 60 Day Notification Letters
F. Public Hearing Notice
G. Copy of Plan Adoption

Appendix A

Urban Water Management Plan Checklist

Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	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)		Section 8.3
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Appendix E
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		Section 8.4
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		Section 8.4
55	Provide supporting documentation that the water supplier has encouraged 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.	10642		Section 8.2
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Appendix F
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Appendix G
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Section 8.4

No.	UWMP requirement a	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		Section 8.4
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Section 8.4
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Section 1.3.1
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Section 2.2.1
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M	Section 2.2.2
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 2.2.2
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Section 2.2.3
SYSTEM DEMANDS				
1	Provide 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)		Section 2.4.4 Section 2.4.5
2	Wholesalers: Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. Retailers: Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	Appendix F Section 2.4.6

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		Not applicable
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Section 2.3
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Section 2.5
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		Section 2.5.2
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Section 3.1
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Section 3.3
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		Not applicable
16	Describe the groundwater basin.	10631(b)(2)		Section 3.3
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		Not applicable

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		Not applicable
19	For groundwater basins that are not adjudicated, provide information as to whether DWR 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 departmental 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. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		Section 3.3
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		Section 3.3.2
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	Section 3.3.3
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Section 7.2
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Section 7.3
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Section 7.4
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Section 6.1
45	Describe 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.	10633(a)		Section 6.2

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		Section 6.2
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Section 6.3
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Section 6.4
49	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.	10633(e)		Section 6.4
50	Describe the 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.	10633(f)		Section 6.5
51	Provide 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 meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		Section 6.5
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		Section 3
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Section 3.5.1
23	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 supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		Section 3.5.2
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Section 5.2

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
36	Provide 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.	10632(b)		Section 5.3
37	Identify 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.	10632(c)		Section 5.4
38	Identify 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.	10632(d)		Section 5.5
39	Specify 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 percent reduction in water supply.	10632(e)		Section 5.5
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Section 5.5
41	Provide an analysis of the impacts of each of the actions and conditions described in 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)		Section 5.6
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Appendix D
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		Section 5.7
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	Four years 2010, 2015, 2020, 2025, and 2030	Section 3.5.2.1

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing 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. Base the assessment on the information compiled under 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 3.5.3 Section 3.5.4 Section 3.5.5
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Section 4
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Section 4
28	Provide 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 ability to further reduce demand.	10631(f)(4)		Section 4
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	Not applicable
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Not applicable

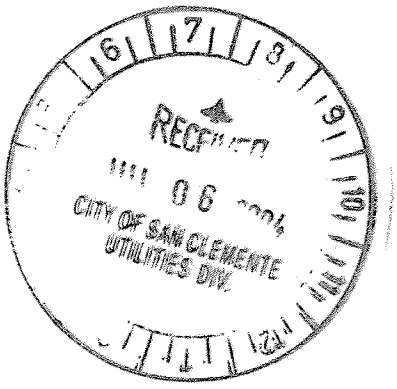
a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review

Appendix B

City of San Clemente Groundwater Supply and Management Study

S. Patterson



City of San Clemente

Groundwater Supply and Management Study

September 1987

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September 11, 1987

CITY OF SAN CLEMENTE
Attention: Mr. William E. Cameron
City Engineer
101 W. Portal
San Clemente, CA 92672

GROUNDWATER MANAGEMENT STUDY (Project No. 1-86)

Boyle Engineering Corporation is pleased to submit the final report on the Groundwater Management Study prepared for the City. The report contains documentation of the groundwater basin conditions, supply facilities, basin yield studies, and groundwater development potential. In addition, several recommendations are outlined for City action.

We wish to acknowledge the cooperation and assistance of the City's water system staff during the preparation of this study, and look forward to continuing to assist the City in the management of its water resources.

BOYLE ENGINEERING CORPORATION

William R. Everest, PE
Principal Engineer

WRE:ds

Attachment: final report (20 copies)

OC-S39-102-00

CITY OF SAN CLEMENTE

GROUNDWATER MANAGEMENT STUDY

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CHAPTER 1

EXECUTIVE SUMMARY

Boyle Engineering Corporation (BEC) was retained by the City of San Clemente on July 15, 1986, to prepare Groundwater Supply and Management Study, Project No. 1-86. The scope of work is presented in Appendix C and summarized below:

- Review City and other's data on groundwater conditions.
- Estimate range of potential groundwater yield.
- Inspect and evaluate condition of City groundwater supply facilities.
- Determine groundwater development potential for:
  - * Firm supply.
  - * Imported water storage.
  - * Conjunctive operations.
- Cost effectiveness of groundwater treatment.
- Outline institutional issues.
- Prepare documentation report and recommended plan.
- Prepare outline work plan for further investigation and action.

This chapter presents the key elements of the study.

GROUNDWATER BASIN CONDITIONS

Annual groundwater extractions by the City were approximately 1,100 acre-feet per year (AFY) during 1959-70 and 800 AFY during 1970-84. Groundwater levels have generally ranged from elevation -85 mean sea level (MSL) to -105 MSL. Groundwater quality meets drinking water standards, except for excessive concentrations of iron and manganese, which has been and will continue to be treated by the City. Seawater intrusion in the groundwater basin was experienced in the past, but controlled pumping can probably prevent this recurrence.

GROUNDWATER SUPPLY FACILITIES

A physical survey of the City facilities was conducted and is documented in Chapter 3. Renovation for Well 3 would be extensive. Well 4, with a collapsed casing, could be replaced, but its location leads to well interference. Well 5 is a candidate for reactivation and controlled pumping, at nominal cost. Well 6 renovation would require significant upgrading prior to reactivation. Water treatment should be consolidated at Plant No. 2, which is in good condition, and Plant No. 1 should not be reactivated due to major required improvements.

BASIN YIELD STUDIES

Past documents have been reviewed in order to predict generalized estimates of firm yield available to the City, from groundwater. Alternative methods of analysis used in the derivation of a hypothetical yield for the previously developed San Clemente

subbasin suggest a range of 900 to 1,100 AFY, including an unknown but probably significant underflow from the adjoining San Mateo basin on Camp Pendleton. Other potential groundwater basins exist within the City, and their hypothetical yields have been estimated in the range of 40 to 160 AFY.

GROUNDWATER DEVELOPMENT POTENTIAL

Continuous development of San Clemente subbasin groundwater yield is feasible but will necessitate improvements to existing facilities, continued treatment for iron and manganese removal, tests to verify basin yield, and improvement in record-keeping. The undeveloped basins in the Secunda Deschecha Canada should not be considered for firm yield development.

Sufficient capacity in the undeveloped Prima Deschecha Canada basin exists to consider developing its firm yield. Recharge and storage of imported water in that basin is also possible. Either option would necessitate further study, field investigations and test well construction, and expanded facilities construction. Imported water storage in other groundwater basins does not appear to be feasible.

Further development of groundwater from the San Mateo basin would probably have a negative effect on the current San Clemente subbasin withdrawals and is not recommended. Conjunctive imported water/groundwater operations are not recommended at this time, but such potential in the Prima Deschecha Canada could be evaluated following studies of firm yield development or imported water storage.

Safe utilization of the groundwater basin, including treatment, provides a dependable supply at lower cost that imported water purchases. This supply should be protected and enhanced where feasible. The City should apply for a low-interest Department of Water Resources (DWR) loan for the proposed groundwater recharge program.

GROUNDWATER DEVELOPMENT PROGRAM

Chapter 6 lists several recommendations for the City to act upon, including groundwater development, facilities renovation, and system operations. Requirements for future investigations, relative to the recommended program, are also delineated.

CHAPTER 2

GROUNDWATER BASIN CONDITIONS

BEC has reviewed various City files and reports on the groundwater basin to determine basin conditions. This data was provided to BEC by the City on July 29, 1986 and October 21, 1986. In addition, several formal reports on the San Clemente and other groundwater basins have been reviewed (Appendix A - References 1-13).

The study began with an analysis of the historic well data. The City provided daily well extraction data, pumping rates, and drawdown information from 1957 to 1977. The production rates and drawdown information for the years 1970-77 were limited and incomplete.

EXTRACTION RATES

City records of groundwater extraction are fairly complete for the period 1959-70. Extraction data for 1970-77 is incomplete. Groundwater production rates for 1959-70 from each well is shown on Table -D1. Extractions from Wells 2, 3, 4, and 6 approximated 1,100 acre-feet per year (AFY). For reference, the location of these wells is shown on Figure 2-1.

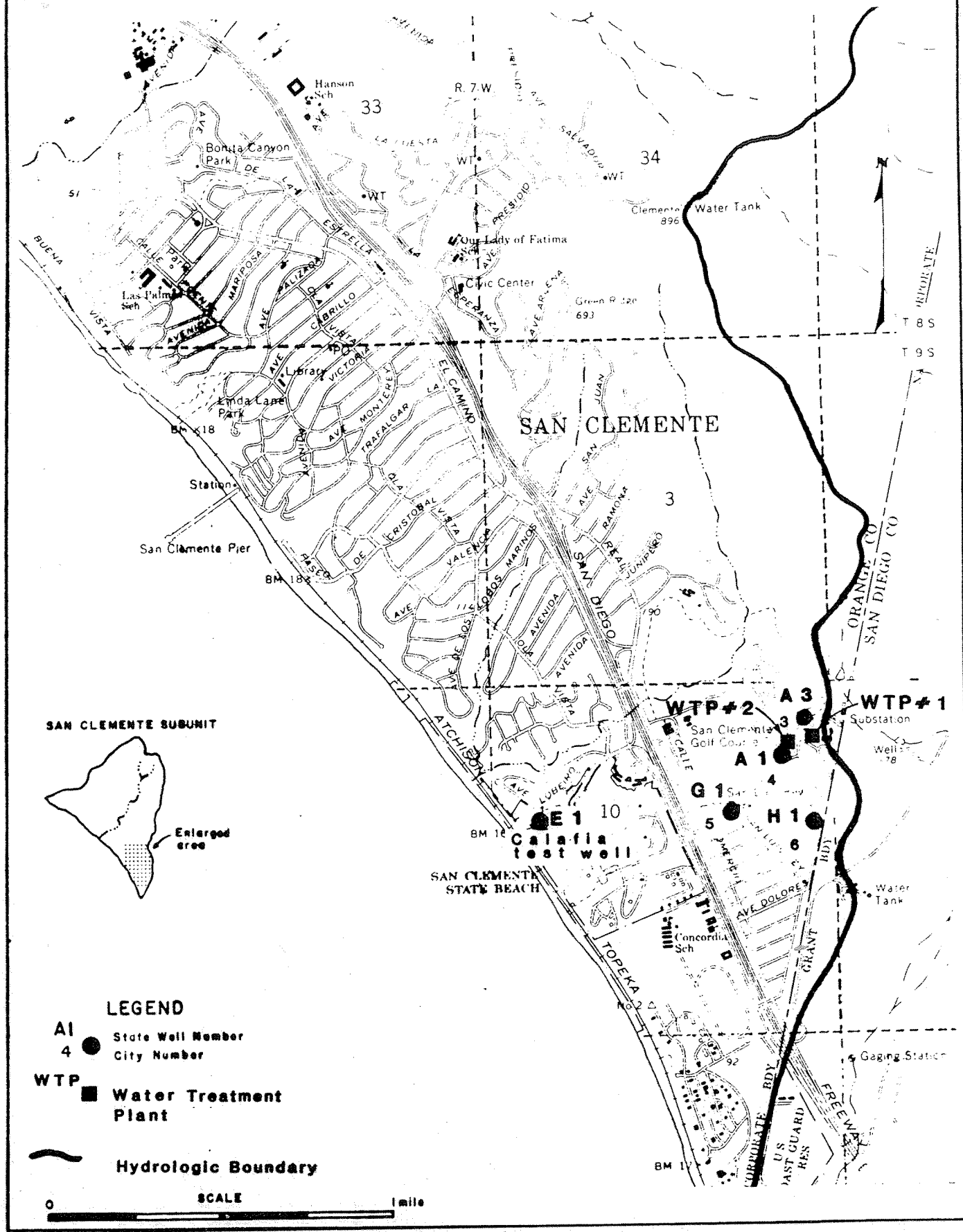

FIG. 2-1. LOCATION OF CITY WELLS & TREATMENT PLANTS

TABLE 2-1

Annual Groundwater Production (AF/Y)

1959-70

Year	Well No. 2	Well No. 3	Well No. 4	Well No. 5	Well No. 6	Total Basin Production
1959	17	235	287	15	611	1,165
1960	58	271	400		439	1,168
1961	18	497	262		533	1,310
1962	66	422	260		579	1,327
1963	.5	39	20		401	460
1964	6	209	323		379	917
1965		272	427		405	1,104
1966		396	333		366	1,095
1967		433	74		702	1,209
1968		450	60		698	1,208
1969		396	60		603	1,059
1970		500	73		629	1,202
AVERAGE	14	343	215	1	529	1,102

Groundwater production rates during the period 1974-84 are summarized on Table 2-2 and averaged 819 AF/YR. Data on individual well production during this period is not readily available.

TABLE 2-2

Annual Groundwater Production

1970-84

1970	1,198
1971	983
1972	862
1973	871
1974	1,109
1975	1,211
1976	864
1977	907
1978	342
1979	641
1980	969
1981	980
1982	501
1983	665
1984	177
AVERAGE	819

Source: Urban Water Management Plan (1985).

GROUNDWATER LEVELS

As stated previously, the drawdown information for 1970-77 was sparse and incomplete, and therefore its effective analysis was not possible. Generally, drawdown information was given in the City Monthly Summary Reports for 1959-70. This data was reviewed and is plotted on Figure 2-2, together with the corresponding average annual pumping rate. As shown, average groundwater levels are mostly between elevation -85 MSL to -105 MSL.

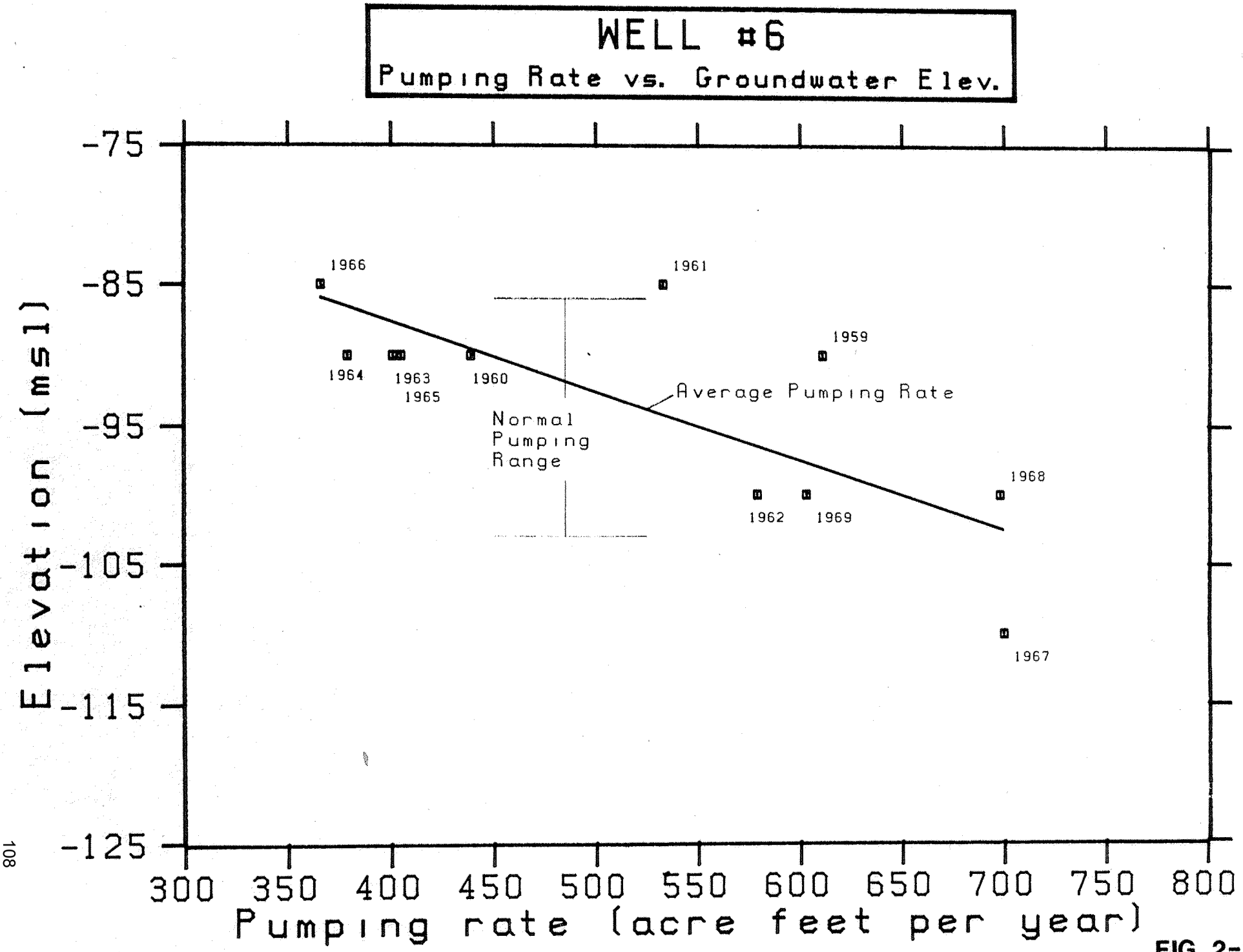
WELL #6
Pumping Rate vs. Groundwater Elev.
Elevation (msl)
-75
-85
-95
-105
-115
-125
300
350
400
450
500
550
600
650
700
750
800
Pumping rate (acre feet per year)
1966
1961
1959
1964
1963
1965
1960
Average Pumping Rate
Normal
Pumping
Range
1968
1962
1969
1967

FIG. 2-2

WATER QUALITY

Water quality data for the San Clemente groundwater basin has been reviewed in various sources. The most complete data summary was prepared by California Department of Water Resources (DWR), and is presented in Table 2-3. With the exception of iron and manganese concentrations, the quality meets minimum drinking water criteria. Data on other contaminant levels is not readily available.

TABLE 2-3

QUALITY OF WATER FROM CITY OF SAN CLEMENTE WELLS 1954-1984

(In MG/L, unless Otherwise Noted)

Constituent	Mean Concentration for Well* 3	4	6	Range of Concentration for Well* 3	4	6
Calcium	60	66	46	29.4-150	12-190	24.4-100.0
Magnesium	32	28	28	22.7-44.2	6.2-57.0	17.0-48.5
Sodium	83	81	78	60-110	60-118	66-93
Potassium	4.1	3.6	4.2	3.0-6.6	2.0-5.0	3.0-6.0
Bicarbonate	180	169	193	68-215	112-200	140-222
Sulfate	150	109	97	94-212.7	13.0-175.7	73.0-122.6
Chloride	104	164	93	78-198	70-592	74-287.1
Nitrate	0.4	0.5	0.6	0-2.0	0-2.3	0-2.9
Boron	0.2	0.1	0.1	0-1.1	0-0.8	0-0.3
Fluoride	0.5	0.8	0.4	0.2-0.9	0.2-2.0	0.2-0.8
Iron	0.2	1.4	0.2	0.09-0.6	0-3.7	0.03-0.4
Manganese	0.1	0.3	0.1	0.01-0.1	0.04-0.7	0-0.1
Total Dissolved Solids	575	638	511	492-720	404-1182	391-958
Total Hardness	263	292	228	220-318	80-515	190-450
Electrical Conductivity (umhos/cm)	898	972	846	785-1060	604-1610	725-1350
Hydrogein Ion Concentration (pH)	7.6	7.8	7.8	6.6-8.2	6.6-8.3	6.9-8.5

---

* No. of samples for each constituent: for Well 3, 3 to 20; Well 4, 5 to 20; and Well 6, 4 to 20.

Source: California Department of Water Resources (1986).

As with most coastal groundwater basins, there is a potential for seawater intrusion unless the San Clemente Basin is managed judiciously. Well 5, the production well closest to the shore, was previously pumped excessively with resultant intrusion. Chloride concentration, normally in the 93-164 mg/l range,

increased to 488 mg/l following a 24-hour test on May 6-7, 1958 at a pumping rate of 1,050 gpm. The pumping capacity of the well was later reduced to 300 gpm, and average chloride concentration reduced to 137 mg/l.

CHAPTER 3

GROUNDWATER SUPPLY FACILITIES

PHYSICAL SURVEY

A physical survey of the San Clemente groundwater supply facilities was conducted by BEC personnel on September 10, 1986. The survey included inspection of Wells 3, 4, 5, and 6; the site of previously abandoned Wells 1 and 2; Water Treatment Plants 1 and 2; the Bahia Pumping Station; and other facilities. A description of the City wells is presented in Table 3-1.

TABLE 3-1

San Clemente Well Information

Item	Well No. 1	2	3	4	5	6
Year Drilled	1930	1932	1947	1953	1956	1958
Year Abandoned	1953	(a)	(d)	1982	1959(e)	(c)
Pumping Capacity (gpm)	(a)	350	500	800	300	700
Depth (feet)	445	534	636	690	498	937
Casing Diameter (inches)	10	12	12	14	16	13-3/8

(a) Data not available.
(b) 1,050 gpm prior to May 1958.
(c) Not pumped since 1983.
(d) Not pumped since 1985.
(e) Pumped for others after 1959.

CONDITION OF FACILITIES

Well 3

Well 3 has been pumped consistently during the period 1959-85. The motor is in marginal condition showing much wear and tear from extensive service. The well enclosure structure appears to

still be strong but also shows its age. Well 3 is located on a very confined site. It is estimated that renovation costs for Well 3 would be extensive, and extracted water would continue to contain excessive concentrations of iron and manganese.

Well 4

Although Well 4 was taken out of service in 1982 due to a collapsed casing, its physical condition was also checked. The well is located within a vault on the golf course property. The site contains sufficient area for a replacement well and appurtenances, and concrete structures are in fairly good condition. Site upgrading costs at Well 4 would probably not be excessive; however, its close proximity to Wells 3 and 6 may make potential renovation infeasible, due to well interference.

Well 5

Well 5 has not been utilized for City purposes since 1959. When the well was operated previously at a higher capacity of 1,050 gpm, pumped water contained very high concentrations of minerals, probably denoting seawater intrusion into the well. Subsequently, the well capacity was reduced to 300 gpm. Well 5 is located at a screened site. Mechanical and structural works appear to be in fairly good condition. The site has sufficient space for construction of new facilities. Although some upgrading costs would be involved, Well 5 should be considered for possible reactivation and controlled pumping.

Well 6

The physical condition of Well 6 is considered marginal, with replacement of piping, electrical equipment, and structural repairs required, together with relocation of an offsite culvert, should this well be renovated.

Water Treatment Plant 1

Water Treatment Plant 1 previously provided treatment of Well 3 groundwater, with an outside pressure vessel system. The system piping contained various leaks, and some concrete damage and repairs were noticed. If reactivated, operating procedures and piping modifications would be required. The chlorination system and enclosure would have to be replaced prior to reactivation. Generally, preference should be given to the use of the newer Water Treatment Plant 2 rather than reactivation of Water Treatment Plant 1.

Water Treatment Plant 2

Water Treatment Plant 2 originally provided treatment of groundwater pumped from Wells 4 and 6, using equipment supplied by Filtronics for iron and manganese removal. The pressure vessels, tanks, and piping are in good condition, and it appears that this treatment plant could be placed back into service at minimal cost, assuming no internal corrosion. Some minor structural and piping improvements would be required on a portion of the enclosure. The chlorination room adjacent to the main treatment facility could also be easily returned to service.

CHAPTER 4

BASIN YIELD STUDIES

The City of San Clemente extracts groundwater from the San Clemente hydrologic subunit of the San Juan unit. Known groundwater reserves are found primarily in the turbidite facies of the Capistrano formation. This facies appears south of a southwest-northwest trending fault in the southern coastal section of the subunit. Confined groundwater is produced from a deep-lying series of semi-consolidated sandstone beds with numerous coarse gravel lenses.

PREVIOUS STUDIES

The basin has been extensively described by various authors, particularly P. K. Morton et al. (1973) and W. J. Edgington (1974), and most recently summarized by DWR (1986). DWR (1986) also describes other, mostly unsuccessful groundwater exploration in the subunit. The San Mateo groundwater basin adjacent to the San Clemente basin has been investigated by Everest et al. (1983).

BASIN GEOHYDROLOGY OVERVIEW

San Clemente Subunit

The geological and soils conditions in the San Clemente subunit have been reviewed in order to substantiate the existing groundwater development and to determine the potential for further development in existing and other portions of the subunit.

Geology. The majority of the area of the San Clemente subunit contains several geological formations which are not conducive to practical groundwater development. The minor formations that can be considered for development include the following: (1) turbidite facies and sandstone lens within the Capistrano formation (area of existing wells), (2) alluvium and beach sediments, and (3) sandstones in the Santiago Formation.

Soils Conditions. The San Clemente subunit does not contain any soils which have good to high infiltration rates (Group A). The majority of the soils in the subunit are characterized by slow or very slow infiltration rates. Some soils with moderate infiltration rates (Group B) are located in areas where geological formations are favorable.

Potential Groundwater Basins. By overlaying the areas of both favorable geology and moderate soils infiltration, four areas for possible groundwater development in the San Clemente subunit have been identified:

1. The area of past groundwater development in the southeast corner of the subunit (hereinafter referred to as the San Clemente subbasin).

2. A long but narrow, shallow alluvial subbasin in the Prima Deshecha Canada.

3. A subbasin in the upper segment of the Secunda Deshecha Canada at the upper boundary of the subunit.

TABLE 4-1

Characteristics of Potential San Clemente Groundwater Basins

Potential Groundwater Basin	(a) Surface Area of Potentially Usable Groundwater Basin (acres)	(b) Hypothetical Depth of Usable Aquifer (feet)	(c) Hypothetical Water in Storage (A-F)	(d) Hypothetical Usable Storage Capacity (A-F)	(e) Hypothetical Basin Firm Yield (A-F/year)
San Clemente Subbasin	107	10-110	1,600	1,000	400
Prima Deschecha Canada	190	10-40	1,200	500	120
Secunda Deschecha Canada					
Upper Zone					
- Alluvium	80	10-30	400	160	50
- Santiago Formation	50	10-50	400	160	50
Subtotal	130	10-50	800	320	100
Lower Zone	50	10-30	300	120	40

(a) Based on geological formation data of CDMG (1973) and soils characteristics data of USSCS (1978).
(b) Based on characteristics of similar coastal basins--DWR Bulletin No. 118 (1975).
(c) Assuming a porosity of 25% (20% for San Clemente subbasin).
(d) Reflects specific yield of alluvial aquifers and management techniques to avoid seawater intrusion in coastal aquifers.
(e) Based on yield/capacity relationships of similar coastal basins.

4. A small subbasin in the lower segment of the Secunda Deshecha Canada, near the shore.

The limits of these four areas is shown on Figure 4-1.

San Mateo Subunit

One of the groundwater basins located within Camp Pendleton is situated within the San Mateo and Christianos Creeks alluvial basins. The San Mateo basin consists of approximately 2,500 acres of usable groundwater basin, most of which is located within the camp limits. The Marine Corps has extracted water from the basin at an average annual rate of approximately 1,300 A-F/year since 1942. The San Mateo basin is discussed herein because there is a probable link between it and the San Clemente subbasin.

GROUNDWATER YIELD ESTIMATES

San Clemente Subunit

Known geohydrologic characteristics of the San Clemente subunit, together with characteristics of similar coastal basins, have been analyzed in an attempt to predict groundwater firm yield available to the City. This analysis is presented in Table 4-1. By considering the surface area of potentially usable groundwater basins (from Figure 4-1) and hypothetical depth of the usable aquifer, estimates of hypothetical total water in storage, and usable storage capacity, estimates of basin firm yield can be made. As shown, the hypothetical yield of the non-developed basins is quite low, from 40 to 120 A-F/year.

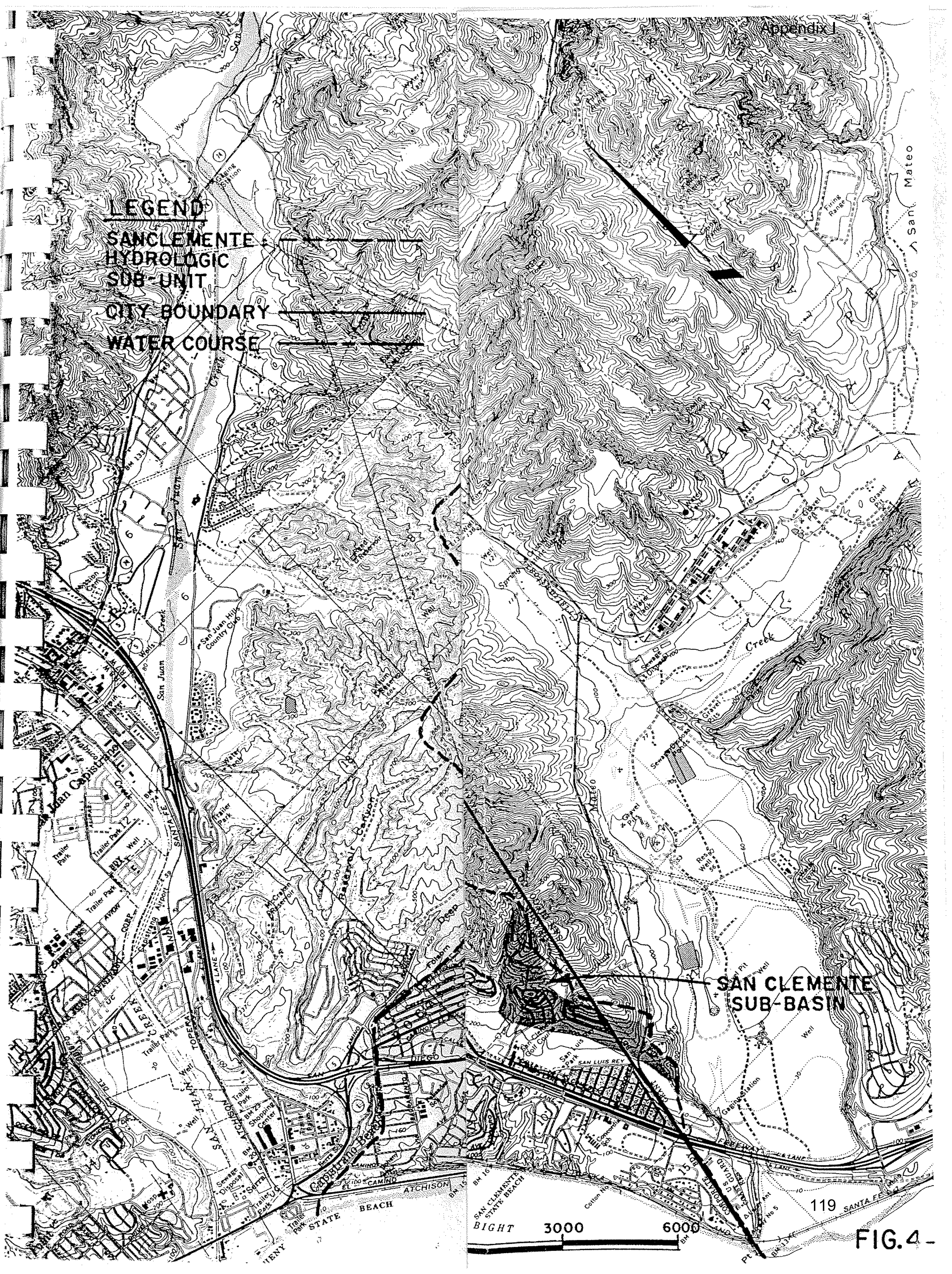
LEGEND
SANCLEMENTE HYDROLOGIC SUB-UNIT
CITY BOUNDARY
WATER COURSE
SAN CLEMENTE SUB-BASIN
3000
6000
San Juan Capistrano
San Juan Creek
Trabuco Creek
San Juan Hills Country Club
Mateo
San Mateo
Creek
SAN CLEMENTE STATE BEACH
STATE BEACH
ATCHISON
SANTA FE
FREEWAY
BIGHT

FIG.4-

The analysis of geohydrologic characteristics of the San Clemente subbasin results in an estimate of only 400 A-F/year for firm yield. However, historical extractions have been in the 900- to 1,100-A-F/year range. It appears that factors other than localized geohydrology must be considered in determining San Clemente subbasin yield.

Previous studies(4) have suggested the possibility of lateral underflow from the San Mateo subunit into the San Clemente subunit. DWR(7) prepared a geologic cross-section of the adjoining basins and, based on very limited available data, verified the possibility of this underflow. Other studies(11) have estimated the San Mateo basin subsurface outflow at 500 A-F/year. This rate could account for the difference between the historic extraction rates and the yield estimates considering geohydrologic factors only within the limits of the defined San Clemente subbasin.

The most refined method for calculating firm yield of a groundwater basin is the mass balance method. This requires estimates of hydrologic basin inputs (surface inflow, subsurface inflow, return flows, and artificial recharge where pertinent) and outputs (surface outflow, subsurface outflow, groundwater extractions, evaporation, and transpiration). By comparing this hydrologic balance with long-term change in basin storage volumes, the basin firm yield can be estimated. Unfortunately, there is insufficient data on the San Clemente basin hydrologic components to make such an estimate.

Another method for estimating firm groundwater yield is one in which annual pumping rates are plotted against annual change of water levels or storage volume. The annual draft which relates to average pumping water levels or produces no change in storage volume is the firm yield. A modification of this method was also used to estimate the San Clemente subbasin yield. Figure 2-2 is a plot of the available data simultaneously measuring pumping rates and water levels. As shown, most pumping levels for Well 6 during the period 1959-69 are in a band between -85 MSL and -103 MSL. The average pumping rate at the midpoint of this band (assumed point of no change in storage) is approximately 525 A-F/year for Well 6. This rate is very close to the average Well 6 production rate during 1959-70, when total basin production averaged 1,100 A-F/year. It can be hypothesized that, utilizing sound basin management practices, as much as 1,100 A-F/year could be safely extracted from the San Clemente subbasin on a long-term basis.

The above attempts at projecting the San Clemente subbasin firm yield are summarized in Table 4-2.

TABLE 4-2

Summary of Groundwater Yield Estimates

Estimating Method	Hypothetical Firm Yield (A-F/year)
Geohydrologic Characteristics	900(a)
Groundwater Extractions	900 to 1,100
Hydrologic Balance	(b)
Pumping/Storage Interrelationship	1,100
Range	900 to 1,100

(a) Includes 400 A-F/year within subbasin and hypothetical 500 A-F/year lateral underflow from San Mateo subunit.

(b) Insufficient historic data.

San Mateo Subunit

A hydrologic balance inventory was conducted in previous studies(11) for the San Mateo basin on Camp Pendleton. The results of the inventory could be construed to relate to a basin-wide firm yield of approximately 2,000 A-F/year; extractions were estimated at 1,850 A-F/year. It appears that the San Mateo basin is not presently overdrafted, but unused capacity is nominal.

CHAPTER 5

GROUNDWATER DEVELOPMENT POTENTIAL

Discussion in Chapter 5 includes evaluation of groundwater development potential for firm groundwater supply, imported water storage, and conjunctive operations, in addition to treatment requirements, facilities improvements, and special funding sources.

FIRM GROUNDWATER SUPPLY

San Clemente Subunit

From the analysis in Chapter 4, it appears that 900 to 1,100 AF/YR can be consistently produced from the San Clemente subbasin without adverse effect. Continuous use of this source of supply to supplement imported water deliveries to the City will necessitate improvements to the existing facilities, continuation of treatment for removal of iron and manganese to meet water quality standards, tests to verify the yield, additional water quality analyses and improvement in record-keeping.

The undeveloped groundwater basins in the Secunda Deschecha Canada should not be considered for development as sources of firm yield. The potential yield from the lower zone is very small, and its close proximity to the shoreline would make seawater intrusion control very difficult. The potential yield from the upper zone is small, development would require

construction of extensive transmission facilities, and water quality would probably be marginal.

Although the potential yield from the undeveloped Prima Deschecha Canada basin is not large, sufficient storage volume exists to consider developing its firm yield. This would require field investigations and construction of a test well to verify yield, quality, and development potential.

San Mateo Subunit

Evaluation was made of the potential to further develop the San Mateo basin as supplemental yield for a City backcountry supply. However, the analysis in Chapter 4 indicates that there is little excess capacity between the basin yield and current extractions by the Marine Corps and the City (indirectly through subsurface underflow). Significant development of the groundwater in the Christianos subbasin of the San Mateo basin would have a negative effect on the current San Clemente subbasin withdrawals, due to a probable reduction in underflow. Such withdrawals might also trigger a water rights dispute between the City and the Marine Corps, particularly if water levels fell and the basin firm yield was exceeded. Further development of groundwater in the San Mateo basin by the City is not recommended.

IMPORTED WATER STORAGE

As increasing needs for imported water for the City and other area purveyors approach the capacity rights of transmission facilities, it may be beneficial for the City to divert imported water to groundwater storage during offpeak periods. Such action

would result in an ideal reserve supply, especially during drought or peak demand periods. It may be possible to provide such storage in the Prima Deschecha Canada basin. Utilization of this supply source would require diversion of additional quantities from the Tri-Cities Municipal Water District pipeline near Avenida Vaquero, transmission and recharge facilities, extraction wells in the Prima Deschecha Canada, and distribution pipelines to intertie with the existing system. Further testing and investigation is required to verify the potential for imported water storage in the Prima Deschecha Canada and the effects on groundwater and environmental conditions in the area. Imported water storage in other groundwater basins in the San Clemente subunit does not appear to be feasible.

CONJUNCTIVE OPERATIONS

A plan of conjunctive use operation of a groundwater basin with imported sources of supply is one in which the groundwater basin may be mined during periods of deficient water supply. When imported supplies return to normal, pumping of groundwater would be curtailed or ceased, allowing the groundwater reservoir to be restored by natural replenishment. Development of such a conjunctive use plan for San Clemente would involve consideration of (1) volume of water in storage that is economically available, (2) probable duration of a critical drought period, (3) ability of the basin to be restored by natural recharge during a subsequent period of surplus supply, (4) pumping pattern required to develop the mining yield, (5) pumping rates required, (6) economics of having standby wells which would be used only

during periods of the mining operations, and (7) effects of significantly variable groundwater levels on local conditions, especially in the area of landslide potential.

A conjunctive operation in the San Clemente subbasin would also be difficult because of the following factors:

1. Constrained by the limited usable storage capacity.
2. Threat of seawater intrusion.
3. Landslides in the area.
4. Approval by other agencies, including MWD, MWDOC, Tri-Cities MWD, and possibly the Marine Corps.

Conjunctive operations in the San Clemente subbasin cannot be recommended at this time. Should imported water storage prove to be feasible in the Prima Deschecha Canada, then conjunctive operations there could be investigated.

TREATMENT REQUIREMENTS

Excessive iron and manganese concentrations will probably continue to occur in San Clemente groundwaters under variable concentrations. The treatment process utilized at WTP 2 is effective at iron and manganese removal and should be continued. Groundwater development and treatment for iron and manganese removal remains more cost effective than increased imported water purchases.

COST-EFFECTIVENESS

Hypothetical unit costs to extract and remove iron and manganese from San Clemente groundwater are presented in Table 5-1, and amount to a total of $175 per acre-foot. The 1986-87 MWD-adopted rate for treated, non-interruptible water is $230 per acre-foot, and this value is expected to increase to $300 per acre-foot or more progressively over the next 4 - 5 years. Since projected groundwater production costs should generally keep pace with inflationary trends, groundwater clearly remains more cost-effective than increased imported water purchases.

TABLE 5-1

Hypothetical Groundwater Production Costs

Item	$/AF Extraction (c)	Treatment (d)	Total
Fixed Costs (a)	32	42	74
Variable Costs (b)	86	15	101
Total Production Costs	118	57	175

(a) Includes capital recovery and land.

(b) Includes operation and maintenance, energy, and chemical costs as appropriate.

(c) Source: Orange County Water District 1985-86 Engineers Report.

(d) Based on the Filtronics process for iron and manganese removal.

SPECIAL FUNDING SOURCES

Passage of the State Water Conservation and Water Quality Bond Law of 1986 (Proposition 44 on the June 1986 ballot) provides for $75 million to DWR low-interest loans for water conservation and groundwater recharge projects. Criteria used in selecting recharge projects will be:

1. Whether or not the project is in an overdrafted basin.
2. Critical need.
3. Engineering and hydrogeologic feasibility.
4. Economic justification.
5. Existing water management programs.

These criteria can be met for the management program discussed herein, with the exception of not being in an overdrafted basin. Notwithstanding that, it is recommended that the City apply for such loans.

CHAPTER 6

GROUNDWATER DEVELOPMENT PROGRAM

RECOMMENDATIONS

The following action is recommended regarding San Clemente groundwater development:

I. Supply/Groundwater Development

A. Institute policy of groundwater production from San Clemente subbasin utilizing firm yield of 900 to 1,100 AF/YR.

B. Investigate feasibility of imported water storage in Prima Deschecha Canada; institute field studies and construct test well.

C. Postpone further development of San Mateo basin groundwater.

D. Consider future conjunctive operations only in Prima Deschecha Canada.

II. Facilities Renovation

A. Institute policy of using two continuous supply wells with one well in reserve.

B. Reactivate Well 5 under controlled pumping conditions; conduct pump test, with temporary discharge connection to storm drain; monitor groundwater quality; use as interim golf

course supply during water reclamation plant expansion.

C. Renovate Well 6 and restore to service; conduct pump test.

D. Maintain Well 3 on reserve status.

E. Monitor controlled production of Wells 5 and 6, and if necessary, drill a replacement well for Well 4 using state-of-the-art techniques.

F. Reactivate WTP 2 (serving Well 6); maintain WTP 1 (Well 3) on reserve status.

G. Inspect transmission main between Well 6 and WTP 2 for corrosion potential, and replace if necessary.

III. Operations

A. Develop improved monitoring and record-keeping system.

B. Monitor all pertinent groundwater conditions simultaneously, e.g., drawdown, pumping rate, and water quality levels, in order to strengthen groundwater conditions data base.

C. Apply for low-interest loan from DWR for groundwater recharge project.

D. Expand water quality sampling and analysis program to include other contaminants.

E. Prepare addendum to Water System Operations Manual covering groundwater supply and treatment systems.

FUTURE INVESTIGATIONS

The following in-depth analyses for groundwater management in San Clemente are recommended:

1. Detailed geohydrologic investigation to verify precise yield of San Clemente subbasin.

2. Feasibility study of potential imported water storage in Prima Deschecha Canada for seasonal peaking.

3. Field investigation and test well construction in Prima Deschecha Canada.

4. Predesign studies for reactivation/renovation of Wells 5 and 6, including pump tests and transmission main replacement.

5. Predesign study for reactivation of WTP 2.

6. Development of groundwater monitoring program.

7. Development of groundwater record-keeping system.

8. Application package for DWR groundwater recharge loan program.

APPENDIX A

REFERENCES

1. E.E. MacKnight; Investigation of Area in "San Clemente" City Limits for Future Water Supplies; November 1950.

2. E.R. Ayer, City Engineer; Report on Present Status of City Water Wells; Memo to D. L. Evans, City Manager; December 3, 1958.

3. Plan for Ultimate Water Supply for San Clemente; 8-page narrative, author unknown; 1959.

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8. California Department of Water Resources; California's Groundwater: Bulletin 118; 1975.

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10. Edgington, W.J.; Geology of the Dana Point Quadrangle, Orange County, CA; California Division of Mines and Geology; Special Report 109.

11. Everest, W.R., Lake, C.W., and Richardson, T.G.,; Groundwater Basin Hydrologic and Water Quality Study for Marine Corps Base - Camp Pendleton, CA; Report to Naval Facilities Engineering Command - Western Division by PRC Engineering; October 1983.

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14. Lowry and Associates; City of San Clemente Water Master Plan; June 1982.

15. California Department of Water Resources; San Juan Creek Groundwater Resources; Bulletin 104-7.

16. J.W. Williams; Gobornidor Basin Test Well; Orange County Environmental Management Agency.

17. Boyle Engineering Corporation; City of San Clemente Water System Operations Manual; September 1986.

APPENDIX B

Summary of Available City Data

File Number		Title of File	Description
1		Well History	A comprehensive report of well history and the water basin including the History Of The Water Basin, General Description Of The Wells, Actions By The City Council Regarding The Water Problem, Need For A Plan Providing A Supplementary Water Supply, and Proposed Plan For Supplementary Supply. (approximately 1962)
2	9.25	Well # 5 Work File	Includes San Clemente's Well Tests performed on January 31, 1986. and previous water tests; and also includes various descriptions of well apparatus.
3	9.20	Wells-Miscellaneous	Miscellaneous well information well pump data, well elevations, water system data sheet as of June 10, 1958, and a map showing well locations.
4		Well # 3	Technical information for well # 3.
5	9.21	Well # 1	Includes a report titled Present Status of Wells dated December 3, 1958, and Water Well Analysis for wells 2 through 6 for 1958-60.
6	9.23	Well # 3	Identical water well analysis for 1958-60, Water Well report dated November 5,1962 for wells 2,3,4,6,and Califia, and January-February 1980 drawdown information.
7	9.22	Well # 2	Includes the identical water well information as files 5 and 6 (which includes the December 3, 1958 report, the november 5, 1962 report, and the 1958-60 water well analysis).
8	9.24	Well # 4	Includes the identical water well information as in file 7 and the March 17, 1958 Specifications and Bid for the Rehibilitation of Well Number 4.
9	9.26	Well # 6	Work file with various correspondences (late 50's to early 60's) Also included is the identical well information as in file 7.
10		Lab reports # 3 Well	Lab reports for well # 3. Reports taken in 1974 through 1976.
11		Performance Tests # 4 Well	1977 Performance Tests for Well # 4.
12		# 4 & 6 Filtration Operations	1977 Filtration Tests for Wells # 4 and # 6.
13		Lab reports # 6 Well	Lab reports for well # 6. Reports taken in 1972 through 1976.
14		# 6 Well Operations	1977 Through 1979 Well # 6 Operations.
15		# 6 Performance Tests	Well # 6 1977 Performance Tests.
16		# 3 Performance Tests	Well # 3 1977 Performance Tests.
17		# 3 Well Operations	1977 Through 1979 Well # 3 Operations.
18		Well Contaminants Data	Various well Contaminants data taken in 1984 for wells 3 and 6. (see attached for description of data)

Summary of Available City Data (continued)

File Number	Title of File	Description
19	Well Photologs	Various well photologs.
20	-	Investigation of Area In "San Clemente" City Limits For Future Water Supplies; E.E. Mac Knight; November 1950.
21	-	Report on Present Status of City Water Wells; Memo from the City Engineer to City Manager; December 3, 1958.
22	-	Excerts fore technical study on ground water basin; November 5, 1962; Author unknown.
23	-	Daily well extraction data, pumping rates and drawdown information from 1957 to 1977. Monthly summaries for the basin are included in the 1959-1970 reports. The summaries include monthly totals of hours run, cubic feet pumped, and calculated gallons per minute for each well pumped. The drawdown information is also included in the monthly summaries.

CITY OF SAN CLEMENTE

Groundwater Management Study

SCOPE OF WORK

Task 1	Meet with City representatives to discuss available data and goals for the project
Task 2	Review City data on groundwater basin conditions, extraction records, and water quality levels
Task 3	Gather and review information by others concerning groundwater conditions and potential development within City of San Clemente (USGS, DOD, DWR)
Task 4	Based on known geohydrologic data, estimate range of potential yield of groundwater basins within existing City's sphere of influence (Christianos Basin, coastal basins)
Task 5	Conduct field investigations and determine condition of groundwater pumping, distribution and treatment facilities
Task 6	Based on known geohydrologic conditions, determine groundwater development potential for the following:

a. Firm supply of water to supplement imported water delivery to City

b. Off-peak storage of imported water (firm and interruptible supplies)

c. Conjunctive utilization of imported and groundwater supplies (supplemental yield)

d. Cost-effectiveness of groundwater treatment

Task 7	Outline institutional issues regarding groundwater basin development, e.g., allocated water rights, state funding
Task 8	Prepare documentation report including all available data and recommended plan for City development of groundwater
Task 9	Prepare outline of work plan for indepth analysis of groundwater supply, e.g., mathematical model, precise yield study, detailed cost effectiveness of developed supplies

Appendix C

Calculation of Dry Year Demands

Demand "Bump" Factors for 2010 UWMP
Description of Methodology

Water agencies must develop estimates of the impacts of single dry years (Single-Dry) and multiple consecutive dry years (Multiple-Dry) on both supplies and demands in future years. In these cases, demands increase somewhat above the normal or average level. The increase can be expressed as a percent "bump" up from the normal level. For example, if dry year demand was 105 percent of normal, this would be a 5% "bump". As the methodology to estimate the Single-Dry and Multiple-Dry "bumps" was developed, several issues needed to be decided, as follows:

1. The methodology used existing data from MWDOC records for each agency, to allow the estimates to reflect the characteristics and differences of demands relative to the makeup of each retail entity. The overall MWDOC estimate was developed from a weighted sum of all of OC's agencies.

2. Total potable demands, including agricultural demands, were used to derive the "bumps" because Orange County agencies have opted to have water that is used for agricultural uses be considered as full service demands. Non-potable demands are included; these demands will be met with non-potable supplies.

3. The methodology focused on per-capita usage (in units of AF/capita) because this removes the influence of growth from the analysis. Overall population growth in Orange County has been about 1% per year over the past two decades, creating about a 20% increase in demand over two decades. Some of the agencies have had even higher growth.

4. The period that was used for the analysis was limited to FY 1992-93 thru FY 2008-09 because fiscal years 1991-92 and 2009-10 were years of extraordinary conservation-- pricing disincentives for using over the allocated amounts were implemented in order to curtail demands-- and so these years were not considered. The Orange County total per-capita water usage in the period FY 1992-93 thru FY 2008-09 is plotted in Figure 1. Per-capita water use in Orange County has been on a decreasing trend in recent years as shown by the trend line in Figure 1. The downward trend is likely due to water use efficiency efforts, principally the plumbing codes since 1992 that have required low-flush toilets in all new construction and prohibited the sale of high-flush toilets for replacement purposes. Because of this drop in per-capita usage over time, the more recent data is a better predictor of future usage than the earlier data. Therefore, we narrowed the focus to the period FY 2001-02 thru FY 2008-09.

5. **Single-Dry "Bump" Methodology:** Per-capita usage for each participant agency from FY 2001-02 thru FY 2008-09 is shown in Table 1. The Single-Dry Bump for each agency was derived using the highest per-capita usage in the period, divided by average per-capita usage for that period. Because of suspect data for Fountain Valley and Santa Ana, the highest year data was eliminated and the second-highest usage in the period was used (when data was suspect, it was also removed from the average for the agency). The resulting Single-Dry "bumps" are shown in Table 2. The OC-average Single-Dry "bump" came to 6.6%

6. **Multiple-Dry "Bump" Methodology:** DWR guidelines recommend that "multiple" years is three years. There are various methods that can be used to derive demand "bumps" for those three years. The same "bump" can be used for all three years, or different "bumps" can be assumed for each of the three years. A pattern can be selected based on historical demand data or on historical water supply data or on another basis. MWDOC selected a Multiple-Dry Bump as the same as the Single-Dry Bump for each agency. This means having three highest-demand years in a row. This is conservative because it would be extremely unlikely for three driest years to occur in a row. However, it should be noted that future demand in any particular year depends on other factors in addition to rainfall, such as the economic situation, and cloudiness, windiness, etc. The OC-average Multiple-Dry "bump" came to 6.6%.

Figure 1
Per-Capita Water Use in Orange County (AF/person)

FY Ending	OC Actual AF/person	Least Sq AF/person	approx high	approx "bump"
1993	0.223327	0.233	0.250	7%
1994	0.223528	0.232		
1995	0.221986	0.230		
1996	0.235919	0.229		
1997	0.244071	0.228		
1998	0.217014	0.226		
1999	0.228797	0.225		
2000	0.242408	0.224		
2001	0.223537	0.222		
2002	0.228534	0.221		
2003	0.214602	0.219		
2004	0.222155	0.218		
2005	0.204941	0.217		
2006	0.207720	0.215		
2007	0.223599	0.214		
2008	0.211873	0.212		
2009	0.202396	0.211	0.225	7%

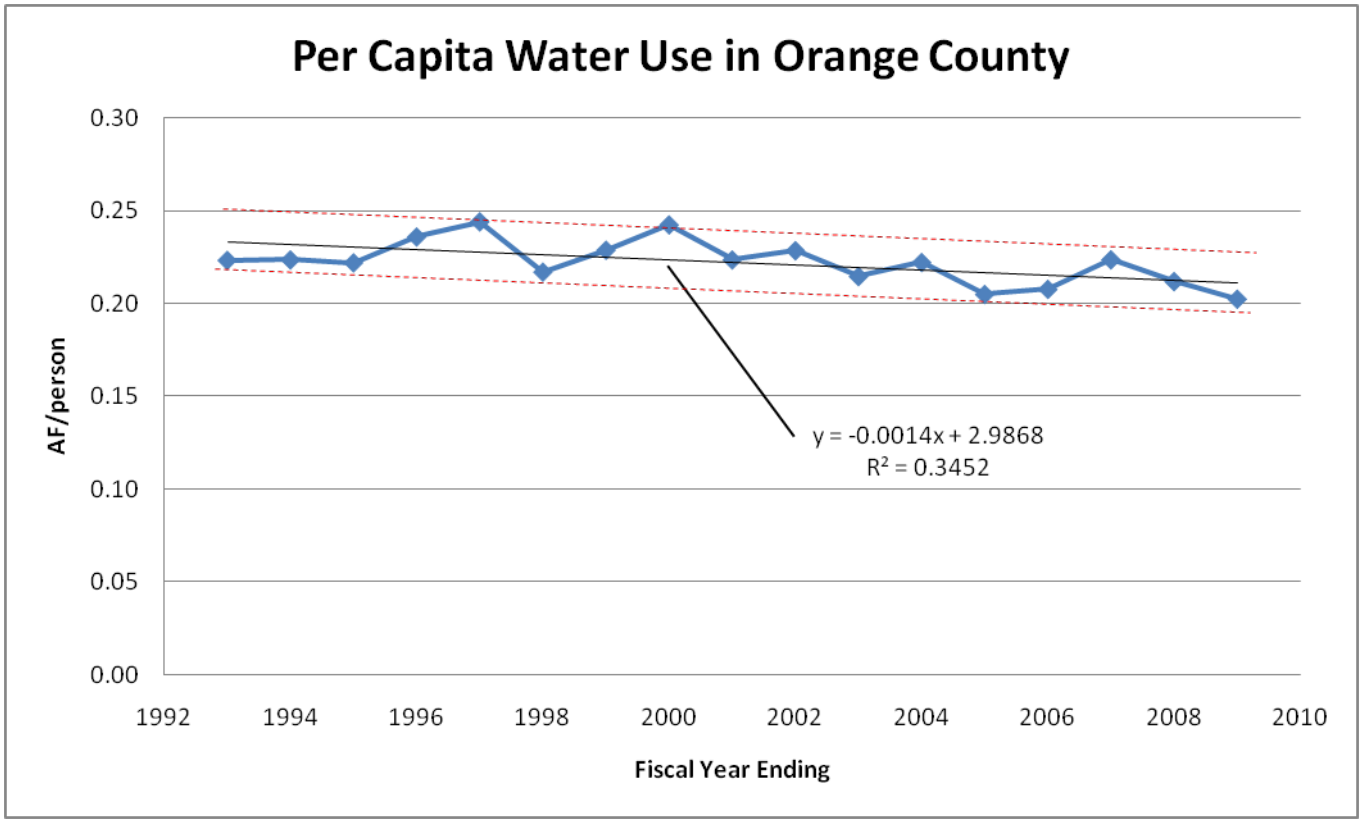


Table 1. Per-Capita Retail Water Usage by Retail Water Agency [1] [2]

Fiscal Year ->	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
				Per Capita Retail Water Usage (AF/person)				
San Clemente	0.22226	0.20529	0.20966	0.18725	0.20964	0.22448	0.21330	0.19993

[1] Retail water usage (includes recycled water and Agricultural usage) divided by population.
[2] Population is for Jan. 1 of each fiscal year ending. Source: Center for Demographic Research, CSU Fullerton.

Table 2
Demand Increase "Bump" Factors for Single Dry Years and Multiple Dry Years
for OC Water Agencies participating in MWDOC's 2010 UWMP group effort

	Single	Multiple	
San Clemente	7.4%	7.4%	
OC Average	6.6%	6.6%	weighted average of all OC water agencies

Appendix D

Ordinance No. 1487, WaterSmart SC Flyer, Door Hanger, High Use Letter, New Customer Welcome Letter, Utility Bill

Ordinance No. 1487

ORDINANCE NO. 1487

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SAN CLEMENTE, CALIFORNIA AMENDING CHAPTER 13.12 OF THE SAN CLEMENTE MUNICIPAL CODE RELATING TO WATER CONSERVATION

WHEREAS, this ordinance is enacted pursuant to Section 375 of the California Water Code and Sections 37100 and 38742 of the California Government Code; and

WHEREAS, as required by Water Code Section 375(a), a public hearing was held and this ordinance was considered for action by the City Council at a regularly scheduled and noticed meeting. The agenda was posted in accordance with Section 54950 et seq. of the California Government Code with opportunity for public review in advance of the meeting and public comment during consideration of the ordinance by the Council; and

WHEREAS, the protection, conservation, and management of local and imported water supplies is one of the main functions of the City as a domestic water purveyor. The City has the power to perform all acts necessary to carry out fully the provisions of California Water Code Section 375 to establish rules and regulations for the distribution and use of water and undertake a water conservation program to promote efficient water use and reduce water waste; and

WHEREAS, wasteful water use practices constitute a potential threat to, and an unacceptable diminution of, the City's water supplies. The prevention of water waste is an economically and environmentally feasible way to protect, conserve, and prevent unacceptable diminution of the City's water supplies; and

WHEREAS, outdoor water use is a primary source of urban runoff, which flows onto the streets, then through storm drains to the beaches and contaminates seawater. It is therefore in the public interest to promote practices that increase water use efficiency, reduce or eliminate runoff, and further support the City's Stormwater Runoff Control Ordinance (SCMC Chapter 13.40); and

WHEREAS, contamination, drought, regional water supply allocations, or failure of the water system infrastructure may lead to a potable water shortage emergency in the City's water supplies; and

WHEREAS, based upon the above findings, the Council finds that actions taken pursuant to this ordinance are categorically exempt from CEQA according to 14 California Code of Regulations Sections 15301 and 15307; and

WHEREAS, the purpose of this ordinance is to amend and restate the San Clemente Municipal Code, Chapter 13.12, to replace the previously existing provisions of Chapter 13.12 and revise the water conservation and water shortage contingency measures.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SAN CLEMENTE HEREBY ORDAINS AS FOLLOWS:

SECTION 1. The foregoing findings are true and correct and incorporated herein.

SECTION 2. Chapter 13.12 of the San Clemente Municipal Code is hereby amended and restated to read in its entirety as follows:

Chapter 13.12 WATER CONSERVATION

13.12.010 Short Title.

This chapter may be cited as the Water Conservation Ordinance.

13.12.020 Purpose.

The purpose of this chapter is to establish standards and procedures for water conservation, to promote the efficient use of water, to reduce or eliminate the waste of

water in the City, to complement the City's Stormwater Runoff Control Ordinance (SCMC Chapter 13.40), and enable implementation of the City's water shortage contingency measures.

13.12.030 Definitions.

As used in this chapter, the following terms are defined in this section:

"City" shall mean the City of San Clemente, California

"Effective Date" shall mean the date of adoption of this ordinance as provided by Water Code Section 376.

"Enforcing Attorney" shall mean the City Attorney, acting as counsel to the City of San Clemente and his/her designee, or the District Attorney, which counsel is authorized to take enforcement action as described herein. For purposes of criminal prosecution, only the District Attorney and/or the City Attorney, or his/her designee, shall act as the Enforcing Attorney.

"Evapotranspiration (ET)" shall mean the sum of water losses through evaporation from the soil and transpiration from the plant. Irrigation water replaces the water lost by plants through evapotranspiration.

"Hearing Officer" shall mean the City Manager or his/her designee.

"Impervious surface" shall mean a constructed or modified surface that cannot effectively infiltrate rainfall. The term includes, but is not limited to, sidewalks, driveways, v-ditches, gutters and roadways.

"Landscape Coefficient" shall mean the ratio of Evapotranspiration (ET) demand a landscape has in comparison to reference turf-grass and is used to estimate the water needs of landscape plantings. Landscape coefficient near a value of one indicates greater water needs than lower landscape coefficient values. Consult the following guide for water use estimates of common landscaping plants at www.owue.water.ca.gov/docs/wucols00.pdf. Typical landscape coefficients for common landscapes include:

- Low water use plants (California natives) = 0.0 to 0.3 landscape coefficient
- Medium water use plants (California Friendly) = 0.4 to 0.6 landscape coefficient
- High water use plants (annuals and turf) = 0.7 to 1.0 landscape coefficient

- Warm season turf (Zoysia, St. Augustine) = 0.6 to 0.7 landscape coefficient
- Cool season turf (Fescue, Rye)= 0.8 to 0.9 landscape coefficient

"Major Water Users" shall mean those customers within any specific customer classification which use or consume more than the mathematical average use for that classification during a given time period. At the discretion of the City Manager, and based on the severity of shortage, this definition may be expanded to include all residential customers using more than 9 CCF of water per month.

"Person" shall mean any natural person, corporation, partnership, government entity or subdivision, trust, estate, cooperative association, joint venture, business entity, or other similar entity, or the agent, employee or representative of any of the above.

"Plant Factor" shall mean the ratio of Evapotranspiration (ET) demand a particular plant species has in comparison to reference turf-grass. Consult www.cimis.ca.gov for more information regarding ET. Also see "Landscape Coefficient."

"Properly programmed" shall refer to a weather-based or sensor-based irrigation controller that has been programmed according to the manufacturer's instructions and site-specific conditions.

"Quasi-Public Entity" shall mean an entity, other than a governmental agency, whether characterized by statute as a public corporation, public instrumentality, or otherwise, that is expressly created by statute for the purpose of administration of a state or local function.

"Sensor-based irrigation controller" shall mean an irrigation controller that operates based on input received from any combination of sensors, such as rain, solar radiation, and soil moisture sensor, installed within and/or around the irrigated landscape area.

"Single-Pass Cooling System" refers to an air conditioning, refrigeration, or other cooling system that removes heat by transferring it to a supply of clean water and dumping the water down the drain – after a single use or cycle. This type of cooling system is extremely inefficient compared to systems that re-circulate the water.

"Stormwater drainage system" shall mean street gutter, channel, storm drain, constructed drain, lined diversion structure, wash area, inlet, outlet, or other

facility which is a part of or tributary to the county-wide stormwater runoff system and owned, operated, maintained, or controlled by County of Orange, the Orange County Flood Control District, or any co-permittee city, and used for the purpose of collecting, storing, transporting, or disposing of stormwater.

"Urban runoff" shall mean all flows in the stormwater drainage system and consists of stormwater and non-stormwater flows.

"Weather-based irrigation controller" shall mean an irrigation controller that operates based on evapotranspiration rates and historic or real-time weather data.

13.12.040 Application.

A. This chapter shall apply within the City, and compliance with the provisions of this chapter shall be a condition of water service within the City.

B. The City shall work cooperatively with the Municipal Water District of Orange County and other federal, state, regional, and local agencies to facilitate the adoption of ordinances and regulations to conserve water.

13.12.050 Mandatory restrictions on water waste.

The following activities or measures are in effect year-round, regardless of whether or not a water supply shortage level has been declared. During water supply shortage levels, additional and more restrictive measures may be put in place, which are described in section 13.12.060.

A. Repair of Plumbing, Sprinkler and Irrigation System. Any owner, manager, or person responsible for the day-to-day operation of any premises shall, within seventy-two (72) hours after such person first learns of leaks, breaks, or defects, initiate steps to repair any leaking, broken, or defective water pipes, faucets, plumbing fixtures, other water service appliances, sprinklers, watering or irrigation systems, or distribution systems which cause or may cause water waste shall thereafter diligently and promptly pursue such repair work to completion, unless a variance is obtained from the City.

B. Watering/Irrigation.

1. No person shall water his or her lawn or landscaping to be watered between the hours of nine (9:00) AM and six (6:00) PM, except as provided below:

a. Persons may operate the irrigation system between the hours of 9:00 AM and 6:00 PM for the purpose of installing, repairing, or routine maintenance of the same, provided the system is being operated by an irrigation systems maintenance person.

b. Persons may water between the hours of 9:00 AM and 6:00 PM using any of the following methods:

i. properly programmed weather-based and/or sensor-based irrigation controllers;
ii. drip, bubbler, or soaker irrigation;
iii. by hand, using a bucket; and/or
iv. by hand, using a hose with an automatic shutoff nozzle; and/or
v. if using recycled water.

2. No person shall allow grass, lawns, groundcover, shrubbery, and open ground to be watered at any time while it is raining. Effective July 1, 2010, all irrigation controllers associated with dedicated irrigation meters shall have a rain shutoff device incorporated into the irrigation system which overrides the program in the event of rainfall. Rain sensors east of I-5 shall set the sensor sensitivity to 1/8 of an inch while sensors west of I-5 can set the sensor sensitivity to 1/4 of an inch to avoid having fog interrupt irrigation schedules.

3. Every person shall operate his or her landscape irrigation system(s) to minimize overspray and/or excess runoff onto impervious surfaces (such as sidewalks, driveways, v-ditches, gutters and roadways).

C. City Medians and Parkways. The City shall no longer install turf on medians, parkways, island dividers, or on other non-recreational areas for any new, rehabilitated, or re-landscaped City project.

D. Washing of Vehicles. No person shall use a water hose to wash any car, truck, boat, trailer, bus, recreational vehicle, camper, aircraft, tractor, or any other vehicle, or any portion thereof, unless the hose is equipped with an automatic shutoff nozzle. Except for individual residential vehicle washing, all wash water from vehicle washing/cleaning activity must be prevented from discharging to the stormwater drainage system.

E. Commercial Car Washes.

1. Commercial car wash facilities shall not permit the washing of any boat or vehicle in such facility or on its premises, other than by the following methods:

   a. use of mechanical automatic car wash facilities utilizing water recycling equipment;

   b. use of a hose that operates on a timer for limited time periods and shuts off automatically at the expiration of the time period;

   c. use of a hose equipped with an automatic shutoff nozzle; and/or

   d. use of bucket and hand washing.

2. All wash/rinse water must be captured and recycled or discharged into the sanitary sewer system.

3. All new commercial car wash facilities shall be equipped with a water recycling system.

F. Washing of Equipment and Machinery. No person shall use a water hose to wash any type of equipment or machinery, or any portion thereof, unless the hose is equipped with an automatic shutoff nozzle. All wash water from such washing/cleaning activity must be prevented from discharging to the stormwater drainage system.

G. Cleaning of Structures. No person shall use water through a hose to clean the exterior of any building or structure unless such hose is equipped with a shutoff nozzle. All wash water from such activity must be prevented from discharging to the stormwater drainage system.

H. Cleaning of Surfaces. Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patio, and or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with an automatic shutoff nozzle, or a low-volume, high-pressure cleaning machine.

Such water-using cleaning must comply with the City's Stormwater Runoff Control Ordinance and must be prevented from discharging into the stormwater drainage system. General maintenance cleaning shall be performed by other means such as by using a broom.

I. Swimming Pools and Spas. No person shall empty and refill a swimming pool or spa except to prevent or repair structural damage or to comply with public health regulations. Discharge of pool water, other than directly to the sanitary sewer system, shall be consistent with San Clemente Municipal Code Chapter 13.40 Stormwater Runoff Control. Discharge of pool filter backwash water to the stormwater drainage system is prohibited. All pools and spas shall be equipped with a water recirculation device. The use of a pool/spa cover is encouraged to prevent evaporative water loss.

J. Fountains, Decorative Basins, Ponds, Waterways. No person shall use water to operate or maintain levels in decorative fountains, basins, ponds, and waterways unless a recirculation device is in use. Discharge of water, other than directly to the sanitary sewer system, shall be consistent with San Clemente Municipal Code Chapter 13.40 Stormwater Runoff Control. Discharge of filter backwash water to the stormwater drainage system is prohibited.

K. Cooling Systems. Buildings requesting new water service or being remodeled are prohibited from installing single-pass cooling systems.

L. Commercial Laundry Facilities, Laundromats, and Common Area Laundry Rooms. New commercial laundry facilities shall be equipped with a water reclamation system for reuse of rinse water. Laundromats and common area laundry rooms shall install high efficiency clothes washing machines as older machines are replaced.

M. Commercial Lodging Establishments. Hotels, motels, and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments must prominently display notice of this option in each bathroom using clear and easily understood language(s). The City may make available such notices to commercial lodging establishments.

N. Visitor-Serving Facilities. The owner and manager of each hotel, motel, restaurant, and other visitor-serving facility shall ensure that such facility displays, in places visible to all customers, placards or decals approved by the City promoting public awareness of the need for water conservation and/or advising the public that waste of water is prohibited.

O. Food & Beverage Service Facilities.

1. Food and beverage service facilities in the City shall not serve water to customers or patrons, except upon request of the customer or patron.

2. All commercial kitchens with existing pre-rinse spray nozzles shall be retrofitted to models using 1.6 gallons per minute or less, by July 1, 2010. New kitchen pre-rinse spray nozzles must use 1.6 gallons per minute or less.

3. Defrosting food with running water shall be avoided and discouraged.

4. If using a hose for wash-down of kitchens, garbage areas, or any other area required by the health department or for sanitation reasons, it shall have a positive shut off nozzle attached.

5. Scoop sinks shall be set at minimum flow at all times, and during hours of operation carefully monitored to avoid using water unnecessarily when the scoop sink is not in active use.

6. New or Remodeled kitchens. All other water using equipment in new or remodeled kitchens shall use the best available water conserving technology.

P. Public and Quasi-Public Entities. All public and quasi-public entities shall display, in visible locations in all restrooms, kitchens, and dining areas, placards or decals approved by the City promoting public awareness of the need for water conservation and/or advising the public that waste of water is prohibited. Placement of placards or decals by a quasi-public entity of a type not specifically mentioned in this chapter shall not be required unless the City Utilities Manager gives written notice to the entity that this chapter is applicable to the entity so notified and that placement of placards or decals is required.

Q. Construction.

1. No potable water may be used for compacting or dust control purposes in construction activities where there is a reasonably available source of

recycled or other non-potable water approved by the California State Department of Health Services and appropriate for such use. This condition must be identified and specified on construction drawings submitted to the City for review.

2. All water hoses used in connection with any construction activities shall be equipped with an automatic shutoff nozzle when an automatic shutoff nozzle can be purchased or otherwise obtained for the size or type of hose in use.

R. Use of Hydrants. No person may tap into any fire hydrant for any purpose other than fire suppression or emergency aid, without first obtaining written approval from the City Utilities Manager or his/her designee.

S. Water Spillage. Every person shall minimize water spillage into streets, curbs, or gutters and minimize runoff beyond the immediate area of use. Every person is deemed to have under his/her control at all times his/her water distribution lines and facilities, and to know the manner and extent of his/her water use and excess runoff.

T. Indiscriminate Use. No person shall cause or permit the indiscriminate running of water not otherwise prohibited above which is wasteful and without reasonable purpose.

U. Water Conservation Plans. The Utilities Manager, at his/her sole discretion and by written request, will require residential, commercial, dedicated irrigation, and/or public customers using ten thousand (10,000) or more billing units per year to submit a Water Conservation Plan to the City and to submit quarterly progress reports on such plan. The conservation plan must make recommendations for increased water savings, including increased use of recycled water based on feasibility. Quarterly progress reports must include status on implementation of recommendations.

V. Public Health and Safety. These regulations shall not be construed to limit water use which is immediately necessary to protect public health or safety.

13.12.060 Water supply shortage levels and contingency measures.

The City Council by resolution is authorized to require or impose reductions in the use of water if such reductions are necessary in order for the City to comply with water use restrictions imposed by federal, state, or regional water agencies or to respond to emergency water supply shortage conditions and emergencies. Depending on the

expected duration and severity of the shortage or emergency, these measures may include, but are not limited to, some or all of the actions listed in the following four (4) levels of water shortage, which shall take effect upon declaration by the City Council. In an emergency, the City Manager or his/her designee may make the declaration, which will be ratified by the City Council at a subsequent meeting. Each elevated shortage level will include the elements of the previous shortage level(s), including the mandatory restrictions on water waste detailed in Section 13.13.050, and each elevated shortage level is intended to be more restrictive than the previous level(s).

A. Level 1 – Water Watch. This level will be declared when a water shortage of less than 10% occurs. Level 1 applies during periods when the possibility exists that the City will not be able to meet all of the demands of its customers. Level 1 may also be declared when the state or a regional supplier has recommended a reduction in water use or when normal production and supply are curtailed. During a Level 1 Water Watch, the following water shortage contingency measures take effect:

a. Leaks. All leaks shall be fixed within 48 hours once an owner/operator is made aware of a leak.
b. Staff. All City staff shall be alerted to the Level 1 conditions, supplied with educational material, and directed to actively intervene and educate the public, when excessive use and/or waste is observed.
c. Lawn Watering and Landscape Irrigation. The City shall encourage reduction in the consumption or use of City water by residential, recreational, commercial, industrial, and institutional water users for landscape irrigation purposes.
d. Residential car washing. Residents are encouraged to use a commercial facility utilizing water recycling equipment.
e. Other Actions Possible. The City may initiate or implement additional or innovative actions to increase the supply of water available to the City and to conserve the City's existing water supply.
f. Media. The declaration of this and subsequent water shortage levels shall be communicated to the media.

B. Level 2 – Water Alert. This level will be declared when a water shortage of 10-20% exists. A Level 2 Water Alert may be declared when the state or a regional water supplier has required a reduction in water use or when normal production and supply are curtailed, rationed, or allocated. Noncompliance with mandatory restrictions on water waste shall be subject to an administrative citation. During a Level 2 Water Alert, the Level 1 water shortage contingency measures shall become mandatory and the following additional water shortage contingency measures shall apply:

a. Leaks. All leaks shall be fixed within 24 hours once an owner/operator is made aware of a leak.
b. Rates and Charges. The City reserves the right to adjust and/or implement tier allocations for all water connections and accounts commensurate to the water supply shortage level. The City may also charge an additional water surcharge above and beyond the existing City water rates to be imposed on those customers who fail or refuse to abide by the requirements, restrictions, and priorities adopted by the City in response to the water shortage condition. Water shortage rate schedules will be incorporated into Article III, Rates and Charges, of Municipal Code 13.04.
c. Staff. At the discretion of the City Manager, the City may hire, divert, or employ additional City staff and volunteers to monitor water usage, provide assistance to water users to reduce their water consumption, and monitor the enforcement of the requirements, restrictions, and priorities adopted by the City in response to the water shortage condition.
d. Landscaping. New and rehabilitated landscaping for commercial and dedicated irrigation accounts of over 1,000 square feet shall be limited to a plant palette such that the average plant factor and/or the landscape coefficient shall be less than or equal to 0.5 for all new landscaping. A landscape coefficient or plant factor of 0.5 comes from a mix of approximately ⅓ high, ⅓ medium, and ⅓ low water using plants. Exempt from this restriction are the following:
    i. environmental mitigation projects;
    ii. landscaping necessary for fire protection and/or soil erosion control;
    iii. plant materials identified as rare or essential to the well being of endangered/rare species; and
    iv. active recreation areas and sports fields.
e. Construction Restrictions. Water for construction will be limited to essential construction activities only. Essential construction activities include:
    i. testing fire suppression systems;
    ii. maintaining hygiene and dust control at construction sites;
    iii. interior dry wall tape texturing;
    iv. exterior masonry stucco finishing;
    v. pressure testing domestic water and sanitary waste lines; and
    vi. potable water can not be used for grading unless the Public Works Director or his/her designee determine there is adequate supply.
f. Other Prohibited Uses: The City may implement other prohibited water uses as deemed necessary, following notification of customers.

C. Level 3 – Water Warning. This level will be declared when a water shortage of 21-40% occurs. A Level 3 Water Warning may be declared when there is a critical differential between supply and demand and it is determined that demand cannot be reduced sufficiently through Level 1 and 2 measures to remain within the available supply. During a Level 3 Water Warning, administrative fines will double. The following additional water shortage contingency measures shall apply during a Level 3 Water Warning:

a. Rates and Charges. The City may further reduce tier allocations, raise rates, and increase penalty charges based on the severity of the shortage and anticipated demand at the time of declaring a Level 3 Water Warning. Water shortage rate schedules will be incorporated into Article III, Rates and Charges, of City Code 13.04.
b. Prohibition on Landscaping Requirements. No person or entity, other than the City, shall implement landscaping requirements onto another person. For example, a homeowner's association cannot require a homeowner to install turf during a Level 3 Water Shortage.
c. Dedicated Irrigation Account Landscaping Restrictions. Dedicated irrigation accounts are restricted from installing new plant material between the months of May through October on account of the amount of water required during plant establishment periods. This restriction applies to any new, rehabilitated, or re-landscaped project.
d. Turf Landscaping Restrictions. All customers are prohibited from planting and/or establishing turf. This restriction applies to any new, rehabilitated, or re-landscaped project.
e. Charity Car Wash Restrictions. Non-Profit and Charity car washes are prohibited.
f. No Hosing or Washing Down of Structures and Surfaces. It is prohibited to use a hose or wash down clean the exterior of any building or structure as well as impervious hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios, and alleys.
g. No Filling or Refilling Residential Pools and Spas. Filling residential pools and spas is prohibited. An exemption to this prohibition is that pools and spas can be topped off if less than one inch of water is added.
h. No Filling or Refilling Fountains, Decorative Basins, Ponds, Waterways. Filling and refilling fountains, decorative basins, ponds, and waterways is prohibited. Exempt are ponds that sustain aquatic life – provided such life is of significant value and was actively managed in the water feature prior to declaration of any water shortage stage.

i. Construction Restrictions. Will-Serve letters shall not be issued. The City will only issue will-serve letters for the following cases:
    i. projects necessary to protect public health, safety, and welfare;
    ii. projects that have a valid, unexpired City building permit; and
    iii. projects in which the City Council deems the proposed project or development as having an overwhelming public benefit.

D. Level 4 – Water Emergency. This level will be declared when a water shortage of greater than 40% occurs. A Level 4 Water Emergency may be declared when the state or a regional supplier has required a significant reduction in water use, or when normal production and supply are curtailed or interrupted. All measures necessary to meet basic health and safety needs shall be undertaken, while all other water uses shall be reduced or prohibited. During a Level 4 Water Emergency, administrative fines will triple. The following additional water shortage contingency measures shall apply during a Level 4 Water Emergency:

a. Water Rates & Tier Allocations. Water use allocations at the Tier 1 rate will be reduced to a level deemed appropriate for the level of emergency. The City may also further adjust tier allocations, water rates, and water surcharges in response to the Level 4 Water Emergency. Water shortage rate schedules will be incorporated into Article III, Rates and Charges, of Municipal Code 13.04.
b. Lawn Watering and Irrigation. All outdoor irrigation is prohibited or curtailed as determined by the City Council. Dedicated irrigation accounts may be turned off. At the discretion of the Utilities Manager, exemptions may be provided for sports fields and golf courses.
c. No Hosing or Washing Down of Vehicles: Washing of autos, trucks, trailers, boats, airplanes and other types of mobile equipment is prohibited, other than at a commercial car wash. Exempt from this provision is the washing down of boats and RVs.
d. Construction Restrictions. Potable water use for construction-related activities is prohibited or curtailed as determined by the City Council, including in-fill construction.
e. Discontinue Service. Per Water Code Section 356, the City, in its sole discretion, may discontinue service to customers who willfully violate the restrictions set forth during a Level 4 Water Emergency.

E. Exemptions. Unless otherwise noted, the following activities or water uses are exempt from the water shortage contingency measures addressed in Section 13.12.060:

a. water use necessary to protect public health and safety or for essential government services; and

b. recycled water use for irrigation, car washing, or indoor industrial use.

F. Hardship Waiver. If, due to unique circumstances, a specific requirement of this Ordinance would result in undue hardship to a person using water or to property upon which water is used that is disproportionate to the impacts to water users generally or to similar property or classes of water users, then the person may apply for a waiver to the requirements as detailed in Section 13.12.060.

a. Written Finding: Application for a waiver must be on a form prescribed by the City and accompanied by a non-refundable processing fee in an amount set by the City.
b. Supporting Documentation. The application must be accompanied by photographs, maps, drawings, and other pertinent information, including a written statement of the applicant.
c. Required Findings for Waivers. Based on the information and supporting documents provided in the application and the water use history for the property as shown by the records of the Utilities Division, the Public Works Director, or his/her designee, in making the waiver determination shall take into consideration the following:
    i. that the waiver does not constitute a grant of special privilege inconsistent with the limitations upon other residents and businesses;
    ii. that because of special circumstances applicable to the property or its use, the strict application of this Ordinance would have a disproportionate impact on the property or use that exceeds the impacts to residents and businesses generally;
    iii. that the authorizing of such waiver will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the City to effectuate the purpose of this Ordinance and will not be detrimental to the public interest; and
    iv. that the condition or situation of the subject property or the intended use of the property for which the waiver is sought is not common, recurrent, or general in nature.
d. Approval Authority. The Public Works Director, or his/her designee, may approve, conditionally approve, or deny the waiver and the decision shall be final. Unless specified otherwise, at the time a waiver is approved, it shall apply to the subject property for the duration of the water supply shortage or emergency.

13.12.070 Enforcement and administration.

The City Manager and all officers and employees of the City shall enforce all the provisions of this chapter. The City Manager shall implement and administer this chapter. The Director of Public Works shall report to the City Council all factors which affect the implementation of this chapter and shall maintain a separate file of violations of this chapter and a file of any requests for variances from this chapter.

13.12.80 Violations, notices and remedies.

A. Notice of Noncompliance. If any person fails or refuses to comply with this Chapter, the City Utilities Manager or his/her agent shall provide that person with written notice of the violation and an opportunity to correct the noncompliance. The written notice shall:

1. be posted or presented at the site of the noncompliance;
2. state the time, date, and place of violation;
3. state a general description of the violation;
4. state the means to correct the violation;
5. state a date by which correction is required; and,
6. state the possible consequences of failing to correct the violation.

A written notice shall be mailed to the address of the violation, to the party who is billed for the water, or to the Owner of the property, as appropriate.

B. Recovery of Administrative Costs. Each person who receives a written notice of violation shall pay to the City an administrative fee of twenty-five dollars ($25.00) for the first notice and fifty dollars ($50.00) for each subsequent notice. To encourage cooperative water conservation, the City Manager or his/her designee may waive payment of the fee for the first or second notice. These fees herein constitute the reasonable cost incurred by the City in implementing the notice of violation provisions.

C. Compliance Remedies. If a person fails to correct the violation within the time specified in the written notice, the City Manager or his/her designee shall take one or more of the following actions:

1. issue a second written notice of violation;

2. refuse to initiate water service to the site of the violation, if water service has not yet begun or has been discontinued;

3. terminate water service to the site of the violation, in accordance with the City's ordinances and procedures for terminating water service;

4. abate the violation as a nuisance in accordance with Section 13.12.090 of this Chapter;

5. for residential accounts, impose a fine of not more than one hundred dollars ($100) for a first violation, two hundred dollars ($200) for a second violation, and five hundred dollars ($500) for each additional violation occurring within the calendar year; and/or

6. for commercial, industrial, and irrigation accounts, impose a fine of not more than two hundred dollars ($200) for a first violation, four hundred dollars ($400) for a second violation, and one thousand dollars ($1,000) for each additional violation occurring within the calendar year and a water waste use fee of four (4) times the regular water rate for each billing unit of water that the City estimates is wasted. The estimated water waste determination will be based on the previous year's water use during the same billing cycle.

D. Regulatory Fine Recovery. In the event that a private party action causes a regulatory agency to levy a fine against the City of San Clemente, the responsible account holder shall be required to reimburse the City for the fine and associated administrative costs.

E. Administrative Hearing for Notices of Noncompliance, Invoices for Costs and Adverse Determinations. Any person receiving a notice of noncompliance, an invoice for costs, or any person who is subject to any adverse determination made pursuant to this chapter, may appeal the matter by requesting an administrative hearing.

F. Request for Administrative Hearing. Any person appealing a notice of noncompliance, an invoice for costs or an adverse determination shall, within thirty (30) days from the date listed on the face of such notice, invoice or determination, file a written request for an administrative hearing, accompanied by an administrative hearing fee as established by separate resolution, with the Office of the City Clerk, with a copy of the request for administrative hearing mailed or personally delivered on the date of filing to the City Manager. Thereafter, a hearing on the matter shall be held before the Hearing Officer within forty-five (45) business days of the date of filing of the written request

unless, in the reasonable discretion of the Hearing Officer and pursuant to a written request by the appealing party, a continuance of the hearing is granted.

G. Hearing Proceedings. The authorized water utility staff shall appear in support of the notice, invoice for costs, or determination, and the appealing party shall be permitted to appear in support of withdrawal of the notice, determination, and invoice for costs. Each party shall have the right to present testimony and other documentary evidence as necessary for explanation of the case; however, the rules of evidence shall not apply.

H. Final Decision and Appeal. The decision of the Hearing Officer shall be issued within thirty (30) days of the conclusion of the hearing and shall be delivered by first-class mail, postage prepaid, to the appealing party. The decision of the Hearing Officer shall be final. The final decision shall include notice that any legal challenge to the final decision shall be made pursuant to the provisions of Code of Civil Procedure §§ 1094.5 and 1094.6 and shall be commenced within ninety (90) days following issuance of the final decision. The administrative hearing fee paid by a prevailing party in an appeal shall be refunded.

13.12.090 Nuisances, abatement, injunctive relief.

A. Any condition in violation of the prohibitions of this chapter shall constitute a threat to the public health, safety, and welfare, and is declared and deemed a public nuisance pursuant to Government Code § 38771.

1. Court Order to Enjoin or Abatement. At the request of the City Manager, or the person designated by the City Manager, the Enforcing Attorney may seek a court order to enjoin and/or abate the nuisance.

2. Notice to Owner and Occupant. Prior to seeking any court order to enjoin or abate a nuisance or threatened nuisance, the City Manager or the person designated by the City Manager shall provide notice of the proposed injunction or abatement to the owner and occupant, if any, of the property where the nuisance or threatened nuisance is occurring.

3. Reimbursement of Costs. All costs incurred by the City in responding to any nuisance, all administrative expenses, and all other expenses recoverable under state law, including reasonable consulting fees and attorneys fees, shall be recoverable from the

person(s) creating, causing, committing, permitting, or maintaining the nuisance.

4. Nuisance Lien. All costs shall become a lien against the property from which the nuisance emanated and a personal obligation against the owner thereof in accordance with Government Code § 38773.1 and § 38773.5. The owner of record of the property subject to any lien shall be given notice of the lien prior to recording as required by Government Code § 38773.1.

5. At the direction of the City Manager or the person designated by the City Manager the Enforcing Attorney is authorized to collect nuisance abatement costs or enforce a nuisance lien in an action brought for a money judgment or by delivery to the Orange County Assessor of a special assessment against the property in accordance with the conditions and requirements of Government Code § 38773.5. (Ord. 1277 § 1, 2003)

13.12.100 Relief from compliance.

The City Manager or his/her designee may, in writing, grant variances to persons who apply on forms supplied by the City for usages of water prohibited by Section 13.12.040 if it is found that a variance is necessary to prevent an emergency condition relating to health and safety, and if the person seeking a variance has demonstrated that he or she has implemented water conservation measures in some other manner that achieves the objectives of this Chapter. No variance may be granted for the filling of any decorative fountain, basin, pond, hot tub, spa, or permanent swimming or wading pool, unless the filling occurs as the result of performing necessary leak repairs and unless the other provisions of this Section are met. In addition, no variance shall be granted to any person unless that person has demonstrated that he or she has already achieved the maximum practical reduction in water consumption as can be achieved by the affected property or business. Any variance granted shall be based upon the water consumption rates of similar water users, properties, or businesses.

13.12.110 Voluntary water conservation plan.

A. In addition to the water conservation requirements established by this Chapter, the City Manager or his or her designee is authorized to develop and promulgate a voluntary water conservation plan which shall be directed to achieve target goals for reductions in water consumption as determined by the City Council from time to time.

B. The City may, to the extent authorized by law, elect to contract for the services of any public agency or private enterprise to carry out the planning approvals, inspections, and enforcement authorized by this chapter. (Ord. 1277 § 1, 2003)

SECTION 3. Pursuant to the authority contained in Water Code Section 376, this Ordinance shall take effect upon its adoption.

SECTION 4. Within 10 days after adoption, the City shall publish this ordinance with the names of those council members voting for and against adoption in a newspaper of general circulation that is printed, published, and circulated in the City pursuant to Government Code Section 6061.

SECTION 5. The City Clerk is authorized and directed to prepare and file a notice of exemption of this ordinance from the provisions of CEQA pursuant to Title 14, California Code of Regulations, Section 15062.

SECTION 6. Existing fees and charges in effect when this ordinance is adopted shall remain in effect unless specifically changed by this ordinance.

SECTION 7. The City of San Clemente hereby declares that should any section, paragraph, sentence, phrase, term, or word of this chapter be declared for any reason to be invalid, it is the intent of the City Council that it would have adopted all other provisions of this chapter independent of the elimination herefrom of any such portion as may be declared invalid. (Ord. 1277 § 1, 2003)

SECTION 8. Words and Phrases used in this ordinance shall be read conjunctively with and shall have the same meanings as in prior City ordinances and the City Municipal Code, unless specifically changed by this ordinance or unless the context requires some other construction. If there is any inconsistency between this ordinance and prior provisions, this ordinance shall control.

WaterSmart SC Flyer

WaterSmart SC

DO MORE WITH LESS

www.San-Clemente.org/WaterSmartSC

Water Supply Shortage: Water Alert

The City of San Clemente's water supply has been cut.

Normal Water Supply

Current Water Supply

SC Water Facts:

- San Clemente currently relies on imported water to meet 90% of water demand.
- Our imported water comes from the drought affected State Water Project (SWP) in Northern CA & the Colorado River.
- SWP supplies have been further limited due to court-ordered pumping restrictions.
- Many existing plumbing & systems are inefficient and wasting water.
- By 2016, local water supplies (groundwater, recycled water, & conservation) will comprise 25% of the total water supply.

WaterSmart San Clemente!

Comply with these Requirements

1. 

   Use your sprinklers before 9 a.m. or after 6 p.m. any day of the week; drip irrigation, hand-watering, smart timers, & repairs are exempt.

2. 

   Don't allow your irrigation water to overspray or run off your property

3. 

   Use a broom - not water - to clean driveways, sidewalks, patios, walkways, streets, or structures.

4. 

   Use water efficiently and fix all leaks immediately.

5. 

   Use a bucket of water to wash your car or a hose with an automatic shutoff nozzle; no runoff allowed.

Try These WaterSmart Tips:

Saving 5,000–50,000 gallons annually

Convert sprinklers in lawn to rotating nozzles & sprinklers in planters to drip irrigation.

Replace non-recreational turf with WaterSmart plants.

Replace old toilets & clothes washers with high-efficiency models. (EPA WaterSense & Energy Star models)

Fix leaking faucets, pipes, & sprinkler systems immediately.

Take shorter showers. Collect the warm-up water in buckets to water plants with!

WaterSmart Landscaping & Watering Guide

The following chart suggests a weekly watering schedule for spray-head irrigation, assuming clay soils common to San Clemente. Generally, the times below are the MAXIMUM times you will need for full sun areas. Start with this schedule and customize it based on the needs of your landscape. If plant stress occurs in isolated areas, check your irrigation system for problems (e.g. crooked sprinklers, blocked sprinklers, leaks, etc.) before increasing run-times.

Month	Turfgrass & Annuals	Trees & Shrubs	*% Option**	Notes
January & February	2 days, 2 cycles of 2 min	1 day, 2 cycles of 3 min	*30%*	Turn water off before it rains & let soil dry before turning on again.
March	3 days, 2 cycles of 3 min	2 days, 2 cycles of 3 min	*50%*	March/April is the most active growth period for plants.
April	3 days, 2 cycles of 4 min	2 days, 2 cycles of 4 min	*70%*	
May	3 days, 2 cycles of 3 min	2 days, 3 cycles of 3 min	*80%*	
June	3 days, 2 cycles of 5 min	3 days, 2 cycles of 3 min	*100%*	
July & August	4 days, 3 cycles of 3 min	2 days, 3 cycles of 4 min	*100%*	
September	4 days, 2 cycles of 3 min	2 days, 2 cycles of 4 min	*70%*	In September, plant water needs drop by ~30% even if the temperature remains hot because the days are shorter, so evaporation decreases. This rapid drop in water needs will continue through November.
October	3 days, 2 cycles of 3 min	2 days, 2 cycles of 3 min	*50%*	
November	2 days, 2 cycles of 3 min	1 day, 2 cycles of 4 min	*40%*	
December	2 days, 2 cycles of 2 min	1 day, 2 cycles of 3 min	*30%*	

* Most newer automatic controllers have "% Option" button or dial (or "Water Budget" feature on some controllers) that permits the watering run times to be easily adjusted to better reflect plant water needs based on the season. The initial watering schedule is set for July/August when plants need the most water (a baseline of 100%). In September the "% Option" can be set to 70% in order to reduce your water use by 30% while still providing your landscape with the water it needs. It's much easier to use this feature than to constantly switch irrigation days, cycles, & frequency!

** Make sure to change the 9-volt battery in your controller every time you do the same for your fire alarm.

*** Check your controller's schedule after electrical power is interrupted at your house. Oftentimes, a power outage will reset a controller (especially if the backup battery is dead!) to a default schedule of 10 minutes of water for every station, every day!

5 Steps to a WaterSmart Garden!

1) **Choose the Right Plants** - consider CA natives and plants from Mediterranean climates that can thrive in our dry climate (~13" of rain/yr; Sunset Climate Zone 23). Limit grass to recreational areas only.

2) **Group Plants** - Site plants with similar water, soil, and light needs together (called "hydrozones").

3) **Irrigate Efficiently** - Use drip irrigation or low-flow rotating nozzles (rebates available!) to deliver water directly to the root zone without the over-spray or runoff typical of conventional spray-head sprinklers.

4) **Water Deeply** - Irrigate established plants thoroughly but infrequently to encourage roots to grow downward - shallow roots are susceptible to drought.

5) **Mulch** - A thick layer of mulch (3") helps preserve soil moisture and retards weed growth. Organic types, such as bark mulch, improve soil structure & encourage beneficial microbes.

Contact / Links

Utilities Division:

(949) 366-1553

SaveWater@San-Clemente.org

Websites:

www.San-Clemente.org/WaterSmartSC

www.twitter.com/WaterSmartSC

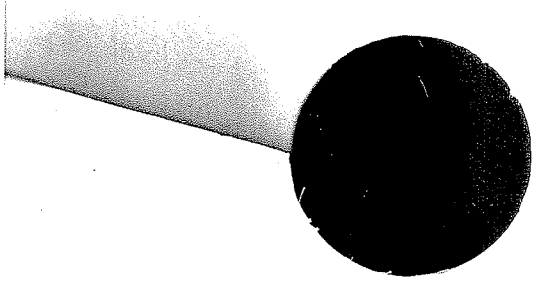
www.bewaterwise.com

www.socalwatersmart.com (rebates)

www.h2ouse.org

www.theecologycenter.org

Door Hanger



What is Urban Runoff?

Urban runoff occurs when rain or water from other sources (like watering your lawn) carries litter, pet waste, garden chemicals and yard clippings into storm drains. Because the storm drains are separate from the sewer system, this water does not receive treatment before flowing into the ocean.

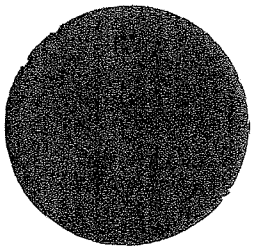
Tips for your yard

- Adjust sprinklers to avoid over watering
  1. Observe how long it takes before your lawn starts "shedding" water into the gutter.
  2. If water flows from your yard or curb drain, adjust your timer to the last minute before the water started to run off the lawn.
- Do not use fertilizers, insecticides or herbicides before a predicted rainstorm or sprinkler cycle. The rain can wash the products into the storm drain.

You can help protect the quality of our beaches by eliminating a major source of runoff...

Excess Irrigation.

Help Protect Ocean Water Quality and Conserve Water



City of San Clemente staff observed the following sources of water runoff or pollution in your area:

☐ Irrigation Runoff from Your Property

☐ Water Flowing from Your Curb Drain

☐ Yard Waste (leaves, grass, mulch)

☐ Pet Waste

☐ Other: _____

Comments:

_____

_____

_____

_____

_____

Remember, *if it's not raining*, there should be no water in the gutters or storm drains!

For more information or to report suspicious discharges or spills to the storm drain system, please call the 24-hour San Clemente Utilities Division Hotline at (949) 366-1553.

High Use Letter

City of San Clemente
Utilities Division
Phone: (949) 366-1553 Fax: (949) 361-8234

3/30/2011

Customer Name
Address
City

RE: Confirmed high water meter read at: _____

Account #: _____

Dear Customer:

Our data indicates that the water consumption at the above referenced address is greater this month when it is compared to average use at the property. You used ___ units of water last month (1 unit = 748 gallons) and this month you used ___ units. **The meter was re-read two times and was confirmed by our field crew for the accuracy of the read.**

Keeping in mind that the City has declared a water shortage level 2 water alert, please check your water system for potential leaks. The most common sources of increased water consumption are toilet leaks and changes in irrigation system programming or hardware. If you have experienced a recent power outage, your sprinkler controller may have reset to a default schedule of 10 minutes every day. Open the controller, check the settings, and make sure you have a fresh 9-volt battery in the controller.

For additional information regarding water conservation, please reference the enclosed WaterSmartSC flyer. In addition, for information on rebates for water efficient technologies and plants, visit www.san-clemente.org/WaterSmartSC or call us @ (949) 366-1553 for more information or to setup a site survey. We ask that you please be mindful of the City's year round water conservation requirements as discussed in Section 13.12.050 of the Municipal Code.

Sincerely,

City of San Clemente Utilities Division

For questions, please reference **Day 3**

Enc: Water: Save it or Lose it Water Savings flyer

New Customer Welcome Letter

City of San Clemente
Utilities Division

Jay Elston, Utilities Operations Supervisor
Phone: (949) 366-1553 Fax: (949) 361-8234

February 11, 2011

Customer Name
Address
San Clemente, CA 92672

Dear *Customer Name*,

Welcome to the City of San Clemente. As a new San Clemente utilities customer we want to provide you with some basic information about your city provided utilities. The Utilities Division is a full service operation that oversees the public water, sewer, water reclamation, and drainage system.

For your convenience we have provided you with a contact list for various Utility Division and City functions and services in case you have a need to contact us for any reason.

I would also like to take this opportunity to inform you the city has a proactive water conservation ordinance and program. We encourage you to visit www.san-clemente.org/WaterSmartSC and www.bewaterwise.com for useful information regarding water conservation tips, programs and rebates. Please email SaveWater@san-clemente.org or call (949) 366-1553 if you would like to contact the City's water conservation specialist. A flyer highlighting the City's water conservation ordinance and rebate programs is enclosed.

The Utilities Division phone service, (949) 366-1553, is monitored 24 hours a day, either by Utilities staff during normal working hours or a professional answering service during off hours, weekends and holidays. The answering service will immediately contact on-call Utilities Division staff for all water, sewer or storm drain emergency calls and reports of suspected hazardous waste spills or illegal dumping into storm drains.

Again welcome to our community and if we can be of further service, please do not hesitate to contact us if you have any questions about your utility service or, if you observe any type of water, sewer or storm drain problems.

Sincerely,

J Elst

Jay Elston
Utilities Operations Supervisor

Utility Bill

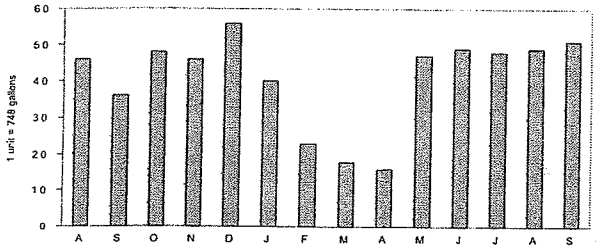
City of San Clemente
100 Avenida Presidio
San Clemente, CA 92672-3100

Account Number:	
Customer Name:	
Service Location:	
Billing Date:	09/08/2010

Website: http://san-clemente.org
Billing Questions: (949)361-8315
Meter Problems/Leaks: (949)366-1553

Read Date Previous	Read Date Current	No. of Days	Meter Reading Previous	Meter Reading Current	Consumption History Current	Consumption History Last Year
07/19/2010	08/17/2010	29	2397	2448	51	36

Consumption History:



Messages:
WaterSmartSC Tip: In September, plant water needs drop by 30% as the days become shorter and evaporation decreases. Reduce your watering times by a couple of minutes. To view a WaterSmart landscaping & watering guide, visit www.San-Clemente.org/WaterSmartSC.

City offices are closed every other Friday. The City will be closed on the following dates:

September 17, 2010 - Dark Friday
October 1, 2010 - Dark Friday
October 15, 2010 - Dark Friday

Account Summary

Previous Balance				$ 249.56
Payment - Thank You				$ -249.56
Water Base Fee				9.70
Water Consumption				203.55
Tier1	17 Units @ 1.89	=	32.13	
Tier2	14 Units @ 2.83	=	39.62	
Tier3	20 Units @ 6.59	=	131.80	
Sewer Base Fee				19.01
Sewer Commodity				27.00
Storm Drain				2.96
Clean Ocean Fee				5.02
Current Charges (08/05/2010-09/07/2010)				267.24

Balance Deducted on or after 10/05/2010: **$ 267.24**
Your water usage is measured in units. 1 unit = 748 gallons
Your water usage for this period was 38,148 gallons

Current	Over 25	Over 50	Over 75
267.24	0.00	0.00	0.00

Keep this portion for your records.

TO ENSURE PROPER CREDIT, DETACH AND RETURN THIS STUB WITH PAYMENT

City of San Clemente
100 Avenida Presidio
San Clemente, CA 92672-3100

Account Number:
Balance Deducted on or after 10/05/2010: **$ 267.24**

AUTO PAY - DO NOT PAY

Amount Paid $

Please make address correction below.

LEN0910C AUTO 5-DIGIT 92673
7000003350 01.0009.0355 3350/1

SAN CLEMENTE CA 92673-3523

Billing Questions? Call (949) 361-8315

CITY OF SAN CLEMENTE
P.O. BOX 513908
LOS ANGELES, CA 90051-3908

10314602000026724 8

Appendix E

60 Day Notification Letters

City of San Clemente
Utilities Division
David Rebensdorf, Assistant City Engineer
Phone: (949) 361-6130 Fax: (949) 361-8234
RebensdorfD@San-Clemente.org

March 17, 2011

Jim Pechous, City Planner
City of San Clemente
910 Calle Negocio
San Clemente, CA 92673

Dear Mr. Pechous,

The Utilities Division updates its Urban Water Management Plan every five years pursuant to Urban Water Management Planning Act of the California Water Code. This effort helps ensure City of San Clemente customers receive a reliable supply of high-quality water to meet current and future demands. Because comprehensive water resource planning is so critical, the California Water Code now mandates all urban water purveyors notify the cities and/or county in which they serve as part of this planning effort. This letter, as required by law, is provided to solicit your input on how future land-use planning decisions in San Clemente may impact water consumption over the next 20 years.

The information you provide will be incorporated into the City of San Clemente's 2010 Urban Water Management Plan. The document will then be submitted to the Municipal Water District of Orange County (MWDOC), which is compiling a countywide 2010 Regional Urban Water Management Plan. In turn, MWDOC's plan will be submitted to the Metropolitan Water District of Southern California (MET) for inclusion into its comprehensive 2010 Regional Urban Water Management Plan. MET supplies imported water from Northern California and the Colorado River to nearly 18 million people in six Southern California counties. MWDOC, a MET member agency, is the water wholesaler and resource-planning agency for Orange County. The result of our collaborative efforts will be an all-inclusive plan that will assist us in better managing Southern California's water resources.

If you have a question or comment about our regional planning effort, please contact any one of the following individuals:

City of San Clemente Utilities Division: David Rebensdorf, Assistant City Engineer, (949) 361-6130
Municipal Water District of Orange County: Lee Jacobi, Water Resources Engineer, (714) 593-5011

Metropolitan Water District: Brendon Goshi, Water Resource Manager, (213) 217-7384

A draft of the City of San Clemente 2010 Urban Water Management Plan will be available for review on the City website at www.san-clemente.org by April 18, 2011. A public hearing is scheduled to be held on May 17, 2011.

Sincerely,

David Rebensdorf
Assistant City Engineer

cc: Anthony Mejia, Deputy City Clerk, City of San Clemente

City of San Clemente
Utilities Division

David Rebensdorf, Assistant City Engineer
Phone: (949) 361-6130 Fax: (949) 361-8234
RebensdorfD@San-Clemente.org

March 17, 2011

Mr. Kevin Hunt
General Manager
Municipal Water District of Orange County
P.O. Box 20895
Fountain Valley, CA 92728

Dear Mr. Hunt,

The Utilities Division updates its Urban Water Management Plan every five years pursuant to the Urban Water Management Planning Act of the California Water Code. This effort helps ensure City of San Clemente customers receive a reliable supply of high-quality water to meet current and future demands. Because comprehensive water resource planning is so critical, the California Water Code now mandates all urban water purveyors notify the cities and/or county in which they serve as part of this planning effort. This letter, as required by law, is provided to solicit your input on how future land-use planning decisions in San Clemente may impact water consumption over the next 20 years.

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Sincerely,

David Rebensdorf
Assistant City Engineer

cc: Anthony Mejia, Deputy City Clerk, City of San Clemente

City of San Clemente
Utilities Division

David Rebensdorf, Assistant City Engineer
Phone: (949) 361-6130 Fax: (949) 361-8234
RebensdorfD@San-Clemente.org

March 17, 2011

Mr. Tom Daly
Clerk/Recorder
County of Orange
P.O. Box 238
Santa Ana, CA 92701

Dear Mr. Daly,

The Utilities Division updates its Urban Water Management Plan every five years pursuant to Urban Water Management Planning Act of the California Water Code. This effort helps ensure City of San Clemente customers receive a reliable supply of high-quality water to meet current and future demands. Because comprehensive water resource planning is so critical, the California Water Code now mandates all urban water purveyors notify the cities and/or county in which they serve as part of this planning effort. This letter, as required by law, is provided to solicit your input on how future land-use planning decisions in San Clemente may impact water consumption over the next 20 years.

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Sincerely,

David Rebensdorf
Assistant City Engineer

cc: Anthony Mejia, Deputy City Clerk, City of San Clemente

City of San Clemente
Utilities Division

David Rebensdorf, Assistant City Engineer
Phone: (949) 361-6130 Fax: (949) 361-8234
RebensdorfD@San-Clemente.org

March 17, 2011

Ms. Mary Skorpanich
Director, OC Watersheds Program
County of Orange/OC Public Works
P.O. Box 4048
Santa Ana, CA 92701

Dear Ms. Skorpanich,

The Utilities Division updates its Urban Water Management Plan every five years pursuant to Urban Water Management Planning Act of the California Water Code. This effort helps ensure City of San Clemente customers receive a reliable supply of high-quality water to meet current and future demands. Because comprehensive water resource planning is so critical, the California Water Code now mandates all urban water purveyors notify the cities and/or county in which they serve as part of this planning effort. This letter, as required by law, is provided to solicit your input on how future land-use planning decisions in San Clemente may impact water consumption over the next 20 years.

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Sincerely,

David Rebensdorf
Assistant City Engineer

cc: Anthony Mejia, Deputy City Clerk, City of San Clemente

City of San Clemente
Utilities Division

David Rebensdorf, Assistant City Engineer
Phone: (949) 361-6130 Fax: (949) 361-8234
RebensdorfD@San-Clemente.org

March 17, 2011

Michael Dunbar, General Manager
South Coast Water District, Administrative Office
31592 West Street
Laguna Beach, CA 92651-6907

Dear Mr. Dunbar,

The Utilities Division updates its Urban Water Management Plan every five years pursuant to Urban Water Management Planning Act of the California Water Code. This effort helps ensure City of San Clemente customers receive a reliable supply of high-quality water to meet current and future demands. Because comprehensive water resource planning is so critical, the California Water Code now mandates all urban water purveyors notify the cities and/or county in which they serve as part of this planning effort. This letter, as required by law, is provided to solicit your input on how future land-use planning decisions in San Clemente may impact water consumption over the next 20 years.

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Sincerely,

David Rebensdorf
Assistant City Engineer

cc: Anthony Mejia, Deputy City Clerk, City of San Clemente

City of San Clemente
Utilities Division

David Rebensdorf, Assistant City Engineer
Phone: (949) 361-6130 Fax: (949) 361-8234
RebensdorfD@San-Clemente.org

March 17, 2011

John Schatz, General Manager
Santa Margarita Water District
26111 Antonio Parkway
Rancho Santa Margarita, CA 92688

Dear Mr. Schatz,

The Utilities Division updates its Urban Water Management Plan every five years pursuant to Urban Water Management Planning Act of the California Water Code. This effort helps ensure City of San Clemente customers receive a reliable supply of high-quality water to meet current and future demands. Because comprehensive water resource planning is so critical, the California Water Code now mandates all urban water purveyors notify the cities and/or county in which they serve as part of this planning effort. This letter, as required by law, is provided to solicit your input on how future land-use planning decisions in San Clemente may impact water consumption over the next 20 years.

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Metropolitan Water District: Brendon Goshi, Water Resource Manager, (213) 217-7384

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Sincerely,

David Rebensdorf
Assistant City Engineer

cc: Anthony Mejia, Deputy City Clerk, City of San Clemente

City of San Clemente
Utilities Division

David Rebensdorf, Assistant City Engineer
Phone: (949) 361-6130 Fax: (949) 361-8234
RebensdorfD@San-Clemente.org

March 17, 2011

Tom Rosales, General Manager
South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

Dear Mr. Rosales,

The Utilities Division updates its Urban Water Management Plan every five years pursuant to Urban Water Management Planning Act of the California Water Code. This effort helps ensure City of San Clemente customers receive a reliable supply of high-quality water to meet current and future demands. Because comprehensive water resource planning is so critical, the California Water Code now mandates all urban water purveyors notify the cities and/or county in which they serve as part of this planning effort. This letter, as required by law, is provided to solicit your input on how future land-use planning decisions in San Clemente may impact water consumption over the next 20 years.

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Sincerely,

David Rebensdorf
Assistant City Engineer

cc: Anthony Mejia, Deputy City Clerk, City of San Clemente

Appendix F

Public Hearing Notice

AFFIDAVIT OF PUBLICATION

STATE OF CALIFORNIA,)
) ss.
County of Orange)

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the **Sun Post News**, a newspaper that has been adjudged to be a newspaper of general circulation by the Superior Court of the County of Orange, State of California, on June 20, 1994, Case No. A-9140 in and for the City of San Clemente, County of Orange, State of California; that the notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

April 28, 2011, May 5, 2011

"I certify (or declare) under the penalty of perjury under the laws of the State of California that the foregoing is true and correct":

Executed at Santa Ana, Orange County, California, on

Date: May 5, 2011

Signature

Sun Post News
625 N. Grand Ave.
Santa Ana, CA 92701
(714) 796-2209

PROOF OF PUBLICATION

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN THAT A PUBLIC HEARING WILL BE HELD BY THE CITY COUNCIL OF THE CITY OF SAN CLEMENTE, CALIFORNIA, RELATIVE TO THE FOLLOWING:

2010 Urban Water Management Plan

To consider the adoption of the 2010 Urban Water Management Plan. The California Urban Water Management Planning Act of 1983 requires urban water suppliers develop a water management plan that addresses water demands, supplies, conservation and efficient use of water supplies. The Act also requires Urban Water Management Plans to be updated every 5 years. A copy of the 2010 Urban Water Management Plan is available at the City Clerk's Office located in City Hall at 100 Avenida Presidio, San Clemente.

If you challenge this project in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of San Clemente at, or prior to, the Public Hearing.

NOTICE IS FURTHER GIVEN that said public hearing will be held at the meeting of the City Council on May 17, 2011 at 6:00 p.m. in the City Hall Council Chambers, 100 Avenida Presidio, San Clemente, California. All interested persons are invited to attend said hearing, or to submit written communication, to express their opinion for or against the request. For further details, you are invited to contact Nathan Adams, Water Resources Manager, by telephone at (949) 361-8354.

JOANNE BAADE
City Clerk and Ex-Officio
Clerk of the Council

Publish: Sun Post News April 28, May 5, 2011 9360211

Appendix G

Copy of Plan Adoption

RESOLUTION NO. 11-26

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN CLEMENTE, CALIFORNIA, ADOPTING THE URBAN WATER MANAGEMENT PLAN PURSUANT TO AB 797.

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et seq., known as the urban Water Management Planning Act) during the 1983-1984 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the City of San Clemente is an urban supplier of water providing service to 17,258 customers; and

WHEREAS, the Urban Water Management Plan shall be periodically reviewed at least once every five years, and the City shall make any amendments or changes to its Plan; and

WHEREAS, the 2010 Urban Water Management Plan must be adopted by July 1, 2011, after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS, the City has therefore prepared for public review an Urban Water Management Plan, and a properly noticed public hearing regarding said Plan was held by the City Council on May 17, 2011; and

WHEREAS, the City of San Clemente did prepare and shall file said Plan with the California Department of Water Resources within 30 days of adoption.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SAN CLEMENTE DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. The City Council of the City of San Clemente hereby adopts the City of San Clemente Urban Water Management Plan 2010, on file in the City Clerk's office.

Section 2. The City Council of the City of San Clemente hereby directs staff to file the City of San Clemente Urban Water Management Plan 2010 with the California Department of Water Resources by July 1, 2011.

Section 3. The City Clerk shall certify to the passage and adoption of this resolution and enter it into the book of original resolutions.

PASSED AND ADOPTED this 17th day of May, 2011.

ATTEST:

City Clerk of the City of
San Clemente, California

Mayor of the City of
San Clemente, California

STATE OF CALIFORNIA)
COUNTY OF ORANGE) §
CITY OF SAN CLEMENTE)

I, JOANNE BAADE, City Clerk of the City of San Clemente, California, do hereby certify that Resolution No. 11-26 was adopted at a regular meeting of the City Council of the City of San Clemente held on the 17th day of May, 2011, by the following vote:

AYES: BAKER, BROWN, DAHL, EVERT, MAYOR DONCHAK

NOES: NONE

ABSENT: NONE

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of San Clemente, California, this 24TH day of MAY, 2011.

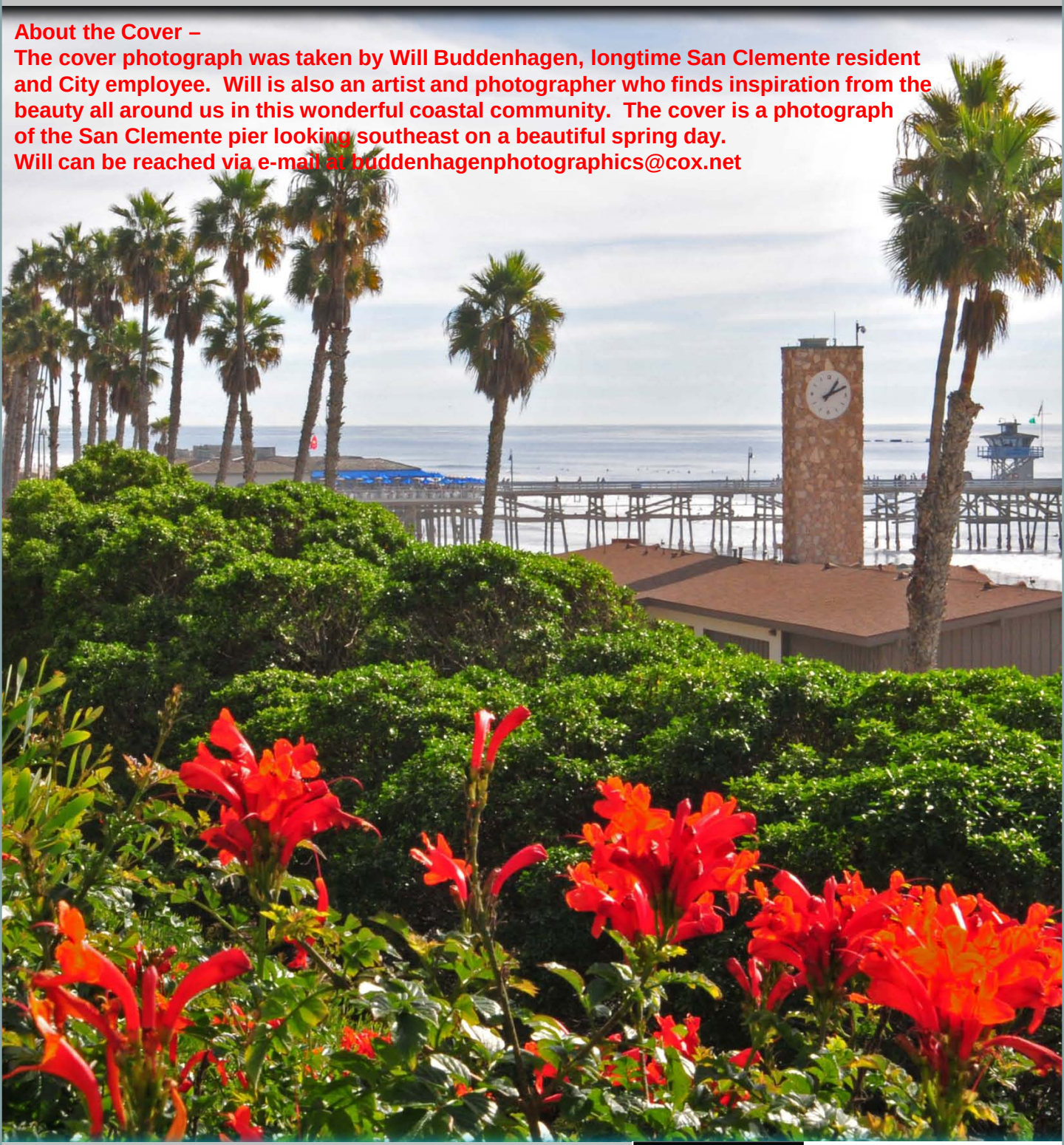
CITY CLERK of the City of
San Clemente, California

Approved as to form:

/s/ Jeff Oderman

City Attorney

About the Cover –
The cover photograph was taken by Will Buddenhagen, longtime San Clemente resident and City employee. Will is also an artist and photographer who finds inspiration from the beauty all around us in this wonderful coastal community. The cover is a photograph of the San Clemente pier looking southeast on a beautiful spring day.
Will can be reached via e-mail at buddenhagenphotographics@cox.net



8001 Irvine Center Drive, Suite 1100
Irvine, CA 92618
949.450.9901 Fax 949.450..9902

MALCOLM PIRNIE | ARCADIS

The Water Division of ARCADIS