City of Buena Park

December 2005

2005 Urban Water Management Plan

carollo engineers

The undersigned has approved this document for and on behalf of Carollo Engineers, P.C.

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City of Buena Park

2005 URBAN WATER MANAGEMENT PLAN

December 2005

FINAL

carollo engineers

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2005 URBAN WATER MANAGEMENT PLAN

This executive summary presents the purpose of the City of Buena Park's (City) Urban Water Management Plan (UWMP), the differences between the 2000 UWMP and the 2005 UWMP, and describes specific Demand Management Measures (DMMs) already in place and DMMs that must be adopted to be in compliance with the California Urban Water Management Planning Act.

ES.1 PURPOSE OF THE URBAN WATER MANAGEMENT PLAN

The purpose of the UWMP is to maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions. This report, which was prepared in compliance with the California Water Code, and as set forth in the guidelines and format established by the Department of Water Resources, constitutes the City's 2005 UWMP.

ES.2 DIFFERENCES BETWEEN 2000 UWMP AND 2005 UWMP

Since the City's 2000 UWMP, two notable bills, which became effective beginning January 1, 2002, have been Amendments SB 610 (Costa, 2001) and AB 901 (Daucher, 2001). These amendments require counties and cities to consider information relating to the availability of water to supply new large developments.

One of the most recent amendments includes SB 318 (Alpert, 2004), which requires the plan to describe the opportunities for development of desalinated water, including but not limited to, ocean water, brackish water, and groundwater, as long-term supply. Another recent amendment is AB 105 (Wiggins, 2004), which requires urban water suppliers to submit their UWMPs to the California State Library.

ES.3 DEMAND MANAGEMENT MEASURES

In 1991, a Memorandum of Understanding (MOU) regarding urban water conservation in California formed the California Urban Water Conservation Council (CUWCC). The City is not currently a signatory of the MOU and is therefore not a member of CUWCC.

However, the City realizes the importance of the best management practices (BMPs) to ensure a reliable future water supply. The City is committed to implementing water conservation and water recycling programs to maximize sustainability in meeting future water needs for its customers.

ES.3.1 Demand Management Measures Already in Place

The 11 DMMs already implemented by the City are:

- DMM 1 - Water Survey Programs
- DMM 2 - Residential Plumbing Retrofit
- DMM 3 - Water System Audits
- DMM 4 - Metering with Commodity Rates
- DMM 5 - Landscape Irrigation Programs
- DMM 6 - Washing Machine Rebate Program
- DMM 7 - Public Information
- DMM 8 - School Education
- DMM 9 - Commercial, Industrial and Institutional Programs
- DMM 12 - Water Conservation Coordinator
- DMM 13 - Water Waste Prohibition
- DMM 14 - Ultra Low Flush Toilet Replacement

The implementation and investment into the City's DMMs are a significant contribution to permanent reductions in water demands.

ES.3.2 Demand Management Measures Planned for Implementation

The following DMMs are planned for implementation and will be adopted so as to be in compliance with the California Urban Water Management Planning Act:

- DMM 11 - Conservation Pricing

DMM 11 requires the replacement of the City's existing financial accounting system and adoption of new rates by the City Council. Once implemented, this DMM will further contribute to the permanent reductions in water demands.

City of Buena Park
2005 Urban Water Management Plan

Contact Sheet

Date plan submitted to the Department of Water Resources: December 22, 2005

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The Water supplier is a: **Municipality**

The Water supplier is a: **Retailer**

Utility services provided by the water supplier include: **Water**

Is This Agency a Bureau of Reclamation Contractor? **No**

Is This Agency a State Water Project Contractor? **No**

City of Buena Park

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DWR "Review for Completeness" Checklist
2005 Urban Water Management Plan
City of Buena Park

UWMP Act Code	Reference in 2005 UWMP
Coordination with Appropriate Agencies	Water Code §10620(d)(1)(2)
Describe coordination of the plan preparation and anticipated benefits	Section 1.5
Describe Resource Maximization / Import Minimization Plan	Water Code §10620(f)
Describe water management tools/options to maximize resources and minimize the need to import water	Section 7.1 through 7.14
Plan Updated in Years Ending in Five and Zero	Water Code § 10621(a)
Plans must be updated at least once every year on or before December 31st, in years ending in five and zero	Section 1.1
City and County Notification and Participation	Water Code § 10621 (b)
Notification of any city or county within the service area regarding the update to the UWMP.	Section 1.5
Service Area Information	Water Code §10631(a)
Service area information, including population, climate and other demographic factors	Section 2.4, Section 2.5
Water Sources	Water Code §10631(b)
Identify and quantify existing and planned water supply sources	Section 3.2, Section 3.3, Section 3.4
Groundwater Identified as Existing or Planned Source	Water Code §10631(b)(1-4)
Describe basin management plan, attach management plan, describe groundwater basins, describe plan to eliminate overdraft, analyze location, amount and sufficient production of last 5 years and analyze location and amount projected in next 25 years	Section 3.4, Section 3.5
Reliability of Supply	Water Code §10631(c)(1-3)
Describe reliability of the water supply and vulnerability to seasonal or climatic shortage	Section 4.2
Water Resources Not Available on a Consistent Basis	Water Code §10631(c)
Describe reliability/vulnerability of the water supply to seasonal or climatic shortage	Section 4.2.2
Transfer or Exchange Opportunities	Water Code §10631(d)
Describe short term and long term exchange or transfer opportunities	N/A
Water Use Provisions	Water Code §10631(e)(1)(2)
Quantify past, current & future water use by sectors	Section 5.2, Appendix F

DWR "Review for Completeness" Checklist
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Water Survey Programs (DMM 1)	Water Code §10631(f)(1)(A)
Water audits for residential customers including reviewing water usage history, identifying leaks inside and outside and recommending improvements	Section 7.1
Residential Plumbing Retrofit (DMM 2)	**Water Code §10631(f)(1)(B)**
Distribution of retrofit kits which are physically installed and reduce the amount of water used	Section 7.2
Water System Audits (DMM 3)	**Water Code §10631(f)(1)(C)**
System-wide water audit to quantify unaccounted for water	Section 7.3
Metering with Commodity Rates (DMM 4)	**Water Code §10631(f)(1)(D)**
Requires meters on all connections and billing by volume use	Section 7.4
Landscape Irrigation Programs (DMM 5)	**Water Code §10631(f)(1)(E)**
Requires agencies to assign ETo water budgets to accounts with dedicated irrigation meters and water audits those with mixed-use meters.	Section 7.5
Washing Machine Rebate Program (DMM 6)	**Water Code §10631(f)(1)(F)**
Provides financial incentive to qualifying customers who install a high efficiency washing machine.	Section 7.6
Public Information (DMM 7)	**Water Code §10631(f)(1)(G)**
Distribution of information to the public through a variety of methods	Section 7.7
School Education (DMM 8)	**Water Code §10631(f)(1)(H)**
Requires agency to implement a school education program that includes providing education materials and instructional assistance	Section 7.8
Commercial, Industrial & Institutional Programs (DMM 9)	**Water Code §10631(f)(1)(I)**
Conservation programs for commercial, industrial and institutional accounts	Section 7.9
Wholesale Agency Programs (DMM 10)	**Water Code §10631(f)(1)(J)**
Defines a wholesaler's role in terms of financial, technical and programmatic assistance to its retail agencies.	Section 7.10

DWR "Review for Completeness" Checklist
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Conservation Pricing (DMM 11)	Water Code §10631(f)(1)(K)
Implementation of pricing structure that offers incentive for consumers to conserve water	Section 7.11
Water Conservation Coordinator (DMM 12)	**Water Code §10631(f)(1)(L)**
Designation of a staff member to oversee implementation and effectiveness of water conservation programs	Section 7.12
Water Waste Prohibition (DMM 13)	**Water Code §10631(f)(1)(M)**
Ordinance or resolution prohibiting the waste of water	Section 7.13, Appendix G
Ultra Low Flush Toilet Replacement (DMM 14)	**Water Code §10631(f)(1)(N)**
Residential ultra-low-flush toilet replacement programs	Section 7.14
Non-implemented DMM's	**Water Code § 10631 (g)**
An evaluation of each DMM that is not implemented or planned to be implemented.	N/A
Planned Water Supply Projects and Programs	**Water Code §10631(h)**
Describe expected future supply projects and programs	Section 3.6
Opportunities for Development of Desalinated Water	**Water Code §10631(i)**
Describe opportunities for development of desalinated water	Section 3.7
CUWCC signatory	**Water Code §10631(j)**
If agency is a CUWCC member, attach 2003-2004 annual updates	Not a member
Receiving or will Receive Water from Wholesale Supplier	**Water Code §10631(k)**
Provide written demand projections to wholesaler, and wholesaler provides written water availability to agency	N/A
Water Shortage Contingency Plan and Stage of Action	**Water Code §10632(a)**
Provide water shortage stages of action, including up to a 50 percent reduction, outlining specific water supply conditions at each stage.	Section 8.2 through Section 8.4, Appendix G
Three-Year Minimum Water Supply	**Water Code §10632(b)**
Provide minimum water supply estimates based on driest three-year historic sequence.	Section 4.2.3

DWR "Review for Completeness" Checklist
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Preparation for Catastrophic Water Supply Interruption	Water Code §10632(c)
Provide catastrophic supply interruption plan	Section 8.6
Prohibitions	**Water Code §10632(d)**
List the mandatory prohibition against specific water use practice during shortage	Section 8.4.1
Consumption Reduction Methods	**Water Code §10632(e)**
List consumption reduction method	Section 8.4
Penalties	**Water Code §10632(f)**
List excessive use penalties or charges for excessive use	Section 8.4.2
Revenue and Expenditure Impacts	**Water Code §10632(g)**
List consumption reduction method	Section 8.5
Water Shortage Contingency Ordinance/Resolution	**Water Code §10632(h)**
Attach a copy of the water shortage contingency ordinance or resolution	Section 8.3, Appendix G
Reduction Measure Mechanism	**Water Code §10632(i)**
Provide a mechanism for determining actual reduction	Section 8.7
Recycling Plan Agency Coordination	**Water Code §10633**
Describe agency coordination for the recycling plan	Section 9. 1
Wastewater System Description	**Water Code §10633(a)**
Describe and quantify wastewater collection and treatment	Section 9.2
Wastewater Disposal and Recycled Water Uses	**Water Code §10633(a-d)**
Describe method of wastewater disposal, describe uses of recycling water, quantify and describe potential uses for recycling	Section 9.3
Potential Uses of Recycled Water	**Water Code §10633(e)**
Projected use of recycled water, compare UWMP 2000 projections with UWMP 2005 actual	Section 9.3
Plan to Optimize Use of Recycled Water	**Water Code §10633(e)**
Describe action to encourage recycled water use	Section 9.1 through 9.3

DWR "Review for Completeness" Checklist
2005 Urban Water Management Plan
City of Buena Park

Water Quality Impacts on Availability of Supply	Water Code §10634
Describe water quality impacts upon water management strategies	Section 4.4, Appendix E
Supply and Demand Comparison: Normal Year Scenario	**Water Code §10635(a)**
Compare projected supply to projected normal water demand over the next 25 years, in 5 year increments	Section 6.2
Supply and Demand Comparison: Single Dry Year Scenario	**Water Code § 10635 (a)**
Compare the projected single-dry year water supply to projected single-dry year water demand over the next 25 years, in 5 year increments	Section 6.2
Supply and Demand Comparison: Multiple Dry Year Scenario	**Water Code § 10635 (a)**
Compare the projected multiple-dry year water supply to the projected multiple dry-year water demand over the next 25 years, in 5 year increments.	Section 6.2
Provision of Water Service Reliability to Cities and Counties	**Water Code §10635(b)**
Provide water service reliability section of UWMP to cities and counties within supplier's service area	Section 4.2
Public Participation and Plan Adoption	**Water Code §10642**
Encourage involvement of social, cultural & economic community groups, provide plan for public review, provide proof of public hearing, attach a copy of adoption resolution, provide meeting notice to local government	Section 1.3, 1.4, and Appendix A
Review of Implementation of 2000 UWMP	**Water Code §10643**
Review implementation of 2000 UWMP	Section 1.3.1
Provision of 2005 UWMP to local government	**Water Code §10644(a)**
Provide 2005 UWMP to DWR, cities and counties within 30 days of adoption	Section 1.5
Location of Document for Public Review	**Water Code § 10645**
Does UWMP shows where it is available for public review	Section 1.4, Appendix B

Chapter 1

INTRODUCTION

1.1 PURPOSE

The California Water Code requires urban water suppliers within the state to prepare and adopt Urban Water Management Plans (UWMP) for submission to the Department of Water Resources (DWR) every five years. These plans must satisfy the requirements of the Urban Water Management Planning Act (UWMPA) of 1983 including amendments that have been made to the UWMPA. The UWMPA requires urban water suppliers servicing 3,000 or more connections, or supplying more than 3,000 acre-feet (af) of water annually, to prepare a UWMP.

The purpose of the UWMP is to maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions. This report, which was prepared in compliance with the California Water Code and as set forth in the guidelines and format established by the DWR, constitutes the City of Buena Park's (City's) 2005 UWMP.

1.2 URBAN WATER MANAGEMENT PLANNING ACT

In 1983, State Assembly Bill 797 modified California Water Code Division 6, by creating the UWMPA. Several amendments to the original UWMPA, which were introduced since 1983, have increased the data requirements and planning elements to be included in the 2005 plans.

Initial amendments to the UWMPA required that total projected water use be compared to water supply sources over the next 20 years, in 5-year increments. Recent DWR guidelines also suggest projecting through a 25-year planning horizon to maintain a 20-year timeframe until the next UWMP update has been completed.

Other amendments require that plans include provisions for recycled water use, demand management measures, and a water shortage contingency plan. The UWMPA requires inclusion of a Water Shortage Contingency Plan and specifies the necessary elements. Another element that was recently added to the UWMPA is a section for recycled water. Recycled water figures prominently in the requirements for evaluation of alternative water supplies, when future projections predict the need for additional water supplies. Each urban water purveyor must coordinate the preparation of the Water Shortage Contingency Plan with other urban water purveyors in the area, to the extent practicable. Water suppliers must also describe the water demand management measures that they are implementing or have scheduled for implementation.

Amendments SB 610 (Costa, 2001) and AB 901 (Daucher, 2001), which became effective beginning January 1, 2002, require counties and cities to consider and evaluate data relating to the availability of water to supply new large developments in the UWMPs.

The most recent amendments include SB 318 (Alpert, 2004) and AB 105 (Wiggins, 2004). SB 318 requires the UWMP to describe the opportunities for development of desalinated water, including but not limited to, ocean water, brackish water, and groundwater, as long-term supply. AB 105 requires urban water suppliers to submit their UWMPs to the California State Library.

1.3 PREVIOUS URBAN WATER MANAGEMENT PLAN

This section briefly describes the major recommendations from the City's 2000 UWMP, dated December 2000.

1.3.1 2000 UWMP Recommendations

The 2000 UWMP provided a description of water sources and reliability, and water management programs currently or planned to be implemented.

The recommended urban water management programs for the City described in the 2000 UWMP consisted of a combination of existing and proposed water conservation measures. The 2000 UWMP recommended that the City continue with its existing activities as implemented at that time. The 2000 UWMP conservation measures consisted of the following items:

- Water leak detection kits for existing plumbing fixtures are made available to City customers at the City office. The City continues to provide on-site leak detection testing for residences and businesses upon request. Test kits are available to the residents free of charge.
- All new development within the City must adhere to the Uniform Plumbing Code 1997 chapter regarding the standards for ultra-low-flush toilets, showerheads, and kitchen faucets to help with water conservation.
- The City supports Metropolitan Water District of Orange County's (MWDOC) low-flow device replacement program, which offers rebates on various residential, commercial, and industrial retrofit devices.
- The City has implemented landscape water conservation by requiring new developments to provide landscaped areas graded to minimize runoff from irrigation.
- MWDOC has taken the lead in education for public school programs and large group assemblies. MWDOC has provided this service to the City for several years and it has benefited the City's school system.

- The City has implemented Water Awareness Month by promoting water conservation tips on water bills given to the City's residents and businesses.

1.4 PUBLIC PARTICIPATION AND PLAN ADOPTION

The UWMPA requires that the UWMP show that the water agency will request public participation.

UWMPA:

> Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

In accordance with the UWMPA, the City held a public hearing and adopted the 2005 UWMP on December 13, 2005. A copy of the adopting resolution is included in Appendix A. Two successive weeks prior to adoption, a notice of the public hearing was published in the local newspaper, notifying interested parties that the draft 2005 UWMP was available at the City Clerk's office and the City's Corporation Yard. A copy of this advertisement is included in Appendix B.

1.5 AGENCY COORDINATION

The UWMPA requires that the UWMP identify the water agency's coordination with appropriate nearby agencies.

UWMPA:

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

The City's 2005 UWMP is intended to address those aspects of the UWMPA that are under the control of the City, specifically water supply and water use. While preparing the 2005 UWMP, the City coordinated its efforts with relevant agencies to ensure that the data and issues were presented accurately.

The following agencies were provided copies of the Public Review Document of the 2005 UWMP for the City: Orange County Water District (OCWD), MWDOC, Suburban Water Company, City of Fullerton, Golden States Water Company (formerly Southern

California Water Company), City of La Mirada, City of Anaheim, County of Orange, and Metropolitan Water District of Southern California (MWDSC).

The City contacted MWDOC and received several reports, documents, and data that address the City's groundwater management, including the OCWD Groundwater Management Plan. The reports include coordination of several stakeholders and address the long-term reliability of the groundwater under a variety of planning scenarios.

The City contacted the DWR to discuss the requirements of the UWMPA and obtain electronic workbooks, checklists, and other developed guidelines to prepare this report.

1.6 REPORT ORGANIZATION

This UWMP contains nine chapters that were prepared to follow the outline requirements listed in the UWMPA. The chapters are listed below:

- Chapter 1 - Introduction.
- Chapter 2 - Service Area.
- Chapter 3 - Water Supply.
- Chapter 4 - Reliability Planning.
- Chapter 5 - Water Use.
- Chapter 6 - Supply and Demand Comparison.
- Chapter 7 - Water Demand Management Measures.
- Chapter 8 - Water Shortage Contingency Plan.
- Chapter 9 - Recycled Water.

Additionally, the chapters are preceded with a separate section titled "DWR Review for Completeness Form." This form is based on the 2005 UWMP Review Form and is provided to assist DWR staff during their review process.

SERVICE AREA

2.1 GENERAL

The Urban Water Management Planning Act (UWMPA) requires that the Urban Water Management Plan (UWMP) include a description of the water purveyor's service area and various aspects of the area served including climate, population, and other demographic factors.

UWMPA:

> 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
>
> 10631. (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

2.2 LOCATION

The City of Buena Park (City), as shown in Figure 2.1, is located in northwest Orange County, California and is bounded by the Cities of La Palma and Cerritos to the west, the City of La Mirada to the north, the City of Fullerton to the east, and the Cities of Anaheim and Cypress to the south. The Cities of Cerritos and La Mirada are within Los Angeles County, while the other cities are in Orange County. The Golden States Water Company (formerly Southern California Water Company) provides water service to the cities of Cypress and Stanton, south of the City. Suburban Water Systems provides water service to the City of La Mirada and a small segment of the City.

Currently, the City encompasses approximately 10.3-square miles (6,600 acres) of area. With the continued growth over the years, it is nearing build-out conditions and has few remaining vacant areas. Recently, older regions of the City have been redeveloped, and it is anticipated that this trend will continue through the next 20 years.

2.3 LAND USE

The City's water service area includes the Buena Park city limits (as shown in Figure 2.2), excluding three areas, which are within the city limits but served by the City of Fullerton and Suburban Water Systems. In addition, the City provides service to two locations that are outside the city limits: one area is in the City of Anaheim and the other is in the City of La Mirada.

Elevation

High : 10,000 Feet

Low : Sea Level

Major Roads

0 5 10 20 Miles

FIGURE 2.1
REGIONAL LOCATION MAP

2005 URBAN WATER MANAGEMENT PLAN

CITY OF BUENA PARK

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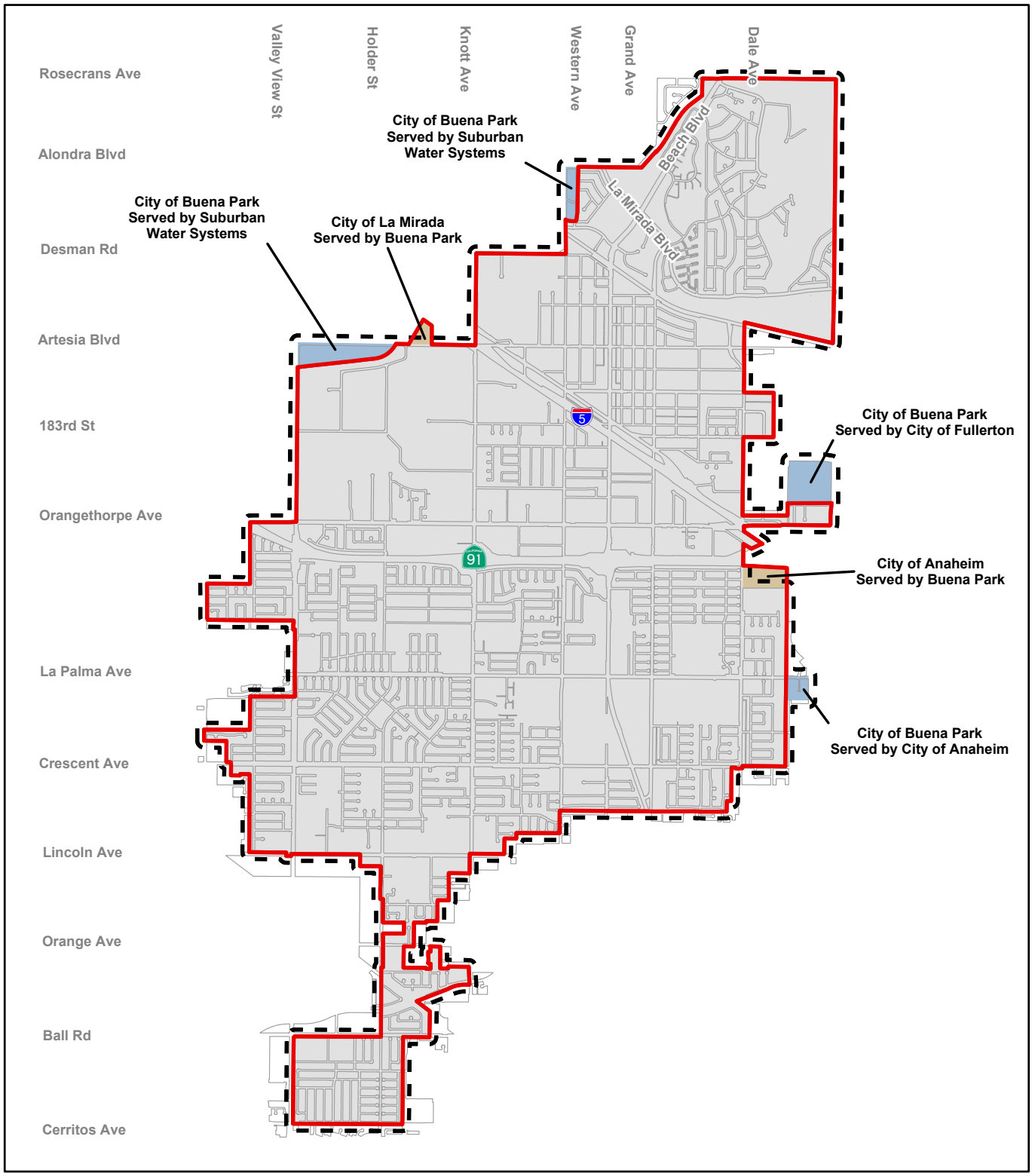

Legend

- City of Buena Park
- Service Area
- Within City Limits but Served by Others
- Outside City Limits Served by Buena Park

N

0 0.5 1 Miles

FIGURE 2.2
SERVICE AREA MAP
2005 URBAN WATER MANAGEMENT PLAN
City of Buena Park

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The existing land uses include 4,040 acres of residential, 1,048 acres of commercial, 1,059 acres of industrial, 443 acres of open space, and 178 acres of special use. As part of the analysis for the 2005 Water Master Plan Study, the City's 20 land use types were grouped into eight categories: Commercial, Industrial, Open Area (Non-irrigated), Open Area (Recreational), Special Area/Other Designation, Residential-Low Density, Residential-Medium Density, and Residential-High Density. Commercial land use consists of the following land use types: business parks, shopping areas, entertainment corridors, auto centers, amusement resorts, and regional commercial. Industrial land use consists of community manufacturing. Open space includes parks, recreational areas, and freeways. Special areas include any future planned developments. Table 2.1 shows the various land use categories.

Table 2.1 Land Use Categories
Urban Water Management Plan
City of Buena Park

Land Use	Area (acres)	Percentage of Total (%)
Residential		
Low Density	154	2
Medium Density	3,156	47
High Density	730	11
Commercial	1,048	15
Industrial	1,059	16
Open Area (Non-irrigated)	162	2
Open Area (Recreational)	281	4
Special/Other Designation	178	3
Total	**6,767**	**100**

Source: 2005 Water Master Plan Study; 50% Draft Report

2.4 CLIMATE

The climate within the City is a pleasant coastal climate that includes hot, dry summers and mild winters. The average July temperature is about 71 degrees F. Winter temperatures drop to an average of 58 degrees F in January. The rainy season lasts from October through April with an average precipitation of 2.7 inches in January and 0.02 inches in July. Table 2.2 shows the average, monthly evapotranspiration (ETo), rainfall, and temperature for the City.

Table 2.2	Average Monthly Climate Data 2005 Urban Water Management Plan City of Buena Park		
Month	**Average ETo[(1)]**	**Average Rainfall[(2)]**	**Average Temperature[(2)]**
January	2.18	3.06	56.7
February	2.49	2.86	57.9
March	3.67	2.16	59.3
April	4.71	0.93	62.1
May	5.18	0.21	64.9
June	5.87	0.07	68.3
July	6.29	0.01	72.4
August	6.17	0.07	73.6
September	4.57	0.24	72.4
October	3.66	0.33	67.9
November	2.59	1.33	61.6
December	2.25	1.76	57.0
Annual	49.63	13.05	64.6

Notes:
(1) Source: Department of Water Resources, California Irrigation Management Information System website.
(2) Source: National Oceanic and Atmospheric Administration, Western Regional Climate Center website.

2.5 PROJECTED POPULATION

Incorporated in 1953, The City encompassed 2.5-square miles. Throughout the 1950s, the City continued to grow with the construction of the Santa Ana Freeway, which bisected the City, and through annexations of farmland to construct residential and commercial areas. With the continued growth over the years, the City is nearing build-out conditions (98.5 percent built-out), and has few remaining vacant areas. Recently, older regions of the City have been redeveloped.

Population studies from the Southern California Association of Governments were used to establish the projected population of the City's service area for this report, since the City's primary service area coincides with the city boundary. Table 2.3 summarizes the population growth through 2030.

Table 2.3	**Current and Projected Population Urban Water Management Plan City of Buena Park**					
	2005	**2010**	**2015**	**2020**	**2025**	**2030**
City of Buena Park	83,031	85,855	88,134	89,960	91,697	92,481
Annual Increase over 5-Year Period		0.7%	0.5%	0.4%	0.4%	0.2%

Notes:
Population Projections Source: Southern California Association of Governments.

WATER SUPPLY

3.1 GENERAL

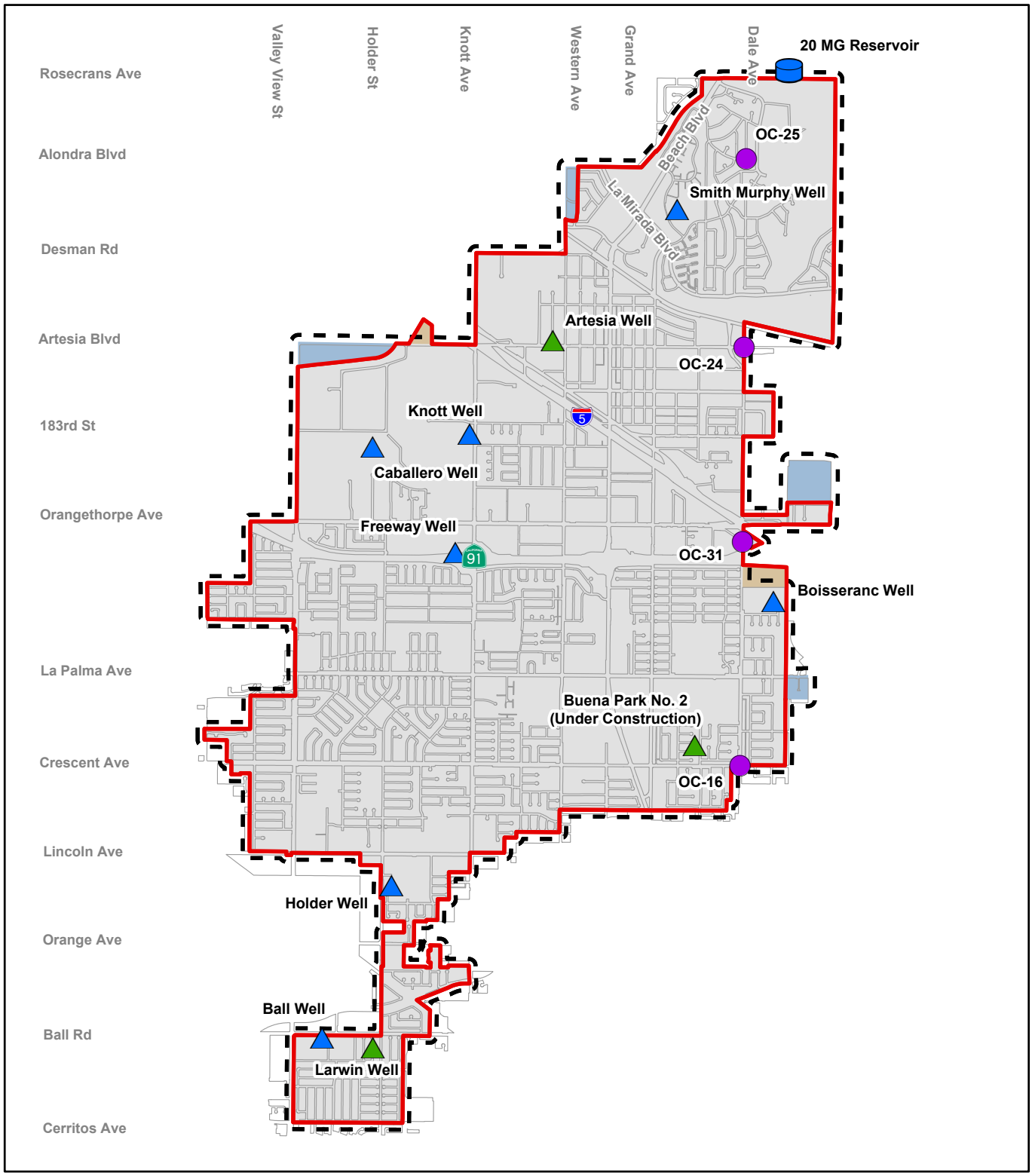
The Urban Water Management Planning Act (UWMPA) requires that the Urban Water Management Plan (UWMP) include a description of the agency's existing and future water supply sources for the next 20 years. The description of water supplies must include detailed information on the groundwater basin such as water rights, determination if the basin is in overdraft, adjudication decree, and other information from the groundwater management plan (if available).

UWMPA:

> 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
>
> 10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments to 20 years or as far as data is available. (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:
>
> 10631 (b) (1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.
>
> 10631 (b) (2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court of the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official 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.

3.2 WATER SUPPLY FACILITIES

The City of Buena Park (City) currently uses local groundwater and imported water from the Municipal Water District of Orange County (MWDOC). The City's water system extracts groundwater from underground aquifers via seven active wells located throughout the City (Figure 3.1). The pumping capacities of the City wells are shown in Table 3.1. Water is conveyed from the wells to the consumers via a distribution system with pipe sizes ranging between 4- and 36-inches in diameter. The City also has four MWDOC supply connections and one storage reservoir with a capacity of 20 million gallons.



Legend

Existing Facilities

- Reservoir

Wells

- Active
- Inactive
- MWDOC Connection
- City of Buena Park
- Service Area
- Outside of Service Area
- Inside Service Area

N

0 0.5 1 Miles

FIGURE 3.1
WATER SUPPLY FACILITIES
2005 URBAN WATER MANAGEMENT PLAN
City of Buena Park

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Table 3.1	Import Water Connections 2005 Urban Water Management Plan City of Buena Park		
Connection	**Location**	**Capacity (cfs)**	**Control**
OC-16	Crescent at Dale St.	15	Flow
OC-24	Artesia at Dale St.	4	Flow
OC-25	Lincolnshire at St. Andrews	15	Pressure
OC-31	Kass Dr. at Dale St.	10	Flow

Notes:
Source: 2005 Water Master Plan Study; 50% Draft Report.

3.3 IMPORTED WATER

MWDOC provides imported water from Metropolitan Water District of Southern California (Metropolitan) to 30 cities and water districts, including the City of Buena Park. Metropolitan imports water from Northern California and the Colorado River to meet the needs of six Southern California counties. MWDOC receives between 225,000 and 250,000 acre-feet (af) of water from Metropolitan each year and expects that to remain relatively stable through the planning horizon of 2030 (MWDOC, 2005[1]).

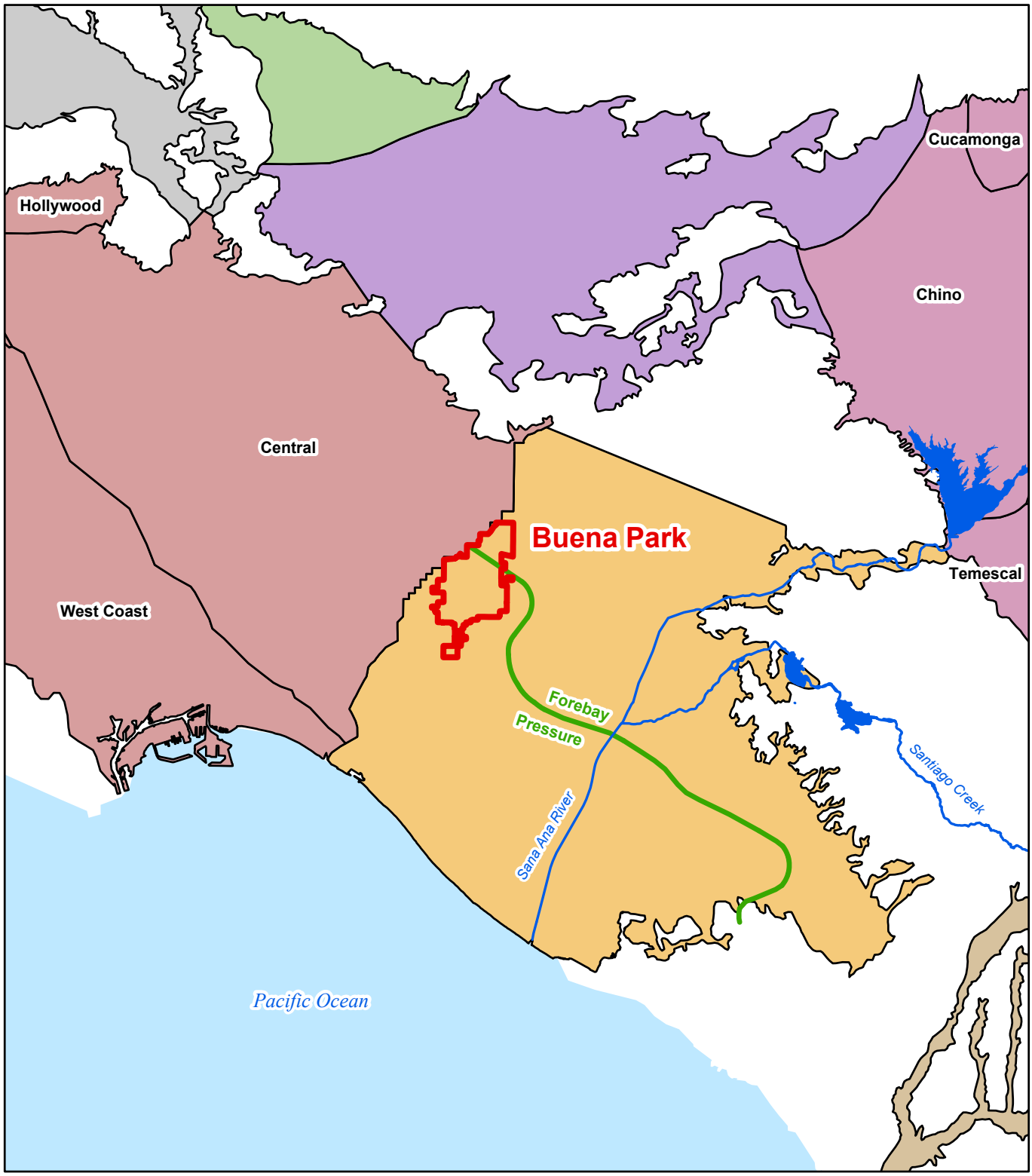
The City receives water from MWDOC via four water connections to MWDOC's Orange County Feeder (OCF) transmission pipeline. These connections are summarized in Table 3.1. OC-25 is the City's main source of imported water. Another connection was OC-17, which is no longer used since it was disconnected in 1997. The remaining three connections are secondary sources and used only if additional water is needed to supplement groundwater supplies. Potable water is supplied through the OCF from Metropolitan's F.E. Weymouth Water Treatment Plant (Weymouth) in La Verne and Joseph Jensen Water Treatment Plant in Granada Hills.

3.4 GROUNDWATER BASIN

The groundwater basin underlying the City is the Orange County Groundwater Basin (Figure 3.2). The City obtains its well water from this large groundwater basin, which is supplied via the Santa Ana River. The Santa Ana River water also includes imported water from the upstream watershed areas that show up as irrigation runoff into the river, or via wastewater discharges. Orange County Water District (OCWD) manages the groundwater basin from which the City pumps.

3.4.1 Basin Boundaries

The Orange County Groundwater Basin is located in the northern half of Orange County within the Lower Santa Ana River Watershed, underneath coastal alluvial plains (DWR, 2004[2]). It covers an area of approximately 224,000 acres. To the north are



Legend

- Forebay/Pressure Line
- Service Area

Goundwater Basin

- Coastal Plain of Los Angeles
- Coastal Plain of Orange County
- Raymond
- San Fernando Valley
- San Gabriel Valley
- San Juan Valley
- Upper Santa Ana Valley
- Waterways
- Pacific Ocean

Text:

Chino -- Groundwater Subbasin

N

0 3.5 7 Miles

FIGURE 3.2
GROUNDWATER BASINS
2005 URBAN WATER MANAGEMENT PLAN
City of Buena Park

carollo engineers

Groundwater Basin Source: California Department of Water Resources, February 2004

consolidated rocks in the Puente and Chino Hills, to the east are Santa Ana Mountains, and to the south are the San Joaquin hills (DWR, 2004). To the west is the Pacific Ocean, and to the northwest is a low topographic divide that generally follows the Orange County - Los Angeles County line (DWR, 2004).

The DWR divided the basin into two hydrologic divisions: the Pressure and Forebay Areas. The City is located within the Pressure Area. In this area of the basin, surface water and near-surface groundwater are impeded from percolating in large quantities into the aquifers (OCWD, 2004[3]). Most of the coastal and central portions of the basin fall into this area (OWCD, 2004). Water levels in wells penetrating these aquifers exhibit large seasonal variations in response to pumping because they are under confined conditions (OCWD, 2004).

Using 1969 as the benchmark year, the basin has a total capacity of approximately 66 million af. In November 2002, the basin overdraft was approximately 426,000 af.

3.4.2 Basin Pumping Percentage

Each year OCWD sets a Basin Production Percentage (BPP) for the agencies that pump from the basin. The BPP is the ratio of water produced from groundwater to all water produced by the agency. The BPP provides a limit on how much each agency can pump from the Orange County Groundwater Basin without paying a penalty. Table 4.1 displays a breakdown of the current and future BPP values for the City.

3.4.3 Groundwater Management Plan

The Orange County Water District (OCWD) was formed in 1933 by a special act of the California Legislature (OCWD, 2004). OCWD prepared a Groundwater Management Plan (GMP) in March 2004, which provides a clear understanding of OCWD's groundwater management role within the county. It also documents the existing activities of OCWD and formalizes other proposed programs in a plan that will be used in implementing a monitoring and management program for conjunctive use, replenishment, and preservation of groundwater in the basin.

Since its creation, OCWD has achieved world-renowned status for its innovative approach to groundwater recharge, water quality protection, and groundwater resource management (OCWD, 2004). OCWD's objectives related to groundwater management are to protect groundwater quality and to increase the basin's sustainable yield (OCWD, 2004).

The GWP formally documents OCWD's groundwater management goals and describes programs in place that are designed to meet those goals. The following programs are recommended in the plan:

- Monitor the quality of recharge sources.
- Monitor groundwater quality using OCWD wells and wells owned by others.

- Monitor water management and recycling plans for impact on present and future Santa Ana River flow rates and quality.
- Conduct groundwater-level and hydrogeologic evaluations to provide information to manage the basin.
- Protect OCWD's interest in management of flow of the Santa Ana River.
- Evaluate the feasibility of water recharge supplies (such as water transfers).
- Evaluate the feasibility of additional conjunctive use or storage projects.
- Evaluate projects to increase OCWD's capacity to recharge water.
- Evaluate projects to maintain the recharge rate in the Santa Ana riverbed.
- Locate future recharge projects to maximize benefits to the basin and areas of low groundwater levels to the extent feasible.
- Manage natural resources in the watershed to sustain natural resources and secure the water supply.
- Prevent saltwater intrusion.
- Evaluation emerging contaminates.
- Prevent future contamination through coordination with regulatory agencies and watershed stakeholders.
- Evaluate projects to control the movement of poor quality water.
- Evaluate and pursue projects to address existing areas of contamination.
- Evaluate projects to respond to and recover from droughts.
- Evaluate projects to control groundwater losses.
- Evaluate projects to reduce water demand through conservation and water use efficiency.

3.5 GROUNDWATER STUDY

OCWD continuously updates a GMP within the study area. The latest update was completed in March 2004.

3.5.1 Subsurface Geologic Conditions

The OCWD GMP provides the following overview of subsurface geological conditions:

> "The aquifers comprising the basin extend over 2,000 feet deep and form a complex series of interconnected sand an gravel deposits (DWR, 1967). In coastal and central portions of the basin, these deposits are more separated

by extensive lower-permeability clay and silt deposits, known as aquitards. In the inland area, generally northeast of Interstate 5, the clay and silt deposits become thinner and more discontinuous, allowing larger quantities of groundwater to flow more easily between shallow and deeper aquifers."

DWR characterizes the local subsurface geologic conditions as a deep structural depression containing an accumulation of fresh water bearing interbedded marine and continental sand, silt, and clay deposits (GMP, 2004[3]).

3.5.2 City Supply Wells

The City currently has 11 wells (seven active, one under construction, one recently abandoned, and two inactive). The wells are located throughout the City and have a total supply capacity of 17.7 million gallons per day (mgd) or 12,300 gallons per minute (gpm). The City's firm production capacity, which is defined as the total capacity with the single largest well out of service, is approximately 14.4 mgd.

Table 3.2 Water Supply Wells
2005 Urban Water Management Plan
City of Buena Park

Well Name	Status	Year Drilled	Disinfection	Capacity (gpm)
Artesia(1)	Inactive	1955	N/A	N/A
Ball	Active	1995	Sodium Hypochlorite	1,500
Boisseranc	Active	1995	Sodium Hypochlorite	2,500-3,000
Caballero	Active	1964	Emergency Chlorine Only	2,000
Freeway	Active	1964	Emergency Chlorine Only	1,500
Holder	Active	1964	Emergency Chlorine Only	1,800
Knott	Active	1964	Emergency Chlorine Only	1,000
Larwin(2)	Inactive	1954	Emergency Chlorine Only	N/A
Moss	Abandoned	1957	Emergency Chlorine Only	N/A
Smith Murphy	Active	1978	Emergency Chlorine Only	2,000
Buena Park Well No. 2	Under Construction	2005	Sodium Hypochlorite	3,000

Notes:
(1) Plans are in place to abandon this well due to high nitrate concentrations.
(2) Plans are in place to abandon this well due to low capacity.

3.5.3 Groundwater Levels

According to the GMP, water elevations in November 1969 are used as the baseline to represent near-full conditions. The net decrease in storage since 1969 represents the accumulated overdraft. In November 2002, the accumulated overdraft was approximately 426,000 af.

In both 1969 and 1983, the water level difference between coastal and Forebay endpoints was 170 feet (OCWD, 2004). In 1983, the basin was at near-full conditions. In 2002, with increased basin production and an accumulated overdraft of 426,000 af, the water level difference between these endpoints was 260 feet (OCWD, 2004[3]). The steeper hydraulic gradient enables greater flow from the Forebay to the coastal areas, however the lowering of the coastal water levels increases the chances of saltwater intrusion (OCWD, 2004[3]).

The accumulated overdraft was reduced 120,000 af between 1992 and 1994, due to increased rainfall and increased Santa Ana River storm flow (OCWD, 2004[3]). During this time, the groundwater elevations in both the Pressure and Forebay areas rose approximately 20 feet (OCWD, 2004[3]). The similarity in water elevation change occurs because groundwater in the deep portions of both areas exists under confined conditions and changes in elevation are quickly transmitted through the aquifers (OCWD, 2004[3]).

Groundwater elevations in the Forebay area rose 3 feet from 1999 to 2000, but declined 2 feet in the Pressure area. This may have been the result of a shift in the distribution of pumping.

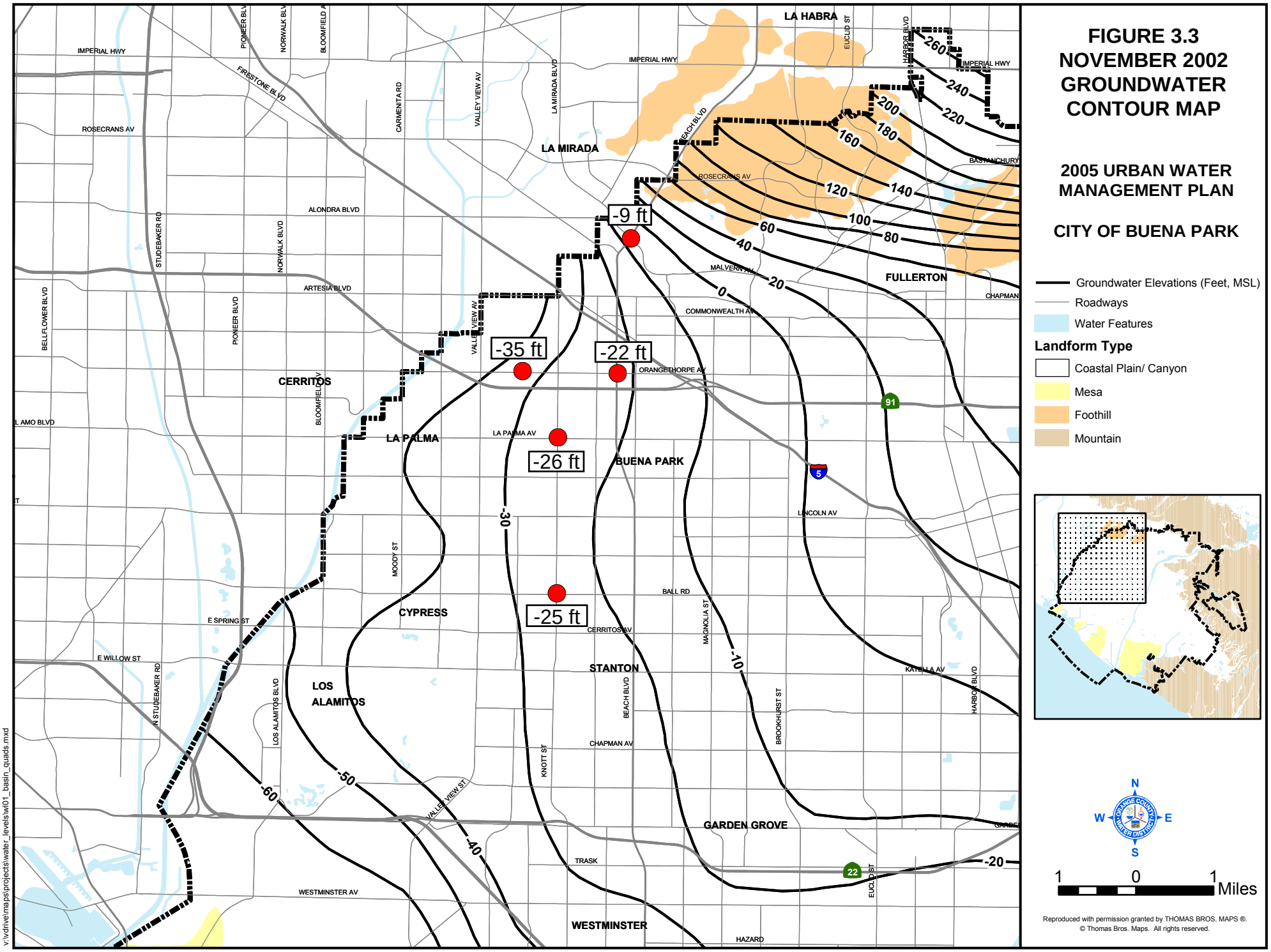
Water-level maps obtained from the OCWD for November 2002, November 2003, and November 2004 (Figures 3.3 though 3.5) indicate a minor increase in groundwater elevations under the City. Between 2002 and 2004, the groundwater elevation at the intersection of Orangethorpe Avenue and Beach Boulevard rose from 22 feet below mean sea level (msl) to 20 feet below msl. At the intersection of La Mirada Boulevard and Beach Boulevard, the groundwater elevation rose from 9 feet below msl to approximately sea level. During that same time period, the groundwater elevation rose from 25 feet below msl to 18 feet below msl near the intersection of Ball Road and Knott Avenue.

3.5.4 Sources of Recharge and Discharge

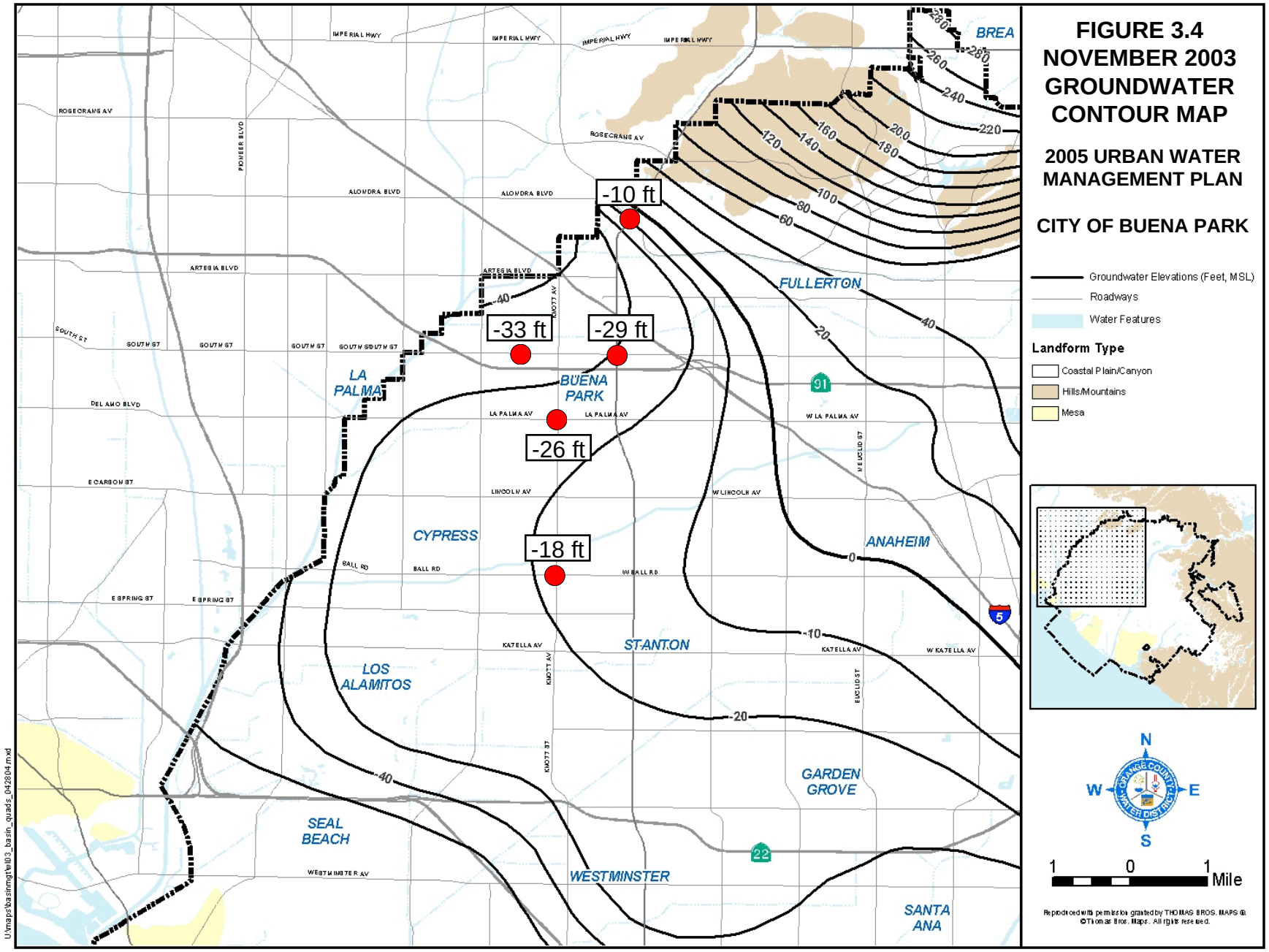
OCWD manages the basin and all recharge efforts. According to the 2004 GMP, OCWD currently owns and operates 1,000 acres of recharge spreading facilities located near the Santa Ana River and Santiago Creek. In 1949, OCWD began purchasing water from the Colorado River and began recharge activities. There are currently 17 major facilities in the Anaheim/Orange area, each with a series of percolation spreading basins (OCWD, 2004[3]).

Each OCWD saltwater barrier is compromised of a series of injection wells. This injected water is compromised of deep well water, purified water, and imported water. Each well injects water into four aquifer zones at an average of 12 mgd. Injecting the water into these zones creates a barrier to prevent seawater from migrating inland towards groundwater production (OCWD, 2004[3]).

Recharge primarily consists of Santa Ana River baseflow and storm flow, but does include some imported water and purified water. The Santa Ana River flows below Prado Dam



Source: Orange County Water District website



Source: Orange County Water District website

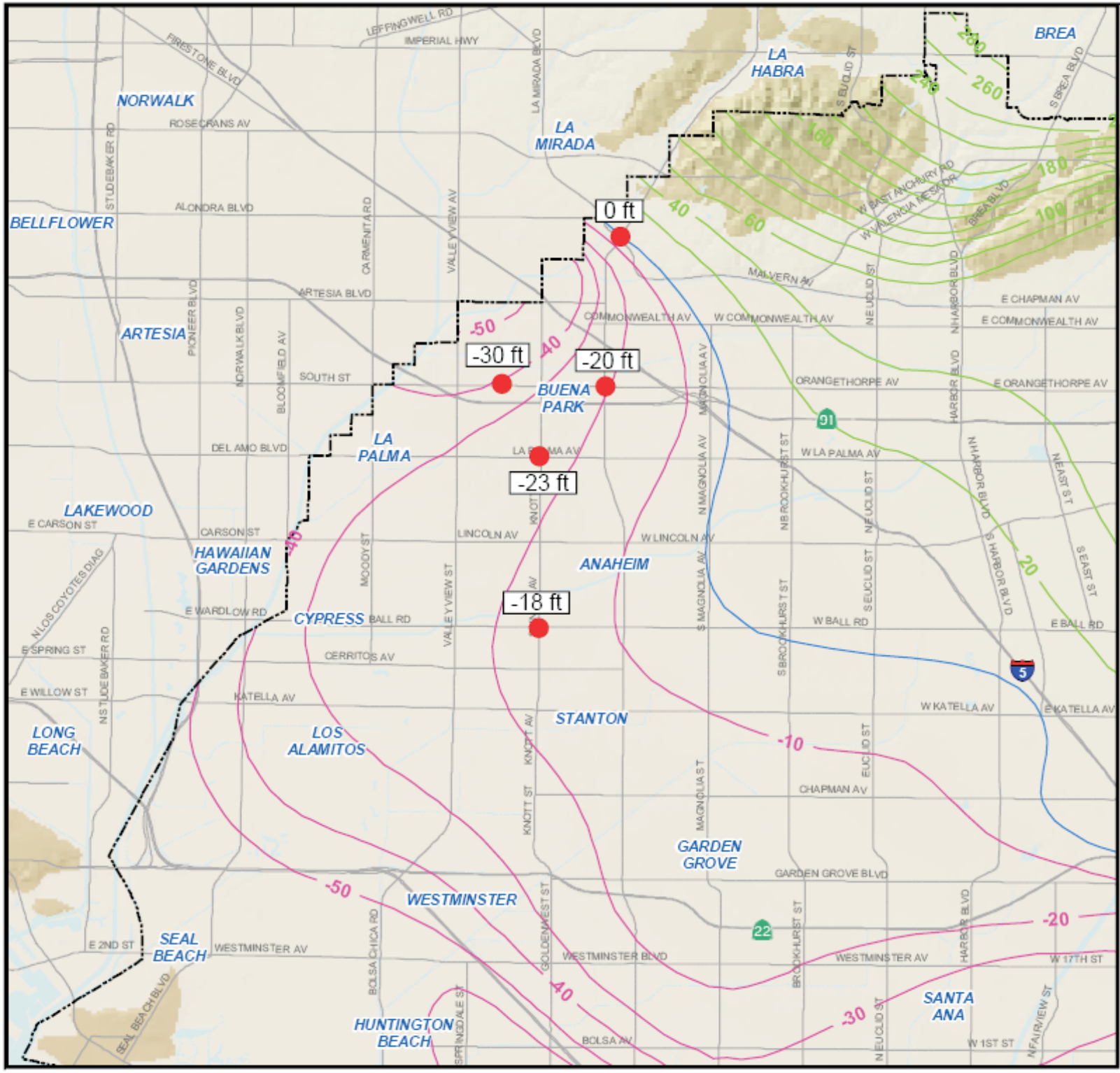


FIGURE 3.5
NOVEMBER 2004 GROUNDWATER CONTOUR MAP

2005 URBAN WATER MANAGEMENT PLAN

CITY OF BUENA PARK

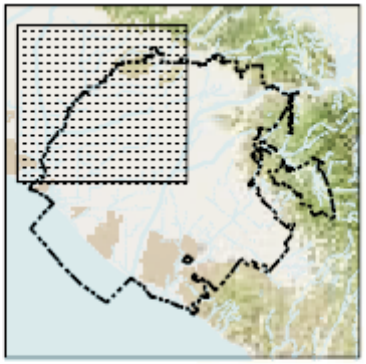
Groundwater Elevations (Feet, MSL)

- -80 - -10
- 0
- 10 - 300

Orange County Water District

Freeways/Highways

Water Features



N
W E
S

1 0 1 Miles

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Source: Orange County Water District website

consist of perennial baseflow and seasonal stormflow. The baseflow is mostly tertiary treated wastewater from areas upstream of Orange County. Future increases in population upstream could result in an increase in baseflow, unless additional reclamation is implemented upstream.

OCWD and Orange County Sanitation District (OCSD) have sponsored the Groundwater Replenishment System (GWRS), which will be on line in 2007. The system will purify secondary wastewater effluent from OCSD for injection into the Talbert seawater intrusion barrier and recharge into the Orange County Groundwater Basin. The GWRS project will result in a drought-proof supply for basin recharge. This system is further discussed in Chapter 9.

3.5.5 Well Yields and Aquifer Characteristics

Pumping rates for the City's wells range from 1,000 to 3,000 gpm. Pumping rates for three of the seven active wells exceed 2,000 gpm.

3.6 WATER SUPPLY PROJECTIONS

To provide adequate water supply facilities, the source must be large enough to meet the varying water demand conditions, as well as provide sufficient water during drought conditions and potential emergencies such as power outages.

3.6.1 Normal Production Capacity

In accordance with industry standard practices and the California Department of Health Services (CDHS) criteria for "Adequate Source Capacity" on water supply, the source should be sized to serve the maximum day demand (MDD). On the day of maximum demand, it is desirable to maintain a water supply rate equal to the MDD rate. Water required for peak hour demands (PHD) or for fire flows would come from storage.

3.6.2 Standby Production Capacity

Standby production capacity is required for system reliability. Under normal operating conditions, it is possible that one or two of the City's wells can be placed out of service during MDD conditions due to equipment malfunction, for servicing, or for water quality concerns. The CDHS criterion for standby production capacity recommends considering the capacity of the largest well being out of service.

The City's current MDD is approximately 24.0 mgd, and City staff indicates there is an instantaneous supply availability of 51.0 mgd (22.6 mgd is from wells and 28.4 mgd is from MWDSC import water).

3.6.3 Future Supply Capacity

The adequate source of supply for the City will consist of groundwater wells and imported water, which provide combined production capacity that continues to meet the MDD.

The Water Master Plan (WMP) which was prepared concurrently within this UWMP, included a review of the City's supply requirements through the planning horizon of 2030. The review evaluated the recommendations of the previous WMP and developed updated projections based on current demand patterns.

Table 3.3 lists the projected water supply, in 5-year increments, through the planning horizon of 2030.

Table 3.3 Current and Projected Water Supply
Urban Water Management Plan
City of Buena Park

Supply Units	Current and Projected Years					
	Existing	2010	2015	2020	2025	2030
mgd	39.1	41.2	41.6	41.9	42.1	42.2
af/y	43,837	46,192	46,585	46,915	47,189	47,303

3.7 DESALINATED WATER

The UWMPA requires that the UWMP include information on desalinated water.

UWMPA:

> 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
>
> 10631 (i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long term supply

3.7.1 Brackish Water and/or Groundwater Desalination

The groundwater basins located under or near the City are not brackish in nature and do not require desalination. Therefore, there is no water of this nature available to the City for direct use. However, the City could provide financial assistance to other MWDOC agencies in exchange for supplies. Communities near the desalination plant would receive the desalinated water and a similar amount of MWDOC-supplied water would be exchanged and allocated to the City. Should the need arise, the City may consider this option.

3.7.2 Ocean Water

According to MWDOC's 2005 Draft UWMP, MWDOC is considering constructing a 10- to 20-mgd reverse osmosis ocean desalination facility. The facility is expected to produce 12,000 to 24,000 af per year, provide drought protection, and system reliability, and

improve water quality by providing a lower level of total dissolved solids (TDS) in the supply (MWDOC, 2005[1]).

Because the City is not located in a coastal area, it is not practical or economically feasible to implement the City's own seawater desalination program.

---

[1] Municipal Water District of Orange County (2005), *Draft Urban Water Management Plan, Fountain Valley, CA*

[2] California Department of Water Resources (2004), *California Groundwater Bulletin 118: South-Coast Hydrologic Region Coastal Plain of Orange County Groundwater Basin, Sacramento, CA. See Appendix C.*

[3] Orange County Water District (2004), *Groundwater Management Plan, Fountain Valley, CA See Appendix D.*

RELIABILITY PLANNING

4.1 GENERAL

The Urban Water Management Planning Act (UWMPA) requires that the Urban Water Management Plan (UWMP) address the reliability of the agency's water supplies. This includes supplies that are vulnerable to seasonal or climatic variations. In addition, an analysis must be included to address supply availability in a single dry year and in multiple dry years.

UWMPA:

> 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
>
> 10631 (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable.
>
> 10631 (c) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.
>
> 10631 (c) Provide data for each of the following: (1) An average water year, (2) A single dry water year, (3) Multiple dry water years.
>
> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (b) An estimate of the minimum water supply available during each of the next three-water years based on the driest three-year historic sequence for the agency's water supply.

The UWMPA also requires that the UWMP include information on the quality of water supplies and how this affects management strategies and supply reliability.

UWMPA:

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

4.2 WATER SUPPLY RELIABILITY

There are two aspects of supply reliability that should be considered. The first relates to immediate service needs and is primarily a function of the availability and adequacy of the supply facilities. The second aspect is climate-related, and involves the availability of water during mild or severe drought periods. This chapter considers the City of Buena Park's

(City's) water supply reliability during three water scenarios: normal water year, single dry water year, and multiple dry water years. These scenarios are defined as follows:

- **Normal Year**:
  The normal year is a year in the historical sequence that most closely represents median runoff levels and patterns. The supply quantities for this condition are derived from historical average yields.
- **Single Dry Year**:
  This is defined as the year with the minimum useable supply. The supply quantities for this condition are derived from the minimum historical annual yield.
- **Multiple Dry Years**:
  This is defined as the three consecutive years with the minimum useable supply. Water systems are more vulnerable to these droughts of long duration, because they deplete water storage reserves in local and state reservoirs and in groundwater basins. The supply quantities for this condition are derived from the minimum historical three consecutive years' annual average yields.

The City's water supply, which is described in more detail in other Chapters, consists of the following three categories:

- Imported Surface Water.
- Groundwater.
- Recycled Water (once GWR System is online).

4.2.1 Standby Production

As described in the previous chapter, standby production capacity is required for system reliability. Under normal operating conditions, it is possible that one or two of the City's wells can be out of service at any time, even during maximum day demand (MDD) conditions due to equipment malfunction, servicing, or water quality concerns.

The California Department of Health Services (CDHS) criteria recommends using the capacity with the largest well out of service to determine standby production capacity.

In addition to this scenario, the Water Master Plan (WMP), draft 2005, has a preliminary list of criteria that will be addressed to provide adequate emergency storage. The WMP will provide recommendations to mitigate the potential impact of lost production capabilities for the following emergency scenarios:

- The loss of the largest well for a period of 7 days of average day demands (ADD).
- The loss of electricity for 2 days of maximum day demands (MDD).

The City's current MDD is about 25.6 mgd. The current supply capacity is 52.5 mgd. The City has upgraded some of the water supply facilities to include redundancy provisions for standby production and source reliability, such as permanent generators, connection points for portable generators, and building a new well (Buena Park Well No. 2) to replace one of a lower capacity. The operation of the City's groundwater wells depends on electricity. Therefore, these facilities may not be as reliable as the existing Metropolitan Water District of Orange County (MWDOC) connections. Backup or alternative energy sources (i.e., backup generators that run on propane, diesel, or natural gas) help to improve the reliability of the groundwater wells and booster pumping station. In addition, the distribution of the City's multiple wells provides added reliability in this supply source, thus reducing the likelihood that all groundwater wells will be out of service simultaneously.

4.2.2 Climate-Related

Based on the Orange County Water District (OCWD) Groundwater Management Plan, an extended drought period in the central California/Nevada area of the Colorado River watershed may cause the availability of supplemental replenishment water from the Metropolitan Water District of Southern California (MWDSC) to be reduced. This may lead to increased demands on the basin. In addition, one of the primary results of an extended drought period is the reduction in MWDSC's recharge water for the basin. These events will require more aggressive demand management practices.

4.2.3 Available Future Water Supplies

Table 4.1 shows the water supply projections through the planning year 2030. For the future planning years, these projections are based on the basin pumping percentage (BPP) (see subsection 3.4.2 for an explanation of the BPP) returning to 75 percent of demands and the entire City's import capacity. With the Groundwater Replenishment System (GWRS) project coming online in 2007 (see Chapter 9 for more on GWRS), it is expected that the BPP will return to 75 percent by 2010.

Table 4.1 Water Supply Reliability
Urban Water Management Plan
City of Buena Park

Year	Supply Source[1]	Normal Water Year (acre-ft/year)	Single Dry Water Year (acre-ft/year)	Multiple Dry Water Years (acre-ft/year)		
				Year 1	Year 2	Year 3
2010				**2008**	**2009**	**2010**
	Local Groundwater	14,399	14,399	14,399	14,399	14,399
	Imported Water	31,793	31,793	31,793	31,793	31,793
2015				**2013**	**2014**	**2015**
	Local Groundwater	14,792	14,792	14,792	14,792	14,792
	Imported Water	31,793	31,793	31,793	31,793	31,793

Table 4.1	Water Supply Reliability Urban Water Management Plan City of Buena Park					
				Multiple Dry Water Years (acre-ft/year)		
Year	Supply Source[1]	Normal Water Year (acre-ft/year)	Single Dry Water Year (acre-ft/year)	Year 1	Year 2	Year 3
2020				**2018**	**2019**	**2020**
	Local Groundwater	15,122	15,122	15,122	15,122	15,122
	Imported Water	31,793	31,793	31,793	31,793	31,793
2025				**2023**	**2024**	**2025**
	Local Groundwater	15,396	15,396	15,396	15,396	15,396
	Imported Water	31,793	31,793	31,793	31,793	31,793
2030				**2028**	**2029**	**2030**
	Local Groundwater	15,510	15,510	15,510	15,510	15,510
	Imported Water	31,793	31,793	31,793	31,793	31,793

Notes:
(1) The current BPP for the City of Buena Park is 66 percent and is used for the existing year. However, it is anticipated that with the activation of the GWRS the BPP will be restored to the historical BPP of 75 percent.

4.3 WATER SHORTAGE EXPECTATIONS

In general, demands during droughts increase to compensate for the lack of rainfall that was benefiting landscape irrigation. The water use projections assume the potential increase will be offset by the increased water conservation measures that will be activated by the City.

4.4 GROUNDWATER QUALITY

The United States Environmental Protection Agency (EPA) is currently considering implementing several new or revised drinking water standards. The Groundwater Rule (GWR) contains measures to establish multiple barriers to further protect against bacteria and viruses in drinking water from the groundwater sources. The GWR will specify when corrective action is required to further protect consumers served by groundwater systems from bacteria and viruses.

4.4.1 Local Groundwater Quality

The City disinfects approximately 40 percent or 7,000 gpm of its groundwater well supply with sodium hypochlorite. Approximately 50 to 75 percent of the City's water is obtained by the City's deep-water wells that are located in various locations throughout the City. OCWD manages the groundwater basin in this area and is also responsible for groundwater

replenishment. This large groundwater basin that lies underneath northern Orange County is supplied via the Santa Ana River, which also includes imported water from the upstream watershed areas that show up as irrigation runoff into the river, or via wastewater discharges. The remainder of the City's water supply is from MWDSC connections, which is in compliance with safe drinking water regulations. The City's imported water supplies originate from two sources, the Colorado River and the east branch of the California State Water Project (SWP). The City safeguards its water supply, and the water delivered to residents and businesses meets or exceeds the standards required by state and federal regulatory agencies. Therefore, the availability of supply is not hindered by water quality impacts.

Table 4.2 summarizes City well water analysis results for chemical constituents during 2004.

Table 4.2 Chemical Quality of Water from City Wells
Urban Water Management Plan
City of Buena Park

Constituent	MCL[1]	PHG[2]	Average Amount Detected
Radiologicals			
Alpha Radiation (pCi/L)	15	N/A	3.9
Inorganic Chemicals			
Arsenic (ppb)	50	0.004	2.6
Nitrate (ppm as NO_3)	45	45	1.7
Secondary Standards[3]			
Chloride (ppm)	500	N/A	26
Manganese (ppb)	50	N/A	11
Sulfate (ppm)	500	N/A	64
Total Dissolved Solids (ppm)	1,000	N/A	324
Unregulated Contaminants Requiring Monitoring			
Bicarbonate (ppm)	Not Regulated	N/A	215
Calcium (ppm)	Not Regulated	N/A	46
Hexavalent Chromium (ppb)	Not Regulated	N/A	<1
Magnesium (ppm)	Not Regulated	N/A	11
pH (pH units)	Not Regulated	N/A	8.1

Table 4.2 Chemical Quality of Water from City Wells
Urban Water Management Plan
City of Buena Park

Constituent	MCL[1]	PHG[2]	Average Amount Detected
Potassium (ppm)	Not Regulated	N/A	2.0
Sodium (ppm)	Not Regulated	N/A	51

Notes:
(1) MCL - Maximum Contaminant Level. This is the highest level of a contaminant that is allowed in drinking water.
(2) PGH - Public Health Goal. The level of a contaminant in drinking water below which there is not known expected risk to health. Values are set by California Environmental Protection Agency.
(3) Secondary Standards are regulated by a secondary standard to maintain aesthetic qualities (taste, color, and odor).
Source: City of Buena Park Water Department 2005 Water Quality Report. See Appendix E.

WATER USE

5.1 GENERAL

The Urban Water Management Planning Act (UWMPA) requires that the Urban Water Management Plan (UWMP) identify the quantity of water supplied to the agency's customers including a breakdown by user classification.

UWMPA:

> 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
>
> 10631 (b) (3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic records.
>
> 10631 (e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the- following uses:
>
> (A) Single-family 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, or conjunctive use, or any combination thereof; and (I) Agricultural.
>
> (2) The water use projections shall be in the same 5-year increments to 20 years or as far as data is available.

5.2 PAST, CURRENT, AND PROJECTED WATER USE

The City of Buena Park's (City's) customers include residential, commercial, industrial, and institutional consumers. Currently, the City maintains approximately 19,649 water meters. The City classified these meters into the following categories: 16,412 residential, 2,210 commercial, and 1,635 industrial. There are approximately 605 meters that are out of service at any time throughout the City and the data for the customer type of these meters is currently unavailable.

5.2.1 Historical Water Use

In 2004, the City supplied 5.7 billion gallons of water, or 17,682 acre-feet per year (af/yr), which is equivalent to 15.8 million gallons per day (mgd) of water serving a population of approximately 81,000. Table 5.1 lists the available historical monthly and annual water supplies from 1994 to 2004.

Table 5.1 Historic Monthly Water Supply
2005 Urban Water Management Plan
City of Buena Park

Year	Monthly Water Supply (MG)												Annual Water Supply				Population[1]			
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Annual (MG)	Average Monthly (MG)	Average Daily (mgd)	Annual Increase (%)	Population	Annual Growth (%)	Per Capita Consumption (GPCD)	Annual Increase (%)
1994	387.0	315.9	380.3	392.1	460.4	562.0	614.8	603.8	544.0	452.8	366.9	356.8	5,436.9	453.1	15.1		72,127		207	
1995	276.3	270.1	296.0	390.2	424.9	453.0	530.7	573.4	506.7	461.7	367.8	348.5	4,899.2	408.3	13.6	-9.9%	72,617	0.7%	185	-10.5%
1996	317.2	290.0	331.4	425.0	530.0	579.1	572.3	598.5	541.9	473.1	406.7	340.5	5,405.7	450.5	15.0	10.3%	72,888	0.4%	203	9.9%
1997	309.7	330.0	473.4	509.3	589.9	524.0	576.5	607.5	501.8	467.9	408.4	312.0	5,610.4	467.5	15.6	3.8%	73,577	0.9%	209	2.8%
1998	336.8	314.0	354.6	380.0	446.6	499.6	619.4	645.3	531.2	482.2	407.9	362.9	5,380.5	448.4	14.9	-4.1%	74,855	1.7%	197	-5.7%
1999	376.8	344.5	397.0	396.6	524.9	574.7	626.5	612.8	556.3	581.0	492.3	485.6	5,969.0	497.4	16.6	10.9%	76,231	1.8%	215	8.9%
2000	410.9	332.1	409.1	537.0	620.6	649.0	690.1	641.5	636.1	522.3	412.9	389.5	6,251.1	520.9	17.4	4.7%	77,962	2.3%	220	2.4%
2001	363.8	309.1	372.2	427.1	534.3	568.8	599.4	610.8	528.6	491.7	384.2	338.5	5,528.5	460.7	15.4	-11.6%	78,799	1.1%	192	-12.5%
2002	353.2	374.2	449.4	484.5	530.3	585.2	631.3	606.8	547.4	479.4	417.7	343.2	5,802.5	483.5	16.1	5.0%	79,540	0.9%	200	4.0%
2003	387.4	336.0	375.5	455.3	509.3	552.1	631.5	627.6	563.5	524.9	432.4	400.8	5,796.3	483.0	16.1	-0.1%	80,407	1.1%	197	-1.2%
2004	399.1	346.8	421.5	465.8	592.6	579.7	632.5	598.0	562.5	436.3	380.6	365.0	5,776.7	481.7	15.8	-0.3%	80,709	0.4%	196	-0.7%
													Average Increase (1994-2004)			0.87%		1.1%		-0.3%

Notes:
(1) Population Source: 2005 Orange County Progress Report, Orange County Population Characteristics, City of Buena Park. See Appendix F.

5.2.2 Maximum Day Demand

One of the water demand conditions of particular significance is the maximum day demand (MDD). This is the highest water demand during a 24-hour period of the year. The MDD peaking factor is expressed as a multiplier applied to the average day demand. Water system sources are typically sized to meet the anticipated MDD with the largest supply source out of service.

The Water Master Plan (WMP), draft April 2005, established that the City's average day demand (ADD) is 11,113 gallons per minute (gpm), which is equivalent to 16.0 mgd. A peaking factor of 1.58 was used for the MDD analysis of future water demands.

5.2.3 Past, Current, and Projected Per-Capita Consumption

The historical per capita consumption rate is frequently used with population projections to estimate the City's future water requirements, evaluate the adequacy of existing supply sources, and determine storage needs. The City's WMP also used per-capita projections to determine future demands. The consumption rate, expressed in gallons per capita per day (gpcd), is applied to the projected population to yield future water requirements. A per capita production requirement of 200 gpcd was derived from reviewing the average consumption rates over the past five years.

5.2.4 Projected Water Use

Based on the future trends in population obtained from the 2005 Orange County Progress Report and the established per capita water consumption rates, the City's future water requirements were estimated and summarized in Table 5.2 and Figure 5.1. In addition to the projected ADD, Table 5.2 includes annual estimates for the MDD, through the planning horizon year of 2030. Based on these projections, it is anticipated that the City's average day and maximum day requirements for 2030 will approach 18.5 mgd (12,844 gpm) and 29.2 mgd (22,293 gpm), respectively.

Table 5.2 Past, Current, and Projected Water Use
2005 Urban Water Management Plan
City of Buena Park

Average Supply						
			Supply			Maximum Day Demands (mgd)
Year	Population[(1),(2)]	Per Capita Consumption (gpcd)	(af/y)	(mg/y)	(mgd)	
1995	72,617	185	15,046	4,903	13.4	21.2
1996	72,888	203	16,572	5,401	14.8	23.4
1997	73,577	209	17,223	5,613	15.4	24.3

Table 5.2 Past, Current, and Projected Water Use
2005 Urban Water Management Plan
City of Buena Park

Average Supply						
			Supply			Maximum Day Demands (mgd)
Year	Population[(1),(2)]	Per Capita Consumption (gpcd)	(af/y)	(mg/y)	(mgd)	
1998	74,855	197	16,516	5,382	14.7	23.3
1999	76,231	215	18,356	5,982	16.4	25.9
2000	77,962	220	19,210	6,260	17.2	27.1
2001	78,799	192	16,945	5,522	15.1	23.9
2002	79,540	200	17,817	5,806	15.9	25.1
2003	80,407	197	17,741	5,782	15.8	25.0
2004	80,709	196	17,717	5,774	15.8	25.0
2005	81,608	200	18,280	5,957	16.3	25.8
2010	85,855	200	19,198	6,257	17.1	27.0
2015	88,205	200	19,723	6,429	17.6	27.9
2020	90,169	200	20,162	6,572	18.0	28.5
2025	91,642	200	20,528	6,690	18.3	29.0
2030	92,481	200	20,680	6,741	18.5	29.2

Notes:
(1) Population Source: 2005 Orange County Progress Report, Orange County Population Characteristics, City of Buena Park. See Appendix F.
(2) Population Projections Source: Southern California Association of Governments (SCAG).

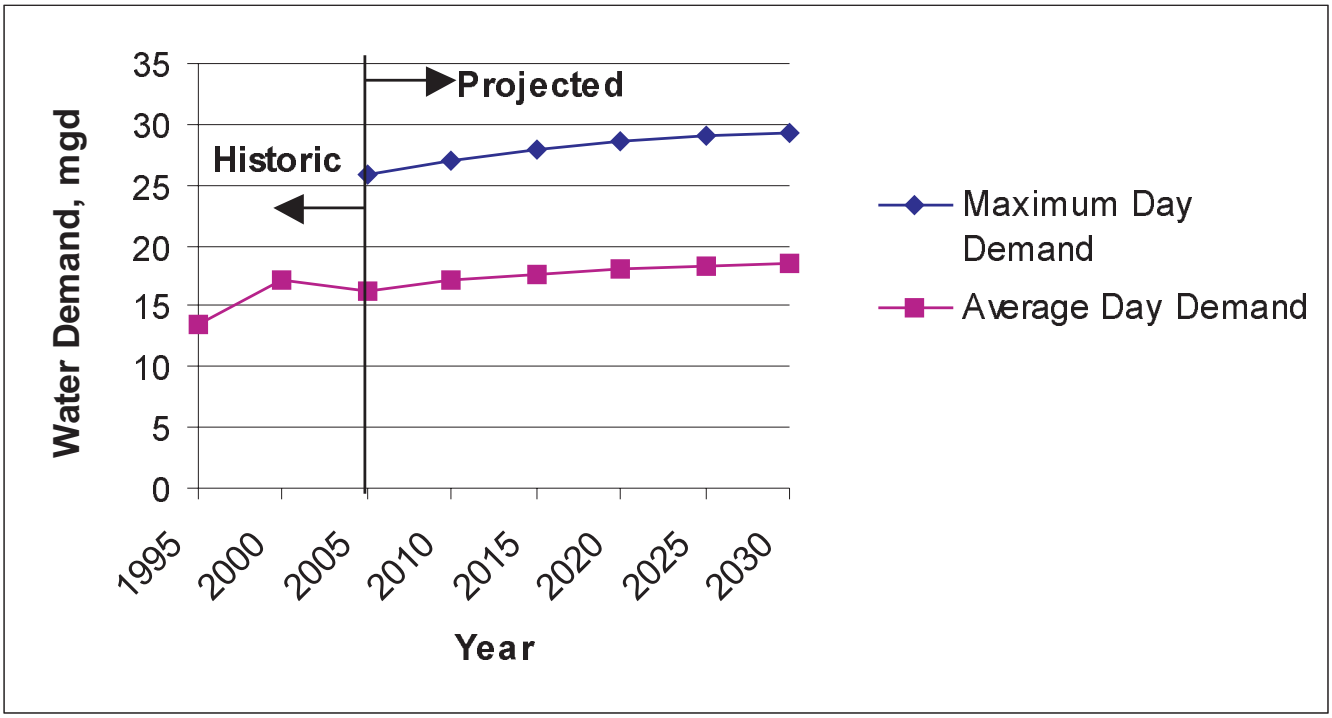

FIGURE 5.1
PAST, CURRENT AND PROJECTED WATER USE

2005 URBAN WATER MANAGEMENT PLAN

CITY OF BUENA PARK

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5.2.5 Expansion Projects

The UWMPA requires that the UWMP identify the major developments within the agency's service area that would require water supply planning.

UWMPA:

> 10910. (a) Any city or county that determines that a project, as defined in section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.
>
> 10912. For the purpose of this part, the following terms have the following meanings:
>
> 10912 (a) "Project" means any of the following:
> (1) A proposed residential development of more than 500 dwelling units.
> (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
> (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
> (4) A proposed hotel or motel, or both, having more than 500 rooms.
> (5) A proposed industrial, manufacturing or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
> (6) A mixed-use project that includes one or more of the projects specified in this subdivision.
> (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Although there is planned redevelopment within the City including single-family residences, commercial centers, and motels, the City does not currently have any planned expansion projects, as defined in Water Code Section 10912 of the UWMPA.

SUPPLY AND DEMAND COMPARISON

6.1 GENERAL

The Urban Water Management Planning Act (UWMPA) requires that the Urban Water Management Plan (UWMP) demonstrate that sufficient water supplies will be available to meet the next 25 years of projected water demands.

UWMPA:

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

6.2 SUPPLY AND DEMAND COMPARISON

The City of Buena Park (City) currently has the water supply capabilities to meet maximum day demand (MDD) while also providing adequate standby production capacity to provide reliable service.

Comparisons of projected supplies and demands are shown in Table 6.1 and Figure 6.1. Table 6.1 indicates that the City's supply capacity will consistently meet the demand requirements for all the planning years through 2030. For the year 2030, a total demand of approximately 20,680 acre-feet per year (af/yr) is projected, compared with a projected supply capability for that same year of 47,303 af/yr.

Table 6.1 Projected Supply and Demand Comparison
Urban Water Management Plan
City of Buena Park

Condition	Demand (af)	Demand (mgd)	Available Supply[1] Supply Source	Available Supply[1] (af)	Available Supply[1] Total (af)	Available Supply[1] (mgd)	Supply Deficit (mgd)
Existing							
Normal	18,248	16.3	Local Groundwater	12,044	43,837	39.1	None
			Import Water	31,793			
Single Dry Water Year	18,248	16.3	Local Groundwater	12,044	43,837	39.1	None
			Import Water	31,793			
Multiple Dry Year:							
Year 1	18,248	16.3	Local Groundwater	12,044	43,837	39.1	None
			Import Water	31,793			
Year 2	18,248	16.3	Local Groundwater	12,044	43,837	39.1	None
			Import Water	31,793			
Year 3	18,248	16.3	Local Groundwater	12,044	43,837	39.1	None
			Import Water	31,793			
2010							
Normal	19,198	17.1	Local Groundwater	14,399	46,192	41.2	None
			Import Water	31,793			
Single Dry Water Year	19,198	17.1	Local Groundwater	14,399	46,192	41.2	None
			Import Water	31,793			
Multiple Dry Year:							
Year 1	19,198	17.1	Local Groundwater	14,399	46,192	41.2	None
			Import Water	31,793			

Table 6.1 Projected Supply and Demand Comparison
Urban Water Management Plan
City of Buena Park

Condition	Demand (af)	Demand (mgd)	Available Supply[1] Supply Source	Available Supply[1] (af)	Available Supply[1] Total (af)	Available Supply[1] (mgd)	Supply Deficit (mgd)
Year 2	19,198	17.1	Local Groundwater	14,399	46,192	41.2	None
			Import Water	31,793			
Year 3	19,198	17.1	Local Groundwater	14,399	46,192	41.2	None
			Import Water	31,793			
2015							
Normal	19,723	17.6	Local Groundwater	14,792	46,585	41.6	None
			Import Water	31,793			
Single Dry Water Year	19,723	17.6	Local Groundwater	14,792	46,585	41.6	None
			Import Water	31,793			
Multiple Dry Year:							
Year 1	19,723	17.6	Local Groundwater	14,792	46,585	41.6	None
			Import Water	31,793			
Year 2	19,723	17.6	Local Groundwater	14,792	46,585	41.6	None
			Import Water	31,793			
Year 3	19,723	17.6	Local Groundwater	14,792	46,585	41.6	None
			Import Water	31,793			
2020							
Normal	20,162	18.0	Local Groundwater	15,122	46,915	41.9	None
			Import Water	31,793			
Single Dry Water Year	20,162	18.0	Local Groundwater	15,122	46,915	41.9	None
			Import Water	31,793			

Table 6.1 Projected Supply and Demand Comparison
Urban Water Management Plan
City of Buena Park

Condition	Demand (af)	Demand (mgd)	Available Supply[1] Supply Source	Available Supply[1] (af)	Available Supply[1] Total (af)	Available Supply[1] (mgd)	Supply Deficit (mgd)
Multiple Dry Year:							
Year 1	20,162	18.0	Local Groundwater	15,122	46,915	41.9	None
			Import Water	31,793			
Year 2	20,162	18.0	Local Groundwater	15,122	46,915	41.9	None
			Import Water	31,793			
Year 3	20,162	18.0	Local Groundwater	15,122	46,915	41.9	None
			Import Water	31,793			
2025							
Normal	20,528	18.3	Local Groundwater	15,396	47,189	42.1	None
			Import Water	31,793			
Single Dry Water Year	20,528	18.3	Local Groundwater	15,396	47,189	42.1	None
			Import Water	31,793			
Multiple Dry Year:							
Year 1	20,528	18.3	Local Groundwater	15,396	47,189	42.1	None
			Import Water	31,793			
Year 2	20,528	18.3	Local Groundwater	15,396	47,189	42.1	None
			Import Water	31,793			
Year 3	20,528	18.3	Local Groundwater	15,396	47,189	42.1	None
			Import Water	31,793			

Table 6.1 Projected Supply and Demand Comparison
Urban Water Management Plan
City of Buena Park

Condition	Demand (af)	Demand (mgd)	Available Supply[1] Supply Source	Available Supply[1] (af)	Available Supply[1] Total (af)	Available Supply[1] (mgd)	Supply Deficit (mgd)
2030							
Normal	20,680	18.5	Local Groundwater	15,510	47,303	42.2	None
			Import Water	31,793			
Single Dry Water Year	20,680	18.5	Local Groundwater	15,510	47,303	42.2	None
			Import Water	31,793			
Multiple Dry Year:							
Year 1	20,680	18.5	Local Groundwater	15,510	47,303	42.2	None
			Import Water	31,793			
Year 2	20,680	18.5	Local Groundwater	15,510	47,303	42.2	None
			Import Water	31,793			
Year 3	20,680	18.5	Local Groundwater	15,510	47,303	42.2	None
			Import Water	31,793			

Notes:
(1) The current Basin Pumping Percentage (BPP) (see subsection 3.4.2 for an explanation of the BPP) for the City of Buena Park is 66 percent and is used for the existing year. However, it is anticipated that with the activation of the Groundwater Replenishment System (GWRS) the BPP will be restored to the historical BPP of 75 percent.

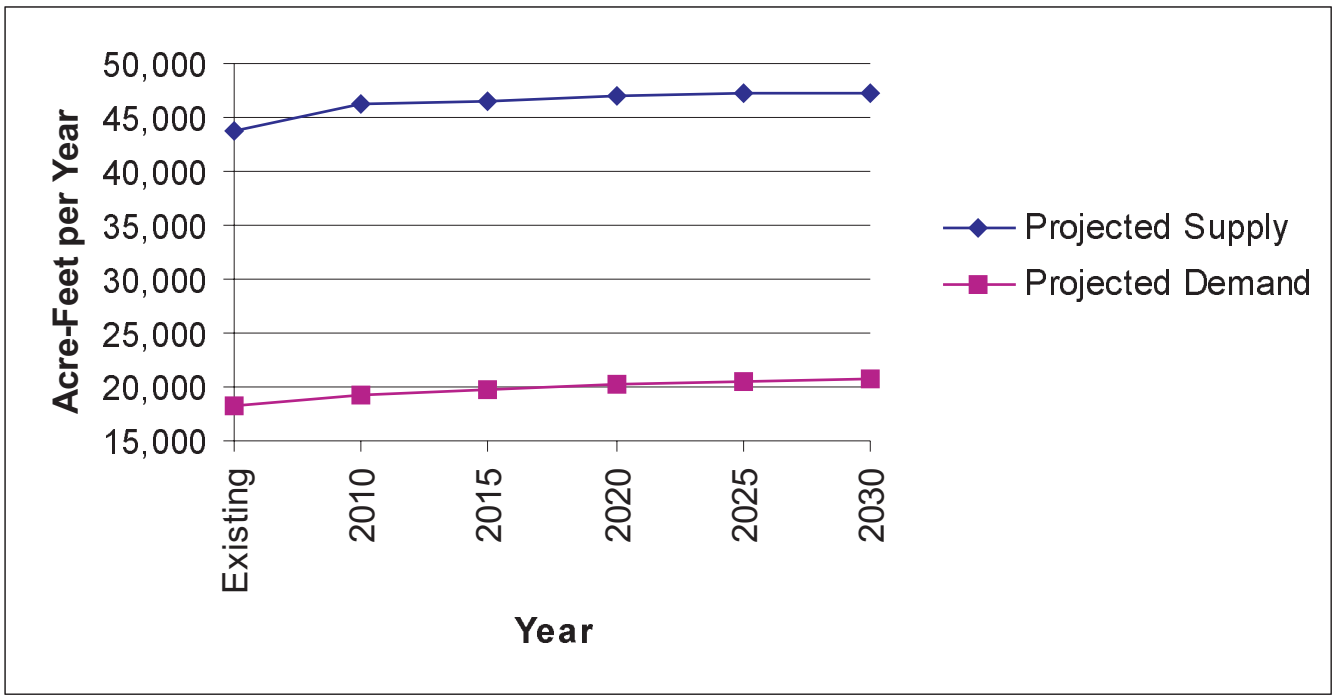

FIGURE 6.1
PROJECTED SUPPLY AND DEMAND COMPARISON

2005 URBAN WATER MANAGEMENT PLAN

CITY OF BUENA PARK

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WATER DEMAND MANAGEMENT MEASURES

In 1991, a Memorandum of Understanding (MOU) regarding urban water conservation in California formed the California Urban Water Conservation Council (CUWCC). Council members can submit their most recent Best Management Practices (BMP) Report with their UWMP to address the urban water conservation issues in the Urban Water Management Planning Act (UWMPA).

However, the City of Buena Park (City) is not currently a signatory of the MOU and is therefore not a member of CUWCC. The City realizes the importance of the BMPs to ensure a reliable future water supply and is committed to implementing water conservation and water recycling programs to maximize sustainability in meeting future water needs for its customers.

The City's previous Urban Water Management Plan (2000 Plan) provided information regarding the City's conservation measures already in place and those that would improve the efficiency of water use within the City.

This chapter addresses the following requirements of the UWMPA.

UWMPA:

> 10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
>
> (1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:
>
> (A) Water survey programs for single-family residential and multifamily residential customers.
>
> (B) Residential plumbing retrofit.
>
> (C) System water audits, leak detection, and repair.
>
> (D) Metering with commodity rates for all new connections and retrofit of existing connections.
>
> (E) Large landscape conservation programs and incentives.
>
> (F) High-efficiency washing machine rebate programs.
>
> (G) Public information programs.
>
> (H) School education programs.
>
> (I) Conservation programs for commercial, industrial, and institutional accounts.
>
> (J) Wholesale agency programs.
>
> (K) Conservation pricing.
>
> (L) Water conservation coordinator.
>
> (M) Water waste prohibitions.
>
> (N) Residential ultra-low-flush toilet replacement programs.

The California Department of Water Resources (DWR) has assigned an enhanced terminology to the BMPs. Accordingly, this chapter will refer to them as Demand Management Measures (DMMs).

Table 7.1 Demand Management Measures
2005 Urban Water Management Plan
City of Buena Park

Demand Management Measure	Implemented	Planned for Implementation	Not Applicable
DMM 1 - Water Survey Programs	✓		
DMM 2 - Residential Plumbing Retrofit	✓		
DMM 3 - Water System Audits	✓		
DMM 4 - Metering with Commodity Rates	✓		
DMM 5 - Landscape Irrigation Programs	✓		
DMM 6 - Washing Machine Rebate Program	✓		
DMM 7 - Public Information Program	✓		
DMM 8 - School Education Program	✓		
DMM 9 - Commercial, Industrial, and Institutional Conservation Programs	✓		
DMM 10 - Wholesale Agency Programs			✓
DMM 11 - Conservation Pricing		✓	
DMM 12 - Water Conservation Coordinator	✓		
DMM 13 - Water Waste Prohibition	✓		
DMM 14 - Ultra Low Flush Toilet Replacement	✓		

7.1 DMM 1 - WATER SURVEY PROGRAMS FOR SINGLE-FAMILY RESIDENTIAL AND MULTIFAMILY RESIDENTIAL CUSTOMERS

This program consists of offering water audits to residential customers. Audits include reviewing water usage history with the customer, identifying leaks inside and outside the home, and recommending improvements.

Upon request, City personnel will perform on-site inspection of residences and businesses for potential internal leaks. Leak detection kits are available and are provided to residents free of charge, upon request.

The City may consider expanding the program to include free landscaping audits to residential users. As an incentive to complete the audit, the City might provide free low-flow showerheads and kitchen/bathroom shut-off nozzles.

7.2 DMM 2 - RESIDENTIAL PLUMBING RETROFIT

This program consists of installing physical devices to reduce the amount of water used or to limit the amount of water that can be served to the customer. In accordance with State law, low-flow fixtures have been required on all new construction since 1978. In addition, State legislation enacted in 1990 requires all new buildings after January 1, 1992 to install Ultra-Low-Flush Toilets (ULFT).

Several studies suggest that water use savings resulting from miscellaneous interior retrofit fixtures can range between 25 and 65 gpd per housing unit. The studies also suggest that installation of retrofit fixtures in older single-family homes tend to produce more savings, while newer multi-family homes tend to produce fewer saving per housing unit.

The City has historically provided retrofit kits to its customers. However, it has not done so within the past few years due to funding limitations. The City plans to make the retrofit kits available again to its customers starting in 2006 and continue the program as their budget permits.

7.3 DMM 3 - SYSTEM WATER AUDITS, LEAK DETECTION, AND REPAIR

A water audit is a process of accounting for water use throughout a water system in order to quantify the unaccounted-for water. Unaccounted-for water is the difference between metered production and metered usage on a system-wide basis.

In 1985, the City conducted a leak detection program that investigated the distribution system for loss. The City randomly selected large and small water meters, and computed all water uses in water loss such as large fires, water main leaks, and fire hydrants (hit by vehicles). The overall system loss was less than 5 percent. The City continues to investigate the water system for increases in water loss and continues to minimize water leaks.

7.4 DMM 4 - METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS

This DMM requires water meters for all new connections and billing by volume of use, as well as establishment of a program for retrofitting any existing unmetered connections.

All connections within the City are metered and customers are billed according to the amount of water used. In 2000, the City completed a meter change out program that replaced 16,000 old meters with new touch-read meters. The new meters are more accurate than the old ones and allow the City staff to maintain more accurate usage figures.

7.5 DMM 5 - LARGE LANDSCAPE CONSERVATION PROGRAMS AND INCENTIVES

This DMM calls for agencies to start assigning reference evapotranspiration (ETo) -based water budgets to accounts with dedicated irrigation meters and to provide water-use audits to accounts with mixed-use meters.

All new development in the City is conditioned to ensure that landscaped areas are graded and irrigated to obtain the most efficient use of metered irrigation supply to minimize water run-off.

Financial incentives, including regional funding from Metropolitan Water District of Southern California, are also available to improve landscape water use efficiency.

7.6 DMM 6 - HIGH-EFFICIENCY WASHING MACHINE REBATE PROGRAM

This program generally provides financial incentives (rebate offers) to qualifying customers who install high-efficiency washing machines in their homes.

MWDOC has taken the lead in offering rebates to the City's customers. MWDOC offers a $100 rebate for each high-efficiency washing machine purchased and installed properly. These machines typically use 15 to 25 gallons less water per load than typical washers, with a potential water savings of up to 7,000 gallons per year. Currently, over 200 City customers have qualified for this rebate, resulting in a water savings of almost one million gallons per year.

7.7 DMM 7 - PUBLIC INFORMATION PROGRAMS

This program consists of distributing information to the public through a variety of methods including brochures, radio, television, school presentations and videos, and websites.

During Water Awareness Month, which occurs in May of every year, the City aggressively promotes water conservation tips to its residents through water bill inserts and the City website.

7.8 DMM 8 - SCHOOL EDUCATION PROGRAM

This DMM requires water suppliers to implement a school education program that includes providing educational materials and instructional assistance.

MWDOC offers water education programs to Orange County public and private schools. They also supply each school with instructional manuals, videotapes, cassettes, and cartoon books that illustrate water conservation tips and techniques. MWDOC provides teachers with handbooks and work materials on class instruction on the water cycle and drought measures. Since 2000, MWDOC has given over 140 presentations to classes in the City.

7.9 DMM 9 - CONSERVATION PROGRAMS FOR COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL ACCOUNTS

MWDOC has a commercial, industrial, and institutional (CII) rebate program for replacing high-flow devices with low-flow ones, but does not conduct surveys for CII accounts. Since 2000, 73 CII accounts have been retrofitted with low-flow devices.

7.10 DMM 10 - WHOLESALE AGENCY PROGRAMS

This DMM applies to wholesale agencies and defines a wholesaler's role in terms of financial, technical, and programmatic assistance to its retail agencies implementing DMMs.

The City is not a wholesale agency, so this DMM does not apply.

7.11 DMM 11 - CONSERVATION PRICING

The City does not use seasonal rates or a declining rate structure. Water meters are read bi-monthly and consumers are billed monthly at a set rate for each 1,000 gallons of water consumed.

The City has not implemented this DMM. However, implementation of this program is planned within the next five years.

7.12 DMM 12 - WATER CONSERVATION COORDINATOR

The Public Works Director is responsible for coordinating and expanding the City's water conservation program and providing residents with useful water conservation information.

7.13 DMM 13 - WATER WASTE PROHIBITION

Section 6 of City Ordinance 1270 (see Appendix G) prohibits consumers from wasting or misusing water. The City may discontinue service if repeated violations occur.

7.14 DMM 14 - RESIDENTIAL ULTRA-LOW-FLUSH TOILET REPLACEMENT PROGRAMS

State legislation requires the installation of efficient plumbing in new construction and, effective in 1994, requires that only ULFTs be sold in California.

Over the past 10 years, MWDOC has had two types of ULFT programs. The first is a rebate program, which provides a rebate as an incentive to replace a less water-efficient toilet with a ULFT. The second program was a distribution program. Starting in 2002, ULFTs were distributed at no charge within the City as a joint effort by MWDOC and Orange County Water District. There have been over 8,000 ULFTs installed in the City since 1994 and over 5,500 since 2000. This has resulted in a water savings of approximately 70 million gallons per year.

WATER SHORTAGE CONTINGENCY PLAN

8.1 GENERAL

The Urban Water Management Planning Act (UWMPA) requires that the Urban Water Management Plan (UWMP) include an urban water shortage contingency analysis that includes stages of action to by undertaken in the event of water supply shortages; a draft water shortage contingency resolution or ordinance; prohibitions, consumption reduction methods and penalties; an analysis of revenue and expenditure impacts and measures to overcome these impacts; actions to be taken during a catastrophic interruption; and a mechanism for measuring water use reduction.

8.2 STAGES OF ACTIONS

The UWMPA requires that the UWMP include an urban water shortage contingency analysis that addresses specified issues.

UWMPA:

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

8.2.1 Water Shortage Stages and Reduction Objectives

The supply capacity is designed to meet maximum day demand (MDD) plus standby. This supply can therefore meet the average day demands through the planning horizon of 2030.

Water agencies relying largely on groundwater, such as the City of Buena Park (City), are less likely to experience severe water shortages than those agencies relying solely on surface water. Nevertheless, it is still important for groundwater agencies to reduce production during drought years to avoid excessive overdraft of the groundwater basin.

The City has developed a four-stage rationing plan (Table 8.1) that will be invoked during declared water shortages. Each stage includes a water reduction objective, expressed as a percentage of normal demands. The rationing plan is dependent on the cause, severity, and anticipated duration of the water supply shortage.

Table 8.1	Water Shortage Stages and Reduction Objectives 2005 Urban Water Management Plan City of Buena Park	
Stage	**Description**	**Objectives**
1	Voluntary 10% Reduction	• Single-family homes shall use less than 650 gpd. • Multi-unit residential shall use less than 450 gpd. • Apartment buildings and motels shall use less than 350 gpd per unit.
2	Mandatory 15% Reduction	• Single-family homes shall use less than 625 gpd. • Multi-unit residential shall use less than 425 gpd. • Apartment buildings and motels shall use less than 325 gpd per unit. • All commercial and industrial business establishments shall reduce water consumption by 5%.
3	Mandatory 20% Reduction	• Single-family homes shall use less than 600 gpd. • Multi-unit residential shall use less than 400 gpd. • Apartment buildings and motels shall use less than 300 gpd per unit. • All commercial and industrial business establishments shall reduce water consumption by 10%.
4	Mandatory 25% to 50% Reduction(2)	• Single-family homes shall use less than 550 gpd. • Multi-unit residential shall use less than 350 gpd. • Apartment buildings and motels shall use less than 275 gpd per unit. • All commercial and industrial business establishments shall reduce water consumption by 15%.

Notes:
(1) Source: City of Buena Park, Ordinance No. 1270. See Appendix G.
(2) This includes a proposed change to the City's existing water ordinance. The City Council plans to adopt this change by 2006.

8.2.2 Water Reduction Stage Triggering Mechanisms

Emergency response stage actions become effective when the City Council declares that the City is unable to provide sufficient water supply to meet ordinary demands, to the extent that insufficient supplies would be available for human consumption, sanitation, and fire

protection. The declaration will be based on their judgment concerning the degree of the immediate or future supply deficiency.

A combination of voluntary and mandatory water conservation measures would be used to reduce water usage in the event of water shortages. Reduction in deliveries is based upon the amount of water delivered to that customer during the preceding year.

8.2.3 Administration of Water Shortage Program

The administration of a water shortage program as described in this section would involve coordination among a number of City departments. It is anticipated that the Public Works Department would have primary responsibility for managing the program, since it is responsible for the City's water system. The Director of Public Works would be the primary coordinator of water shortage activities.

An appropriate organizational structure for water shortage management team would be determined based on the actual situation. Figure 8.1 presents an example of a typical organizational structure. Specific individuals would be designated to fill the identified roles. The City would probably not have to hire additional staff or outside contractors to implement the program.

The major elements to be considered in administering and implementing the program include:

- Identifying the City staff members to fill the key roles on the water shortage management team. It is anticipated that the Public Works Director would designate the appropriate individuals, including the Program Manager.
- Intensifying the public information program to provide comprehensive information on the water shortage, including necessary actions that must be undertaken by the City and by the public. By reviewing published references, especially those published by the Department of Water Resources (DWR), and researching successful aspects of the current programs conducted by neighboring water agencies, the City can develop the scope of the public information program. A public information hotline may be advisable to answer any questions regarding the program.
- Monitoring program effectiveness. Ongoing monitoring will be needed to track supply availability and actual water user reductions. This procedure will allow the City to continuously reevaluate the situation and make informal decisions regarding whether another reduction level is needed.
- Enforcing program requirements. From the 10- to 25-percent reduction programs, enforcement of water use prohibitions and water use allocations will become even more important to achieving the program goals. Inspectors and enforcement personnel could be identified among City staff that are in the community on other business, such as police, Parks Division, street maintenance, meter readers, etc.

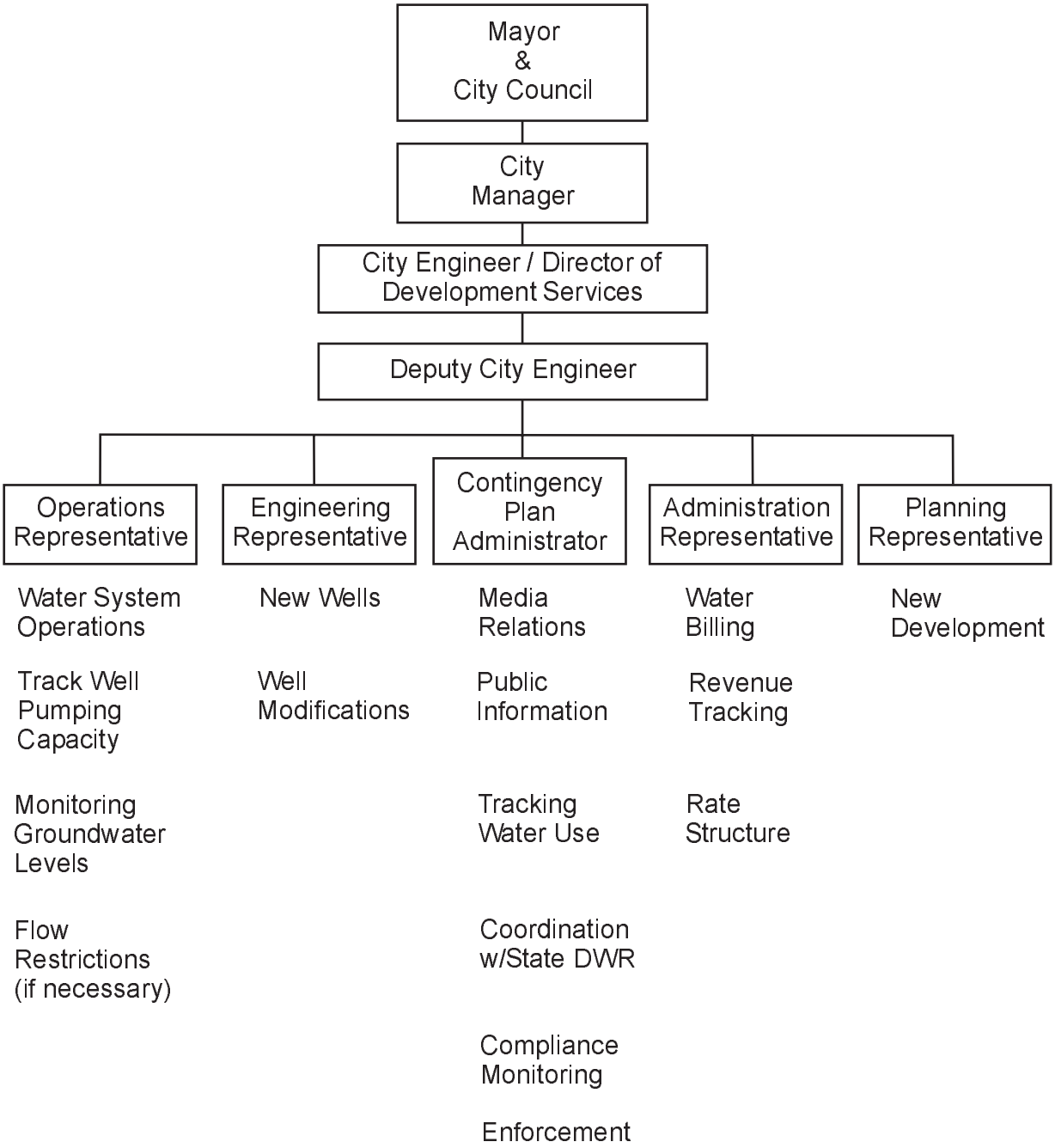

FIGURE 8.1
WATER SHORTAGE CONTINGENCY PLAN
TYPICAL MANAGEMENT TEAM ORGANIZATION

2005 URBAN WATER MANAGEMENT PLAN

CITY OF BUENA PARK

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carollo engineers

- Addressing equity issues that might arise from the mandatory restrictions or higher water rates. Depending on the level of restriction, there may be a need to address specific concerns of individual customers who might have special conditions or extenuating circumstances and are unduly affected by the program. A procedure should be identified for dealing with such special requests and/or for reviewing specific accounts.
- Adjusting water rates. Revenues from water sales should be reviewed periodically to determine whether an increase in rates might be needed to cover revenue shortfalls due to the decrease in demand.
- Addressing new development proposals. During periods of severe water shortage, it may be necessary to impose additional requirements on new development to reduce new demand or to temporarily curtail new hook-ups.

It is required that the water shortage contingency plan undergo a formal public review process including a public hearing. A thorough public review process will help minimize future objections when mandatory prohibitions are needed.

8.3 WATER SHORTAGE CONTINGENCY ORDINANCE/ RESOLUTION

According to the UWMPA, the UWMP is required to include an urban water shortage contingency analysis that includes a draft water shortage contingency resolution or ordinance.

UWMPA:

> 10632. The plan shall provide an urban water shortage contingency analysis, which includes each of the following elements, which are within the authority of the urban water supplier:
>
> 10632 (h) A draft water shortage contingency resolution or ordinance.

The City adopted its Water Shortage Contingency Plan on June 24, 1991. A copy of the ordinance is included in Appendix G. The City adopted its current UWMP on December 13, 2005. A copy of the adopting resolution is included in Appendix A. Ten days prior to adoption, a notice of the public hearing was published in the local newspaper notifying interested parties that the Draft UWMP and Urban Water Shortage Contingency Plan (Contingency Plan) were available at the City Clerk's office and the City's Corporation Yard for review.

8.4 PROHIBITIONS, CONSUMPTION REDUCTION METHODS, AND PENALTIES

The UWMPA requires that the UWMP include an urban water shortage contingency analysis that addresses methods to reduce consumption.

UWMPA:

> 10632. The plan shall provide an urban water shortage contingency analysis, which includes each of the following elements, which are within the authority of the urban water supplier:
>
> 10632 (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
>
> 10632 (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
>
> 10632 (f) Penalties or charges for excessive use, where applicable.

8.4.1 Mandatory Prohibitions on Water Wasting

Mandatory compliance measures enacted during a water shortage are more severe than voluntary measures, produce greater savings, and are less costly to the utility. The principal drawback to these measures could result from customer resentment if the measures are not seen as equitable. Therefore, such measures need to be accompanied by a good public relations campaign.

Mandatory measures may include:

- Ordinances making water waste illegal.
- Ordinances controlling landscape irrigation.
- Ordinances restricting nonirrigation outdoor water uses.
- Prohibitions on new connections or the incorporation of new areas.
- Rationing.

Prohibitions on new development may conflict with other policies and needs. However, if existing customers are called upon to make sacrifices during a drought period, they may feel that water agencies should concentrate on fulfilling current obligations rather than taking on new customers. Such prohibitions may need to be considered in the event of a critical shortage, such as the 25-percent reduction program. If necessary, an offset program might be considered whereby developers demonstrate that they will implement measures to conserve at least as much water in the existing community as their new project will use. In some cases, a two-to-one offset may be required of the new development.

8.4.2 Excessive Use Penalties

Customers violating the regulations and restrictions on water use set forth in Ordinance No. 1270 shall receive the following actions by the City:

- First Violation of Phase 1 measures. A written notice of violation shall be sent to the customer with information on how to conserve water.
- First Violation of Phases 2, 3, or 4. A written notice of violation shall be sent to the customer detailing that the assistance is available to help reduce water consumption. Customer will also be informed that the next violation will result in a $25 penalty.
- Second Violation of Phases 2, 3, or 4. A written notice of violation shall be sent to the customer and a $25 penalty will assessed to their account.
- Subsequent Violations of Phases 2, 3, or 4 by residential customers. A written notice of the violation shall be issued and a $50 penalty will be assessed to their account. Service may also be discontinued or restricted.
- Subsequent Violations of Phases 2, 3, or 4 by industrial or commercial customers. A written notice of the violation shall be issued and a penalty of $25 for each percentile of water used above the allotted amount shall be assessed.

8.4.3 Review Process

Any customer may request to be exempted from the measures set forth in Ordinance No. 1270 (Appendix G). All requests must be made in writing and submitted to the Director of Public Works. The Director has 15 days to prepare a written decision. Within 10 days of the date of the Director's written decision, the customer may file a written appeal with the City Council established Water Appeals Board. The Appeals Board will have 30 days from the date of the request to prepare a written decision, unless more information is requested. If more information is requested, the Board shall have 30 days from the date that the additional information is received to prepare a written decision. The decision of the Appeals Board is final.

8.5 REVENUE AND EXPENDITURE IMPACTS/MEASURES TO OVERCOME IMPACTS

According to the UWMPA, the UWMP is required to include an urban water shortage contingency analysis that addresses the financial impacts from reduced water sales.

UWMPA:

> 10632. The plan shall provide an urban water shortage contingency analysis, which includes each of the following elements, which are within the authority of the urban water supplier:
>
> 10632 (g) 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) An analysis of the impacts of each of the proposed measures to overcome those revenue and expenditure impacts, such as the development of reserves and rate adjustments.

The majority of operating costs for most water agencies are fixed rather than a function of the amount of water sold. As a result, when significant conservation programs are undertaken, it is frequently necessary to raise water rates because the revenue generated is based on lower total consumption while the revenue required is basically fixed.

To cover any revenue shortfall expected from a drought, the City Council can appropriate the use of reserves. Reductions in water demands, especially peak demands, can delay the need to develop costly new water sources in growing communities. Therefore, to help offset some lost revenues, expansion projects can be delayed. In addition, revenues will be generated through penalties on excessive use as defined in Ordinance No. 1270.

8.6 ACTIONS DURING A CATASTROPHIC INTERRUPTION

The UWMPA requires that the UWMP include an urban water shortage contingency analysis that addresses a catastrophic interruption of water supplies.

UWMPA:

> 10632. The plan shall provide an urban water shortage contingency analysis, which includes each of the following elements, which are within the authority of the urban water supplier:
>
> 10632 (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

During declared shortages, or when a shortage declaration appears imminent, the Director of Public Works will activate a water shortage response team. The team may include: public works, water, fire, planning, health, and emergency services. Other actions and procedures to follow during catastrophic events will be developed.

8.7 REDUCTION MEASURING MECHANISM

The UWMPA requires that the UWMP include an urban water shortage contingency analysis that addresses a catastrophic interruption of water supplies.

UWMPA:

> 10632. The plan shall provide an urban water shortage contingency analysis, which includes each of the following elements, which are within the authority of the urban water supplier:
>
> 10632 (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

The City's water system currently has water meters on all connections. These meters record the amount of water consumed at each location. The City will use these devices to monitor the citywide actual reductions in water use.

WATER RECYCLING

This chapter includes information on water recycling and its potential for use as a water source for the City of Buena Park (City) in accordance with the Urban Water Management Planning Act (UWMPA).

UWMPA:

> 10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies and shall include all of the following:
>
> 10633 (a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.
>
> 10633 (b) A description of the recycled water currently being used in the supplier's service area, including but not limited to, the type, place and quantity of use.
>
> 10633 (c) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse determination with regard to the technical and economic feasibility of serving those uses, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
>
> 10633 (d) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years.
>
> 10633 (e) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
>
> 10633 (f) 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 and to promote recirculating uses.

9.1 ORANGE COUNTY SANITATION DISTRICT

Orange County Sanitation District (OCSD) provides wastewater collection and treatment for northern and central Orange County. Their service area encompasses 471 square miles, 21 cities, 3 special districts, and portions of unincorporated Orange County for an OCSD population of approximately 2.5 million residents. OCSD currently operates and maintains 2 treatment plants, 650 miles of collection lines and trunk sewers, and 20 pumping stations (OCSD, 2004).

9.2 WATER FACTORY 21

Water Factory 21 was built in 1975 and operated until 2004. According to the 2004 Orange County Water District (OCWD) Groundwater Management Plan (GMP), it purified 4 mgd of clarified secondary wastewater effluent from OCSD using lime clarification, multimedia filtration, reverse osmosis, and UV treatment. The product water was then injected via 23 injection wells into the Talbert saltwater intrusion barrier.

The plant is being replaced by the Groundwater Replenishment System (GWRS) (OCWD, 2004), discussed in more detail in subsection 9.3. The Interim Microfiltration Facility is providing 5 mgd of purified water until the GWRS project is completed in 2007 (OCWD, 2004).

9.3 GROUNDWATER REPLENISHMENT SYSTEM

OCSD collects wastewater from northern Orange County (including wastewater from the City) and treats it at one of two wastewater treatment plants operated by OCSD. OCSD has joined with OCWD to develop a regional water reclamation project known as GWRS.

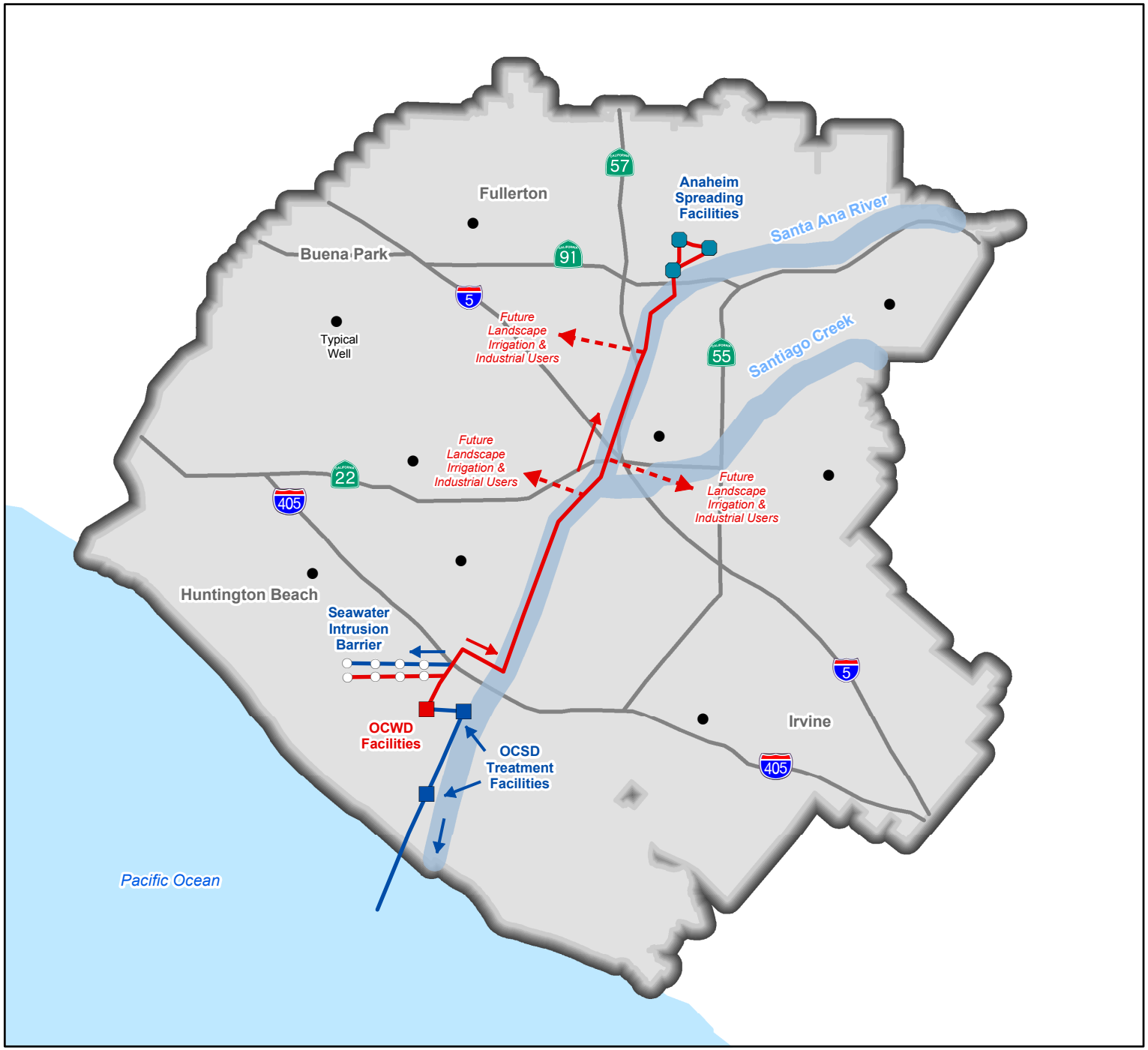
According to the 2004 OCWD GMP:

> "The GWR System is jointly sponsored by OCWD and the Orange County Sanitation District (OCSD). The first phase of the GWR System will increase the reliability and sustainability of local groundwater supplies through the creation of a new source of water, producing a total of 72,000 acre-feet per year (afy) for groundwater recharge. The GWR System will be operational in mid-2007."

The GWRS project will provide water for the Talbert seawater intrusion barrier, thus protecting the aquifer from further degradation due to seawater intrusion. It will also augment existing groundwater supplies by providing a reliable source of recharge water for the basin. Figure 9.1 shows the major components of the GWRS:

- Advanced treatment facilities and pump stations.
- Pipeline connection from treatment facilities to existing recharge basins.
- Expansion of the Talbert seawater intrusion barrier.

The City cooperates in the development of recycled water through its affiliation with OCSD and OCWD. Although recycled water is not available directly to the City, recycled water will be used to recharge the groundwater basin and protect the basin from seawater intrusion. These uses of the recycled water will benefit the City by making the basin a more sustainable source of water.



Legend

Groundwater Facilities System

- Anaheim
- OCSD
- OCWD
- Seawater Intrusion Barrier
- Typical Well
- Future Users
- River/Creek
- Highways
- Pacific Ocean

N

Miles
0 2.5 5

FIGURE 9.1
GROUNDWATER REPLENISHMENT SYSTEM MAP

2005 URBAN WATER MANAGEMENT PLAN

CITY OF BUENA PARK

Source: Orange County Water District

APPENDIX A

RESOLUTION TO ADOPT THE 2005 URBAN WATER MANAGEMENT PLAN

DEC 19 2005

RESOLUTION NO. 11688

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BUENA PARK, CALIFORNIA, ADOPTING AN UPDATED URBAN WATER MANAGEMENT PLAN

A. Recitals.

(i) The City of Buena Park is located in the semi-arid coastal plain of Southern California, and it is imperative that every reasonable measure be taken to manage precious local and imported water supplies.

(ii) The City of Buena Park is required to prepare and adopt an Updated Urban Water Management Plan pursuant to State Law.

(iii) The City of Buena Park has updated the Urban Water Management Plan in accordance with the requirements of State Law.

(iv) The purpose of the City's plan is to provide a perspective on current and projected water usage and conservation measures that would cope with short-term as well as chronic regional water supply deficiencies.

(v) This Council has conducted a duly noticed public hearing in accordance with the requirements of California Water Code Section 10642, which hearing was concluded prior to the adoption of this Resolution.

(vi) All legal prerequisites to the adoption of this Resolution have occurred.

NOW, THEREFORE, the City Council of the City of Buena Park does hereby resolve, determine, and order as follows:

Section 1: In all respects as set forth in the Recitals, Part A, of this Resolution.

Section 2: The 2005 Urban Water Management Plan, a full, true and correct copy of which is attached hereto as Exhibit "A", is hereby adopted in its entirety as the Urban Water Management Plan for the City of Buena Park.

Section 3: The Director of Public Works shall cause periodic reviews of said Plan to occur and to present to this Council any changes or amendments in said Plan which are indicated by such review in accordance with the requirements of the Urban Water Management Planning Act, California Water Code Sections 10610, et seq.

Section 4: The City Clerk shall certify to the adoption of this resolution and file a certified copy of the Plan adopted hereby with the California State Department of Water Resources.

PASSED AND ADOPTED this 13th day of December, 2005, by the following called vote:

AYES: COUNCILMEMBERS: Marshall, Berry, Dow, McCay, Brown

NOES: COUNCILMEMBERS: None

ABSENT: COUNCILMEMBERS: None

ABSTAIN: COUNCILMEMBERS: None

Mayor

ATTEST:

City Clerk

I, Shalice Reynoso, City Clerk of the City of Buena Park, California, hereby certify that the foregoing resolution was duly and regularly passed and adopted at a regular meeting of the City Council of the City of Buena Park, held this 13th day of December, 2005.

City Clerk

THE FOREGOING INSTRUMENT IS A FULL, TRUE AND CORRECT COPY OF THE ORIGINAL ON FILE IN THIS OFFICE

ATTEST: CITY CLERK OF THE CITY OF BUENA PARK, CALIFORNIA

DATE: Dec. 14, 2005

APPENDIX B

ADVERTISEMENT FOR PUBLIC REVIEW OF DOCUMENT

DECLARATION OF PUBLICATION

(2015.5 C.C.P.)

THIS SPACE IS FOR THE COUNTY CLERK'S STAMP

STATE OF CALIFORNIA,)
COUNTY OF ORANGE)

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE AFORESAID COUNTY; I AM OVER THE AGE OF EIGHTEEN YEARS AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE PRINCIPLE CLERK OF THE **BUENA PARK/ANAHEIM INDEPENDENT**, A NEWSPAPER OF GENERAL CIRCULATION PRINTED AND PUBLISHED **TWICE WEEKLY** IN THE CITY OF **BUENA PARK**, COUNTY OF ORANGE, AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF ORANGE, STATE OF CALIFORNIA, UNDER THE DATE OF **2/9/90** CASE **#A151797** THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED BY DISTRIBUTION IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT:

November 23, 30,

all in the year 2005

I certify (or declare) under the penatly of perjury that the foregoing is true and correct.

signature

Date: November 30, 2005, executed at BUENA PARK, California

CITY OF BUENA PARK

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the City Council of the City of Buena Park will hold a public hearing in the Council Chambers of the Civic Center, 6650 Beach Boulevard, Buena Park, California, on December 13, 2005, at 6 p.m., or as soon as possible thereafter as the matter can be heard, to consider the following:

Adoption of the City's 2005 Urban Water Management Plan that provides an overview of current and projected water usage, conservation measures, and an emergency water management program.

All interested persons have the right to appear and be heard. If you challenge the 2005 Urban Water Management Plan 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 Council, at, or prior to, the public hearing.

Any person with an impairment pursuant to the Americans with Disability Act who needs special accommodations should call the City Clerk at 714/562-3754.

Further information may be obtained from the Department of Public Works at (714) 562-3650. Copies of the Plan will be made available at the City's Clerk's office located at 6650 Beach Boulevard, Buena Park, California and the City Corporation Yard at 8071 Page Street, Buena Park, California.

/s/ Shalice Reynoso, City Clerk

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APPENDIX C

CALIFORNIA DEPARTMENT OF WATER RESOURCES BULLETIN 118

Upper Mojave River Valley Groundwater Basin

- Groundwater Basin Number: 6-42
- County: San Bernardino
- Surface Area: 413,000 acres (645 square miles)

Basin Boundaries and Hydrology

The Upper Mojave River Valley Groundwater Basin underlies an elongate north-south valley, with the Mojave River flowing (occasionally) through the valley from the San Bernardino Mountains on the south, northward into the Middle Mojave River Valley Groundwater Basin at the town of Helendale. The groundwater basin is bounded on the north by a roughly east-west line from basement rock outcrops near Helendale to those in the Shadow Mountains. The southern boundary is the contact between Quaternary sedimentary deposits and unconsolidated basement rocks of the San Bernardino Mountains. The basin is bounded on the southeast by the Helendale fault and on the east by basement exposures of the mountains surrounding Apple Valley. In the west, the boundary is marked by a surface drainage divide between this basin and El Mirage Valley Basin, and a contact between alluvium and basement rocks that form the Shadow Mountains. Average precipitation varies across the basin from 5 to 36 inches with the average for the basin near 12 inches (USDA 1999).

Hydrogeologic Information

Water Bearing Formations

The two primary water-bearing units within the Mojave River Valley Basin system consist of regional Pliocene and younger alluvial fan deposits (fan unit) and of overlying Pleistocene and younger river channel and floodplain deposits, which have been called the floodplain unit (DWR 1967), or the floodplain aquifer (Lines 1996; Stamos and others 2001). Other potential, but not regionally significant, water-bearing units include older alluvium, old fan deposits, old lake and lakeshore deposits, and dune sand deposits (DWR 1967). Water-bearing deposits in this basin are predominantly unconfined, though some perched water appears near Adelanto. Well yields typically range from 100 to 2000 gpm (Hardt 1969; Lines 1996; Stamos and others 2001) with an average of about 630 gpm for all units (BEE 1994).

Pleistocene and Younger Floodplain Unit. The floodplain unit is the more productive and extensively studied of the two units and extends 50 to 200 feet deep in this basin, but is restricted to within about 1 mile of the active Mojave River channel (Stamos and others 2001). The average thickness is estimated to be about 150 feet through this basin. Specific yield for this unit ranges from 23 to 39 percent (Lines 1996) and the average specific yield for this unit is about 27 percent in this basin (DWR 1967; Lines 1996).

Pliocene and Younger Fan Unit. The regional fan unit is composed of late Tertiary and younger unconsolidated to partially consolidated alluvial fan deposits up to 1,000 feet thick (Stamos and Predmore 1995; Lines 1996). The permeability of these deposits decreases with depth (Stamos and others 2001). Estimated average effective thickness in the Upper Mojave River

Valley Groundwater Basin is about 300 feet thick (DWR 1967). Available information is indicates that specific yields and well yields are generally less for the fan unit compared to the floodplain unit, but suggest generally higher well yields for younger fan deposits and lower well yields for older fan deposits (DWR 1967). The specific yields for this unit range from 4 percent to 25 percent with an estimated average of 10 percent (DWR 1967).

Restrictive Structures

This groundwater basin is bounded on the northeast by the Helendale fault zone which forms a barrier to groundwater flow in the regional fan unit, but does not appear to be a barrier to groundwater flow in the floodplain unit (Stamos and Predmore 1995; Stamos and others 2001). The fault zone causes an eastward lowering of the water table across the southeastern boundary into the Lucerne Valley Basin in the fan unit deposits (Stamos and Predmore 1995; Lines 1996). Stamos and others (2001) also interpret unexposed faults acting as barriers to cause steep groundwater gradients between Victorville and Adelanto.

In the southern portion of the basin, bedrock constriction causes water to rise to the surface of the Mojave River at the Upper and Lower Narrows (Lines 1996; Stamos and others 2001). Historically, such locations have been used for camping and watering spots, such as Lane's Crossing just north of the Lower Narrows (Lines 1996).

Recharge Areas

Natural recharge of the basin is from direct precipitation, ephemeral stream flow, infrequent surface flow of the Mojave River, and underflow of the Mojave River into the basin from the southwest (Eccles 1981; Stamos and Predmore 1995; Lines 1996). Treated wastewater effluent, septic tank effluent, effluent from two fish hatchery operations, and irrigation waters are allowed to percolate into the ground and recharge the groundwater system (Eccles 1981; Lines 1996). A large, but sporadic contribution to recharge occurs when the Mojave River is flowing, with 40 feet of rise in the water table observed during 1969 and 16 to 48 feet of rise observed in 1993 (Hardt 1969; Robson 1974; Lines 1996). The general groundwater flow is toward the active channel of the Mojave River and then it follows the course of the river through the valley (Stamos and Predmore 1995; Lines 1996). The Helendale fault forms a barrier to groundwater flow in the southeast corner of the basin. This barrier causes groundwater to flow northwestward under a surface drainage divide into the Mojave River drainage instead of northeastward into Lucerne Lake (dry) in the Lucerne Valley Basin.

Groundwater Level Trends

Groundwater levels in wells in the floodplain unit near the Mojave River tend to vary in concert with rainfall and runoff rates, whereas groundwater levels in the fan unit do not show significant changes due to local rainfall (MWA 1999). The general trend in this basin is for declining groundwater levels, particularly in the fan unit. Three of the ten highest precipitation years over a 60-year base period occurred during 1991 through 1999 (MWA 1999). Infiltration of the runoff from this relatively abundant precipitation has produced an increase in groundwater level (and groundwater storage) in the

floodplain unit near the Mojave River (MWA 1999). A hydrograph for a well near Adelanto shows a gentle decline of about 25 feet during 1955 through 1985 and a faster decline of about 35 feet since about 1985. Another well near Victorville in the fan unit shows a range of about 30 feet in water level over the last 20 years, with a decrease in water level of about 10 feet (MWA 1999).

Groundwater Storage

Groundwater Storage Capacity. Published total storage capacity for the Upper Mojave River Valley Groundwater Basin varies. The boundaries of the Upper Mojave River Valley Groundwater Basin of this report correspond closely to the Upper Mojave River Basin and Fifteen Mile storage units discussed by DWR (1967). DWR (1967) calculated the total storage capacity for these storage units using the base of water-bearing materials, an average of about 300 feet. The total storage for the Upper Mojave River Basin and Fifteen Mile storage units is 27,839,000 af (DWR 1967). The Upper Mojave River Valley Groundwater Basin also roughly underlies the Alto subarea and about one-third of the Este subarea under the administration of the Mojave Water Agency (MWA 1999). The MWA uses an economic pumping depth of 100 feet as a limit for effective basin depth, and calculates a total effective storage capacity of 2,086,000 af for the Alto subarea and 530,000 af for the Este subarea (BEE, 1994). Using an overlying area of about 413,000 acres, an average thickness of about 300 feet, and an average specific yield of about 10.5 percent indicates a total storage capacity of about 13,000,000 af.

Groundwater in Storage. MWA (1999) calculated the available stored groundwater underlying the Alto subarea at the end of 1998 was 960,000 af and the available storage space was 1,126,000 af. MWA (1999) calculated the available stored groundwater in the Este subarea at the end of 1998 was 420,000 af and the available storage space was 110,000 af. The basin is considered to be effectively full when 1930 water level elevations are reached (BEE, 1994). Assuming an overlying area of about 413,000 acres, a saturated thickness of about 250 feet, and a specific yield of 10.5 percent indicates about 10,800,000 af of stored groundwater at the end of 1998. This amount indicates that about 2,200,000 af of additional storage space was available.

Groundwater Budget (Type A)

Not enough data exist to compile a detailed groundwater budget for the basin. However, MWA monitors groundwater extraction and reports extractions of 58,300 af for urban uses, 7,800 af for agriculture, and 11,900 af for industrial and recreational uses in the 1997-1998 water year (MWA 1999). In addition to the extraction data, several other components of the water budget have been reported. For the 1997-1998 water year, MWA (1999) estimated natural recharge at 105,000 af, artificial recharge at 16,350 af, and applied water recharge at 3,900 af. Subsurface inflow and outflow averages are estimated by DWR (1967) at 950 af inflow and 2,000 af outflow. Bookman-Edmonston Engineering (1994) set the average inflow at about 1,000 af and the average outflow at 2,000 af. Stamos and others (2001) an estimate that 5,000 to 6,000 afy flows through the floodplain unit into the Middle Mojave River Valley Groundwater Basin near the Helendale fault.

Groundwater Quality

Characterization. Calcium bicarbonate character waters are found near the San Bernardino Mountains and near the Mojave River channel. Sodium bicarbonate waters are found near Victorville. Sodium bicarbonate-sulfate waters are found near Adelanto. Sodium-calcium sulfate waters occur west of Victorville. Sodium chloride waters are found in Apple Valley. Small areas of calcium-sodium sulfate and calcium-sodium bicarbonate also occur in this basin (DWR 1967). Total dissolved solids content typically is less than 500 mg/L (BEE 1994), but concentrations up to 1,105 mg/L were found near Apple Valley (DWR 1967). Electrical Conductivity readings range as high as 1,529 μmhos, with lower values of 650 μmhos found near Apple Valley, and 550 μmhos found near Adelanto (DWR 1967).

Impairments. High nitrate concentrations occur in the southern portion of the basin and high iron and manganese concentrations are found near Oro Grande. Groundwater has been contaminated with trichloroethane (TCE) at the former George Air Force Base, now a federal Superfund site (BEE 1994). Leaking underground storage tanks in and around Victorville have introduced fuel additives benzene, toluene, ethlybenzene, xylene, and methyl tertiary butyl ether (MTBE) into groundwater (BEE 1994; MWA 1999).

Water Quality in Public Supply Wells

Constituent Group[1]	Number of wells sampled[2]	Number of wells with a concentration above an MCL[3]
Inorganics – Primary	122	9
Radiological	115	2
Nitrates	125	2
Pesticides	117	0
VOCs and SVOCs	120	0
Inorganics – Secondary	122	11

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Production Characteristics

	Well yields (gal/min)	
Municipal/Irrigation	Range: to 5,500 gal/min	Average: 1,030 gal/min Median: 980 (130 Well Completion Reports)
	100-2,000 gal/min for floodplain unit (Hardt 1969; Lines 1996)	Average = 630 gal/min for all units (BEE 1994)
	Total depths (ft)	
Domestic	Range: 22-1,140 ft	Average: 250 ft Median: 210 ft (1,188 Well Completion Reports)
Municipal/Irrigation	Range: 50-1,970 ft	Average: 360ft Median: 300 ft (326 Well Completion Reports)

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
US Geological Survey	Water level	120/ Annually
US Geological Survey	Water Quality	22/ Annually
Department of Health Services	Title 22 Water Quality	153/ Annually

Basin Management

Groundwater management	The Upper Mojave River Valley Groundwater Basin is a portion of an area adjudicated in 1996 setting the Mojave Water Agency as watermaster. MWA has proposed three basic management strategy alternatives that would reduce and eliminate overdraft in the basin: water conservation, water supply enhancement, and water allocation. These alternatives will likely be implemented together in the final management strategy adopted by MWA (BEE 1994).
Water agencies	
Public	Mojave Water Agency, Victor Valley Water District, Thunderbird County Water District, Juniper Riveria County Water District, Mariana Ranchos County Water District, Hesperia Water District, Baldy Mesa Water District, County Service Area Number 64, Apple Valley Heights County Water District, Apple Valley Foothill County Water District
Private	Apple Valley Ranchos Water Company, Southern California Water Company, Rancheritos Mutual Water Company

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Errata

Substantive changes made to the basin description will be noted here.

APPENDIX D

2004 GROUNDWATER MANAGEMENT PLAN MUNICIPAL WATER DISTRICT OF ORANGE COUNTY (A COPY OF THE ENTIRE REPORT IS PROVIDED UNDER A SEPARATE COVER AND BINDER)

Orange County Water District

GROUNDWATER MANAGEMENT PLAN

March 2004

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APPENDIX E

CITY OF BUENA PARK
2005 WATER QUALITY REPORT

December 2005

The 2005 Water Quality Report

Drinking Water Quality

Since 1990, California water utilities have been providing an annual Water Quality Report to their customers. This year's report covers calendar year 2004 water quality testing, and has been prepared in compliance with new regulations called for in the 1996 reauthorization of the Safe Drinking Water Act. The reauthorization charged the United States Environmental Protection Agency (USEPA) with updating and strengthening the tap water regulatory program and changed the report's due date to July 1.

USEPA and the California Department of Health Services (CDHS) are the agencies responsible for establishing drinking water quality standards. To ensure that your tap water is safe to drink, USEPA and CDHS prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDHS regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. The federal Food and Drug Administration (FDA) also sets regulations for bottled water.

Your City of Buena Park/Public Works Utilities Division vigilantly safeguards its water supply and, as in years past, the water delivered to your home meets the standards required by the state and federal regulatory agencies. In some cases, your local utility goes beyond what is required to monitor for additional contaminants that have known health risks. For example, the Orange County Water District, which manages our groundwater basin, monitors our groundwater for unregulated solvents and herbicides/pesticides.

Unregulated contaminant monitoring helps USEPA determine where certain contaminants occur and whether it needs to establish regulations for those contaminants.

If you have any questions about your water, please contact us for answers...

For information about this report, or your water quality in general, please contact Chuck Fowler at (714) 562-3701. The Buena Park City Council meets the Second and Fourth Tuesday of each month at the City Council Chambers in the City of Buena Park. Please feel free to participate in these meetings.

For more information about the health effects of the listed contaminants in the following tables, call the U.S. Environmental Protection Agency hotline at (800) 426-4791.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.
Spanish

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시는 친구와 상의하십시오.
Korean

Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.
Vietnamese

City of Buena Park
Public Works / Utilities Division
6650 Beach Boulevard
Buena Park, California 90620

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What You Need to Know About Your Water, and How it May Affect You

Sources of Supply

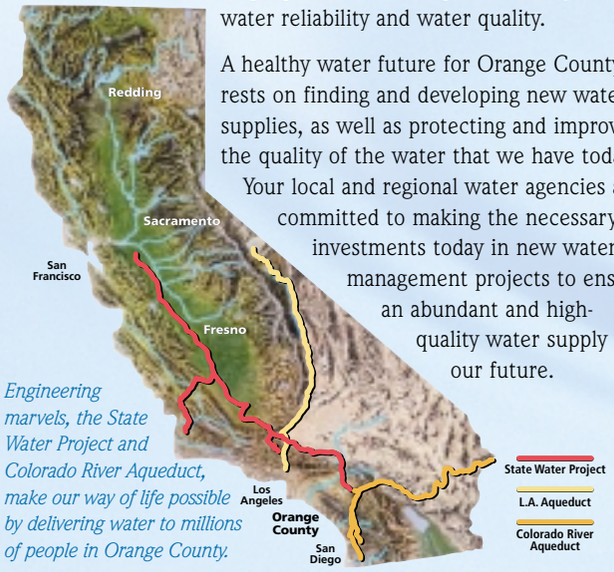
Orange County's water supplies are a blend of groundwater provided by the Orange County Water District (OCWD) and water imported from Northern California and the Colorado River by the Municipal Water District of Orange County (MWDOC) via the Metropolitan Water District of Southern California (MET). Groundwater comes from a natural underground aquifer that is replenished with water from the Santa Ana River, local rainfall and imported water. The groundwater basin is 350 square miles and lies beneath north and central Orange County from Irvine to the Los Angeles border and from Yorba Linda to the Pacific Ocean. More than 20 cities and retail water districts draw from the basin to provide water to homes and businesses. In south Orange County, nearly 100 percent of the water is imported and delivered to the cities and retail water districts, where it is stored in above-ground reservoirs and tanks before being sent to homes and businesses.

Orange County's Water Future

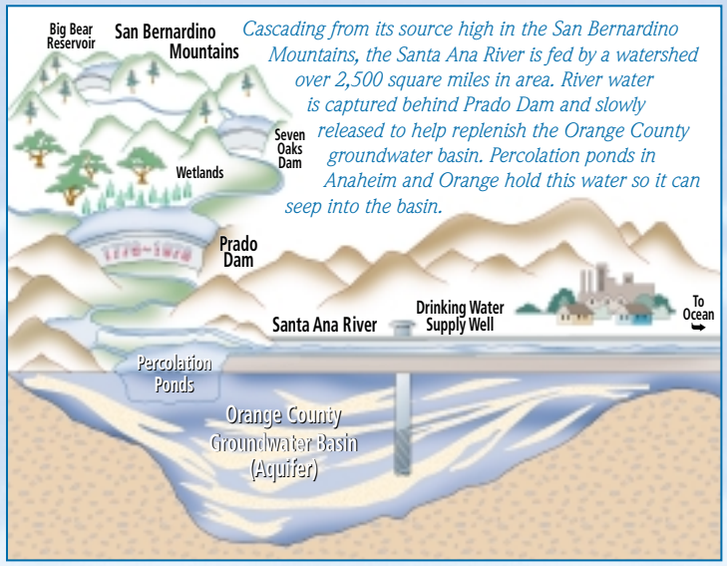
For years, Orange County has enjoyed an abundant, seemingly endless supply of high-quality water. However, as water demand continues to increase statewide, we must be even more conscientious about our water supply and maximize the efficient use of this precious natural resource.

OCWD and MWDOC work cooperatively to evaluate new and innovative water management and supply development programs, including water reuse and recycling, wetlands expansion, recharge facility construction, ocean and brackish water desalination, surface storage and water use efficiency programs. These efforts are helping to enhance long-term countywide water reliability and water quality.

A healthy water future for Orange County rests on finding and developing new water supplies, as well as protecting and improving the quality of the water that we have today. Your local and regional water agencies are committed to making the necessary investments today in new water management projects to ensure an abundant and high-quality water supply for our future.



Engineering marvels, the State Water Project and Colorado River Aqueduct, make our way of life possible by delivering water to millions of people in Orange County.



Cascading from its source high in the San Bernardino Mountains, the Santa Ana River is fed by a watershed over 2,500 square miles in area. River water is captured behind Prado Dam and slowly released to help replenish the Orange County groundwater basin. Percolation ponds in Anaheim and Orange hold this water so it can seep into the basin.

Basic Information About Drinking Water Contaminants

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of land or through the layers of the ground it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animal and human activity.

Contaminants that may be present in source water include:

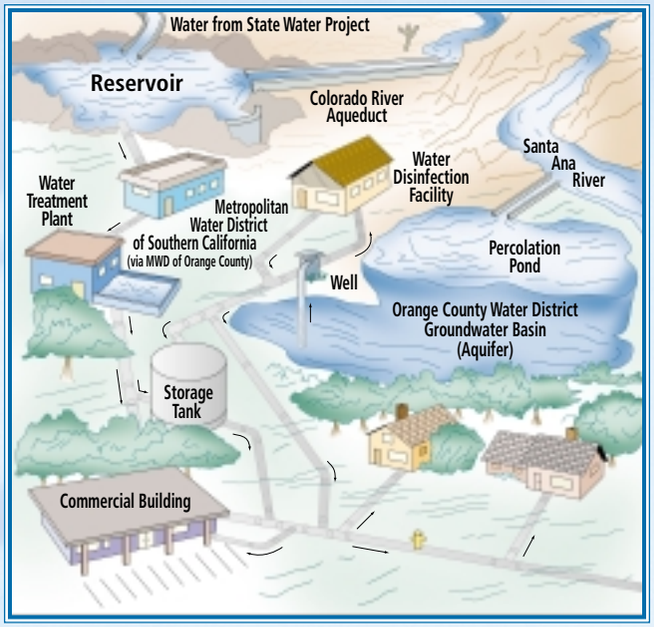
- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production or mining activities.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gasoline stations, urban storm water runoff and septic systems.

In order to ensure that tap water is safe to drink, USEPA and the CDHS prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDHS regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at 1-800-426-4791.

Cryptosporidium

Cryptosporidium is a microscopic organism that, when ingested, can cause diarrhea, fever, and other gastrointestinal symptoms. The organism comes from animal and/or human wastes and may be in surface water. The Metropolitan Water District of Southern California, which did not detect it in the water, tested your surface water for *Cryptosporidium* in 2004. If it ever is detected, *Cryptosporidium* is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

The USEPA and the federal Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from USEPA's safe drinking water hotline at (800) 426-4791 between 9 a.m. and 5 p.m. Eastern Time (6 a.m. to 2 p.m. in California).



Imported water — from the Colorado River and northern California — travels hundreds of miles to meet the needs of Orange County. Water is also pumped from the groundwater basin that spans 350 square miles under north and central Orange County.

The Continuing Quality of Your Water is Our Primary Concern

Immuno-Compromised People

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those with cancer who are undergoing chemotherapy, persons who have had organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

Lead

Infants and young children are typically more vulnerable to lead in drinking water that the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

Radon

Radon is a radioactive gas found throughout the United States that cannot be seen, tasted or smelled. It can move up through the ground and into a home through cracks and holes in the foundation and can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes and other household activities. Radon entering the home through tap water will, in most cases, be a small source as compared to radon entering the home through soil. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon, testing the air in your home is inexpensive and easy. For more information call EPA's Radon Hotline at 1-800-SOS-RADON (1-800-767-7236).

Source Water Assessments

Import (Metropolitan) Water Assessment

In December 2002, Metropolitan Water District of Southern California completed its source water assessment of its Colorado River and State Water Project supplies. Colorado River supplies are considered to be most vulnerable to recreation, urban/storm water runoff, increasing urbanization in the watershed and wastewater. State Water Project supplies are considered to be most vulnerable to urban/storm water runoff, wildlife, agriculture, recreation and wastewater. A copy of the assessment can be obtained by contacting Metropolitan by phone at (213) 217-6850.

Groundwater Assessment

An assessment of the drinking water sources for City of Buena Park Water Department was completed in December 2002. The groundwater sources are considered most vulnerable to the following activities not associated with detected contaminants: Body shops, chemical/petroleum processing/storage, electrical/electronic manufacturing, gas stations, historic gas stations, known contaminant plumes, machine shops, metal plating/finishing/fabricating, photo processing/printing, repair shops, sewer collection systems, wastewater treatment and disposal facilities.

A copy of the complete assessment is available at Department of Health Services Office of Drinking Water, Santa Ana District, 28 Civic Center Plaza Room 325, Santa Ana, CA 92701. You may request a summary of the assessment by contacting the City of Buena Parks Water Department at (714) 562-3701.

Want Additional Information?

There's a wealth of information on the internet about Drinking Water Quality and water issues in general. Some good sites — both local and national — to begin your own investigation are:

Municipal Water District of Orange County
www.mwdoc.com

Orange County Water District
www.ocwd.com

Metropolitan Water District of Southern California
www.mwdh20.com

California Department of Health Services, Division of Drinking Water and Environmental Management
www.dhs.cahwnet.gov/ps/ddwem

U.S. Environmental Protection Agency
www.epa.gov/safewater/

Table Definitions

AL (Action Level): The concentration of a contaminant, which if exceeded, triggers treatment or other requirements, which a water system must follow.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (2nd MCL) are set to protect the odor, taste, and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

PHG (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Primary Drinking Water Standard or PDWS: MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

Regulatory Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Variance: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

n/a: Not applicable.

NS: No standard established.

NTU (nephlometric turbidity units): Measurement of the clarity, or turbidity, of water.

pCi/L (picocuries per liter): A measure of the natural rate of radioactive disintegration.

micromhos/cm (micromhos per centimeter): A measure of electrical conductance.

Measurements: Water is sampled and tested throughout the year. Contaminants are measured in parts per million (ppm), parts per billion (ppb), parts per trillion (ppt), and even parts per quadrillion (ppq). If this is difficult to imagine, think about these comparisons:

Parts per million (mg/L):
- 1 second in 12 days
- 1 penny in $10,000
- 1 inch in 16 miles

Parts per billion (µg/L):
- 1 second in 32 years
- 1 penny in $10 million
- 1 inch in 16,000 miles

It is important to note, however, that even a small concentration of certain contaminants can adversely affect a water supply.

The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

2004 City of Buena Park Groundwater Quality

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Most Recent Sampling Date	Typical Source of Contaminant
Radiologicals							
Alpha Radiation (pCi/L)	15	n/a	3.9	ND – 6.8	No	2004	Erosion of Natural Deposits
Radium (pCi/L)	5	n/a	<1	ND – 1.2	No	2004	Erosion of Natural Deposits
Uranium (pCi/L)	20	0.5	3.4	ND – 5.7	No	2004	Erosion of Natural Deposits
Organic Chemicals							
Methylen Chloride (ppb)	5	4	<0.5	ND – 0.6	No	2004	Discharge from Industrial Source
Inorganic Chemicals							
Arsenic (ppb)	50	0.004	2.6	ND – 5.0	No	2004	Erosion of Natural Deposits
Fluoride (ppm)	2	1	0.6	0.45 – 0.95	No	2004	Erosion of Natural Deposits
Nitrate (ppm as NO_3)	45	45	1.7	ND – 6.0	No	2004	Fertilizers, Septic Tanks
Nitrate + Nitrite (ppm as N)	10	10	0.4	ND – 1.4	No	2004	Fertilizers, Septic Tanks
Secondary Standards*							
Chloride (ppm)	500*	n/a	26	16 – 41	No	2004	Erosion of Natural Deposits
Color (color units)	15*	n/a	2	ND – 10	No	2004	Erosion of Natural Deposits
Manganese (ppb)	50*	n/a	11	ND – 41	No	2004	Erosion of Natural Deposits
Specific Conductance (µmho/cm)	1,600*	n/a	548	479 – 618	No	2004	Erosion of Natural Deposits
Sulfate (ppm)	500*	n/a	64	48 – 73	No	2004	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	324	276 – 360	No	2004	Erosion of Natural Deposits
Turbidity (ntu)	5*	n/a	0.15	ND – 0.3	No	2004	Erosion of Natural Deposits
Unregulated Contaminants Requiring Monitoring							
Bicarbonate (ppm)	Not Regulated	n/a	215	203 – 221	n/a	2004	Erosion of Natural Deposits
Boron (ppm)	Not Regulated	n/a	<0.1	ND – 0.2	n/a	2004	Erosion of Natural Deposits
Calcium (ppm)	Not Regulated	n/a	46	8.5 – 78	n/a	2004	Erosion of Natural Deposits
Hexavalent Chromium (ppb)	Not Regulated	n/a	<1	ND – 1.1	n/a	2004	Erosion of Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	11	4.4 – 15	n/a	2004	Erosion of Natural Deposits
pH (pH units)	Not Regulated	n/a	8.1	7.7 – 8.5	n/a	2004	Acidity, hydrogen ions
Potassium (ppm)	Not Regulated	n/a	2.0	1.2 – 3.0	n/a	2004	Erosion of Natural Deposits
Sodium (ppm)	Not Regulated	n/a	51	36 – 104	n/a	2004	Erosion of Natural Deposits
Total Alkalinity (ppm as $CaCO_3$)	Not Regulated	n/a	177	174 – 181	n/a	2004	Erosion of Natural Deposits
Total Hardness (ppm as $CaCO_3$)	Not Regulated	n/a	162	40 – 256	n/a	2004	Erosion of Natural Deposits
Vanadium (ppb)	Not Regulated	n/a	<3	ND – 4.6	n/a	2004	Erosion of Natural Deposits

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = picoCuries per liter; ntu = nephelometric turbidity units; ND = not detected; n/a = not applicable;
< = average is less than the detection limit for reporting purposes; MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal; PHG = California Public Health Goal;
µmho/cm = micromho per centimeter; *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

City of Buena Park Distribution System Water Quality

	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (ppb)	80	13	ND – 71	No	Byproducts of chlorine disinfection
Haloacetic Acids (ppb)	60	4.6	ND – 31	No	Byproducts of chlorine disinfection
Chlorine Residual (ppm)	(4 / 4)	0.6	ND – 2.5	No	Disinfectant added for treatment
Color (color units)	15*	1	ND – 4	No	Erosion of natural deposits
Turbidity (ntu)	5*	0.1	0.1 – 1.5	No	Erosion of natural deposits
Odor (threshold odor number)	3*	1	ND – 1	No	Erosion of natural deposits

Eight locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; twenty locations are tested monthly for color, odor and turbidity.
MRDL = Maximum Residual Disinfectant Level; MRDLG = Maximum Residual Disinfectant Level Goal; ntu = nephelometric turbidity units;
ND = not detected; *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

Bacterial Quality	MCL	MCLG	Highest Monthly Percent Positives	MCL Violation?	Typical Source of Contaminant
Total Coliform Bacteria	5%	0	1.0%	No	Naturally present in the environment

No more than 5% of the monthly samples may be positive for total coliform bacteria. The occurrence of 2 consecutive total coliform positive samples, one of which contains fecal coliform/E.coli, constitutes an acute MCL violation.

Lead and Copper Action Levels at Residential Taps

	Action Level (AL)	Health Goal	90th Percentile Value	Sites Exceeding AL / Number of Sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	2	ND<5	0 / 30	No	Corrosion of household plumbing
Copper (ppm)	1.3	0.17	0.34	0 / 30	No	Corrosion of household plumbing

Every three years, at least 30 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2003.
Only one home had a detection of lead but it did not exceed the regulatory action level (AL). Copper was detected in fifteen samples, none of which exceeded the AL.
A regulatory action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

2004 Metropolitan Water District of Southern California Treated Surface Water

Chemical	MCL	PHG, or (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Radiologicals – Tested in 2003						
Beta Radiation (pCi/L)	50	n/a	4.1	ND - 5.9	No	Decay of man-made or natural deposits
Uranium (pCi/L)	20	0.5	<2	ND - 2.6	No	Erosion of natural deposits
Inorganic Chemicals – Tested in 2004						
Fluoride (ppm)	2	1	0.18	0.14 - 0.20	No	Erosion of natural deposits
Nitrate and Nitrite as N (ppm)	10	10	0.5	ND - 0.8	No	Agriculture runoff and sewage
Nitrate as N (ppm)	10	10	0.5	ND - 0.8	No	Agriculture runoff and sewage
Secondary Standards* – Tested in 2004						
Chloride (ppm)	500*	n/a	87	76 - 110	No	Runoff or leaching from natural deposits
Color (color units)	15*	n/a	2	1 - 3	No	Runoff or leaching from natural deposits
Corrosivity (LSI)	non-corrosive	n/a	0.18	0.03 - 0.29	No	Elemental balance in water
Odor (odor units)	3*	n/a	1	1	No	Naturally occurring organic materials
Specific Conductance (µmho/cm)	1,600*	n/a	749	644 - 877	No	Substances that form ions in water
Sulfate (ppm)	500*	n/a	138	92 - 194	No	Runoff or leaching of natural deposits
Total Dissolved Solids (ppm)	1,000*	n/a	435	370 - 521	No	Runoff or leaching of natural deposits
Turbidity (NTU)	5*	n/a	0.05	0.04 - 0.08	No	Runoff or leaching of natural deposits
Unregulated Chemicals - Tested in 2004						
Alkalinity (ppm)	Not Regulated	n/a	89	76 - 98	n/a	Runoff or leaching from natural deposits
Boron (ppb)	Not Regulated	n/a	130	130 - 140	n/a	Runoff or leaching from natural deposits
Calcium (ppm)	Not Regulated	n/a	40	31 - 48	n/a	Runoff or leaching from natural deposits
Hardness, total (ppm)	Not Regulated	n/a	179	139 - 210	n/a	Runoff or leaching of natural deposits
Hardness, total (grains/gal)	Not Regulated	n/a	10	8.1 - 12	n/a	Runoff or leaching of natural deposits
Magnesium (ppm)	Not Regulated	n/a	19	15 - 22	n/a	Runoff or leaching from natural deposits
pH (pH units)	Not Regulated	n/a	8.2	8.1 - 8.2	n/a	Hydrogen ion concentration
Potassium (ppm)	Not Regulated	n/a	3.5	3.0 - 4.0	n/a	Runoff or leaching from natural deposits
Sodium (ppm)	Not Regulated	n/a	80	74 - 94	n/a	Runoff or leaching from natural deposits

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = picoCuries per liter; ntu = nephelometric turbidity units; µmho/cm = micromhos per centimeter;
ND = not detected; < = average is less than the detection limit for reporting purposes; MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal;
PHG = California Public Health Goal; n/a = not applicable; LSI = Langelier Saturation Index; *Contaminant is regulated by a secondary standard.

Turbidity - combined filter effluent	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Contaminant
1) Highest single turbidity measurement	0.3 NTU	0.1	No	Soil run-off
2) Percentage of samples less than 0.3 NTU	95%	100%	No	Soil run-off

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. Low turbidity in Metropolitan's treated water is a good indicator of effective filtration. Filtration is called a treatment technique. A treatment technique is a required process intended to reduce the level of contaminants in drinking water that are difficult and sometimes impossible to measure directly.

APPENDIX F

ORANGE COUNTY POPULATION CHARACTERISTIC
CITY OF BUENA PARK

BUENA PARK

6650 BEACH BLVD.
PO BOX 5009
BUENA PARK, CA 90620

INCORPORATED: 1953
AREA: 10.1 square miles
TELEPHONE: (714) 562-3500
WEBSITE: www.buenapark.com

Mayor:	Don McCay
Mayor Pro Tem:	Art Brown
Council Members:	Steve Berry
	Jim Dow
	Patsy Marshall

City Manager:	(714) 562-3550
Community Development:	562-3611
City Council:	562-3754
Parks & Recreation:	562-3844
Fire Department:	562-0496
Police Department:	562-3901

Population Characteristics

Population

1950:	#	
1960:	46,401	(*1)
1970:	63,646	(*1)
1980:	64,165	(*1)
1990:	68,784	(*1)
2000:	78,282	(*1)
1994:	72,127	(*2)
1995:	72,617	(*2)
1996:	72,888	(*2)
1997:	73,577	(*2)
1998:	74,855	(*2)
1999:	76,231	(*2)
2000:	77,962	(*2)
2001:	78,799	(*6)
2002:	79,540	(*6)
2003:	80,407	(*6)
2004:	80,709	(*6)
2005:	81,066	(*6)

2000 Racial and Ethnic Population (*1)

	Number	%
White	29,885	38.2%
Hispanic	26,221	33.5%
Asian & Pacific Islander	16,696	21.3%
Black	2,826	3.6%
All Other Races	2,654	3.4%
Total Population:	78,282	100.0%

Current Projections Series (*3) Population (OCP 2004)

2005	81,608
2010	85,855
2015	88,205
2020	90,169
2025	91,642
2030	92,481

Vital Statistics (*4)

	1999	2000	2001
Total Births	1,331	1,249	1,238
Birth Rate*	17.4	16.0	15.7
Total Deaths	478	435	445
Death Rate*	6.2	5.6	5.7

2000 Population by Age (*1)

	Total	%
0-4	6,306	8.1%
5-9	6,961	8.9%
10-14	6,266	8.0%
15-19	5,727	7.3%
20-24	5,385	6.9%
25-34	12,368	15.8%
35-44	12,956	16.6%
45-54	9,280	11.9%
55-59	3,161	4.0%
60-64	2,567	3.3%
65-74	4,331	5.5%
75-84	2,335	3.0%
85+	639	0.8%
Total:	78,282	100.0%
Median Age:	32.0	
Percent of County:		2.8%

Voter Registration, 2005 (*5)

Democratic	13,107	Natural Law	52
Republican	13,353	Misc.	291
Independent	809	Declined to State	6,139
Green	132		
Libertarian	201	**Total:**	**34,084**

City not Incorporated at this date

Sources: (*1) April Decennial Census of Population, U.S. Census Bureau.
(*2) January *Revised* Estimate, State Dept. of Finance.
(*3) Center for Demographic Research, CSUF.
(*4) Orange County Health Care Agency
*Rates per 1,000 population.
(*5) OC Registrar of Voters, February 2005.
(*6) E-5 Released May 2005, State Dept. of Finance.

APPENDIX G

CITY OF BUENA PARK
ORDINANCE NO. 1270

ORDINANCE NO. 1270

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BUENA PARK FINDING THE NECESSITY FOR ADOPTING AN EMERGENCY WATER MANAGEMENT PROGRAM

THE CITY COUNCIL OF THE CITY OF BUENA PARK DOES ORDAIN AS FOLLOWS:

SECTION 1. Declaration of Policy

California Water Code Sections 375 et seq. permit public entities which supply water at retail to adopt and enforce a water conservation program to reduce the quantity of water used by the people therein for the purpose of conserving the water supplies of such public entity. The City Council hereby establishes a comprehensive water conservation program pursuant to California Water Code Sections 375 et seq., based upon the need to conserve water supplies and to avoid or minimize the effects of any future shortage.

SECTION 2. Findings

The City Council finds and determines that a water shortage could exist based upon the occurrence of one or more of the following conditions:

(A) A general water supply shortage due to increased demand or limited supplies.

(B) Distribution or storage facilities of Metropolitan Water District or other agencies become inadequate.

(C) A major failure of the supply, storage and distribution facilities of the Metropolitan Water District of Southern California, or of the City of Buena Park occurs.

The City Council further finds and determines that the conditions prevailing in the Orange County area require that the water resources available be put to maximum beneficial use to the extent to which they are capable, and that the waste or unreasonable use, or unreasonable method of use, of water be prevented and that the conservation of such water be encouraged with a view to the maximum reasonable and beneficial use thereof in the interests of the people of the City of Buena Park and for the public welfare.

SECTION 3. CEQA Exemption

The City Council finds that this ordinance and actions taken hereafter pursuant to this Ordinance are exempt from the California Environmental Quality Act as specific actions necessary to prevent or mitigate an emergency pursuant to Public Resources Code Section 21080(b) (4) and Section 15269(c) of Division 6 of Title 14 of the California Code of Regulations. The City Engineer of the City of Buena Park is hereby directed to file a Notice of Exemption upon adoption of this ordinance.

SECTION 4. Application

The provisions of the Ordinance shall apply to all persons, customers, and property served by the City.

SECTION 5. Authorization

The Director of Public Works or his designated representative, is hereby authorized and directed to implement the provisions of this Ordinance.

SECTION 6. Water Conservation Phases

No customer of the City shall knowingly make, cause, use or permit the use of water supplied by the City for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this Ordinance, in an amount in excess of the amounts authorized by this Ordinance, or during any period of time other than the period of time specified in this Ordinance. At no time shall water be wasted or used unreasonably. The following phases shall take effect upon declaration as herein provided.

PHASE I - Voluntary 10% Reduction in Water Usage. All customers to comply with the following:

1. All single family residential units shall use less than 650 gallons of water per day.

2. All multi-unit residential and mobile home units shall use less than 450 gallons of water per day.

3. All apartment buildings and motel buildings shall use less than 350 gallons average per unit per day.

4. No water shall be used to clean, fill or maintain levels in decorative fountains, ponds, lakes or similar structures used for aesthetic purposes unless such water is part of a recycling system.

5. No restaurant, hotel, cafe, cafeteria or other public place where food is sold, served or offered for sale, shall serve drinking water to any person unless expressly requested.

6. No water customer shall permit water to leak from any facility on the customer's premises; failure or refusal to effect a timely repair of any leak of which the customer knows or has reason to know shall subject said customer to all penalties provided herein for a prohibited use of water.

7. No lawn, landscape, or other turf areas shall be watered or irrigated between the hours of 10:00 a.m. and 5 p.m.; commercial nurseries, and drip irrigation systems shall be exempt from the provisions of this subsection.

8. No water customer shall water or irrigate any lawn, landscape or other turf area in a manner that causes or allows excess water to flow or runoff onto an adjoining sidewalk, driveway, street, gutter or ditch.

PHASE II - Mandatory 15% Reduction in Water Usage. All customers to comply with the following:

1. All single family residential units shall use less than 625 gallons of water per day.

2. All multi-unit residential and mobile home units shall use less than 425 gallons of water per day.

3. All apartment buildings and motel buildings shall use less than 325 gallons average per unit per day.

4. All commercial and industrial business establishments shall reduce water consumption by 5% per billing based on 1990 usage during the same billing period.

5. Item numbers 4 through 8 of Phase I become mandatory under this phase.

PHASE III - Mandatory 20% Reduction in Water Usage. All customers to comply with the following:

1. All single family residential units shall use less than 600 gallons of water per day.

2. All multi-unit residential and mobile home units shall use less than 400 gallons of water per day.

3. All apartment buildings and motel buildings shall use less than 300 gallons average per unit per day.

4. All commercial and industrial business establishments shall reduce water consumption by 10% per billing based on 1990 usage during the same billing period.

5. The use of water from fire hydrants shall be limited to fire fighting and related activities, for construction activities, and other activities necessary to maintain the health, safety, and welfare of the public.

6. No draining and refilling of swimming pools or spas allowed except when required for structural repairs or to comply with public health standards as determined by the County Health officer.

7. No new construction of swimming pools or spas allowed.

8. Item numbers 4 through 8 of Phase I become mandatory under this phase.

PHASE IV - Mandatory 25% Reduction in Water Usage. All customers to comply with the following:

1. All single family residential units shall use less than 550 gallons of water per day.

2. All multi-unit residential and mobile home units shall use less than 350 gallons of water per day.

3. All apartment buildings and motel buildings shall use less than 275 gallons average per unit per day.

4. All commercial and industrial business establishments shall reduce water consumption by 15% per billing based on 1990 usage during the same billing period.

5. Item numbers 5 through 8 of Phase III apply in this phase.

SECTION 7. Conservation Phase Implementation

The City Council shall implement the applicable water conservation phase by public announcement and notice through water billings which shall become effective immediately upon notice.

The City Council shall, by resolution at a City Council meeting, declare, the Conservation Phase or revise the percentage rates or criteria as applicable to the water situation and direct staff to give notice to all customers through the water billings and public announcements.

The effective date of the declared Conservation Phase shall be the date of notice.

SECTION 8. Establish Water Appeals Board

The City Council hereby does establish an Appeals Board, to review appeals concerning relief of conditions or violations that a water customer cannot resolve with staff. The City Council shall adopt such rules and regulations as they deem reasonable and necessary to the formation, procedure and operation of the Appeals Board.

A. There is hereby created a Water Appeals Board to consist of five members to be appointed by the Mayor with the approval of the City Council.

B. The first Water Appeals Board to be appointed shall, at its first meeting, classify its members by lot so that three shall serve for a term of one year and two shall serve for a term of two years. At the expiration of the terms so provided for, successors shall be appointed by the Mayor, with the approval of the Council for a term of four years. Annually, on or before the date established by the City Council, the Mayor shall designate the chairman of the appeals board.

C. Vacancies on the appeals board shall be filled by

appointment of the Mayor, with the approval of the City Council, for the unexpired term. Each member shall serve until his successor is appointed and qualified. A majority vote of the Council shall be required to appoint a member of the appeals board, but a four-fifths vote of the Council shall be required to remove any member of the board from office prior to the expiration of the boardmember's term.

D. Members of the appeals board shall either be residents of this city, employed in the city or engaged in business within the city. No person shall be appointed to the board who holds any salaried public office or employment of the city, nor shall any member, while on the board or for a period of one year after his/her termination of service on the board, be eligible for appointment to any office or employment of the city, except that a former member of the board shall be eligible for appointment to any appointive board, commission or committee of the city or to the City Council.

E. The decision of the Water Appeals Board will be final.

Absence from Board Meetings

If a member of the board shall be absent from three consecutive regular meetings of such board or absent for more than fifty percent of the regular meetings in any one-year period, the office shall be deemed to be vacant and the term of such member terminated, and the secretary of the board shall immediately inform the City Council of such termination

Water Appeals Board -- Powers and Duties

The powers and duties of the appeals board shall consist of:

A. To determine the order of business for the conduct of its meetings and to hold such meetings as may be required by the rules or on call of the chairman or a majority of the members of the board. A majority of the members of the board shall constitute a quorum for the transaction of business;

B. To hold hearings regarding rules to supplement this chapter and subsequent revisions and amendments thereto, and to recommend to the City Manager, for submission to the

Council, such rules as are herein provided for;

C. As provided by this chapter and by the Water Ordinance rules, to receive and hear appeals submitted by any person relative to water usage or alleged violation(s) of the Water Ordinance, and to certify its findings and recommendations as provided in this chapter;

D. In any hearing or investigation conducted by the appeals board, it shall have the power to request and examine records of the City.

Board Officer -- Director of Public Works Powers and Duties

A. The Director of Public Works shall be the board officer. With the approval of the City Council, the Director of Public Works may delegate any of the powers and duties conferred upon him as board officer under this chapter to any other officer or employee of the City.

B. The board officer shall:

1. Attend all meetings of the appeals board and serve as its secretary.

2. Administer all the provisions of this chapter and of the Water Ordinance not specifically reserved to the Council or the appeals board;

3. Prepare and recommend to the Council revisions and amendments to the Water Ordinance, subject to the review and recommendations of the appeals board. The City Attorney shall approve the legality of such revisions and amendments prior to their submission to the Council.

Water Conservation Rules -- Application and Amendments

A. Water conservation rules to supplement this chapter shall be adopted by the City Council by resolution. Such rules may be amended from time to time by resolution of the City Council. Such rules shall be prepared by the board officer and reviewed by the appeals board prior to adoption by the Council.

B. Rules may be formulated as may be necessary and

proper to carry out the intent and purpose of the Water Management Program.

In determining whether relief shall be granted, the appeals board shall take into consideration all relevant factors, including but not limited to:

1. Whether any additional reduction in water consumption will result in unemployment;
2. The number of members above four in the household;
3. The size of the residential property.
4. The number of persons in a residence;
5. Increased number of employees in commercial, industrial, and governmental offices;
6. Increased production requiring increased process water;
7. Water uses during new construction, essential maintenance, or remodeling;
8. Adjustments to water use caused by emergency health or safety hazards;
9. First filling of a permit-constructed swimming pool;
10. Water use necessary for reasons related to family illness or health.
11. Car wash facilities which recycle the water.
12. Laundromats.

Relief from other factors not included in this listing will be added upon review of the Water Appeals Board.

No relief from the curtailment of provisions shall be granted unless the customer shows that he/she has achieved the maximum practical reduction in water consumption other

than in the specific areas in which relief is being sought. The board may request, and customer shall provide, reasonable and necessary information for resolution of the customer's application for relief.

Base Adjustment

The board, in its discretion, may adjust the billing period consumption assigned to any customer if that customer establishes, to the satisfaction of the board, that the billing period consumption, as herein provided, would cause him/her great hardship.

Appropriation of Funds

The City Council shall appropriate such funds as are necessary to carry out the provisions of this chapter.

Effective Date of Chapter

The provisions of this chapter shall become effective on the date specified by the City Council of the City of Buena Park, which is September 3, 1991.

SECTION 9. Request for Exemptions from Regulations

Any person may request to be exempted from some or all of the limitations set forth in this Chapter. All requests for exemption shall set forth, in writing and detail the basis and justification for such request. Written requests for exemption shall be submitted to the Director of Public Works or his designated representative who is given the powers, duties and procedures by which to grant exemptions. The Director of Public Works shall have 15 calendar days from the date such request is received to approve, approve subject to conditions, disapprove, or request additional information. When additional information is requested the 15 day period shall commence at the time the additional information is received.

The Director of Public Works shall prepare a written decision which describes the scope of the exemption granted, any conditions which may be applied to such approval or the basis for denial shall be attached to the requesting person's application for exemption. The person submitting an approved or conditionally approved exemption shall sign such approval or conditional approval and shall attest, under penalty of perjury, that the request for

exemption is true and accurate and the scope of the approval or conditional approval is understood.

Within 10 calendar days from the date of the Director of Public Works' written decision the requesting person may file a written appeal to the City Council-established Water Appeals Board.

The Appeals Board shall have thirty (30) calendar days from the date of such request is received to approve, approve subject to reasonable conditions, disapprove, or request additional information from the requesting party except as provided hereinafter. When additional information is requested the thirty (30) day period shall commence at the time the additional information is received.

The Appeals Board shall prepare a written decision which describes the scope of the exemption granted, any conditions which may be applied to such approval or basis for its denial, and shall attach to this the requesting person's application for such exemption. The person who submitted the request shall sign such approval and shall attest, under penalty of perjury, that the request for exemption is true and accurate and the scope of the approval is understood by such person.

Any and all surcharge fees which have been assessed against a water customer requesting an exemption will be considered with the request for exemption.

The decision of the Appeals Board shall be final.

SECTION 10. Failure to Comply

Violations of Phase I measures by any water customer shall cause notice of such violation to be sent to the customer with information on how to conserve water and a request to call the water department for assistance.

The first violation of Phases II, III and IV measures by any water customer shall cause notice of such violation to be sent to the customer explaining assistance is available to help reduce water consumption and that an appeal system is available. The customer will also be informed that the next violation will cause a $25 surcharge to be applied to the next billing.

The third and subsequent violations of Phases II, III and IV measures by a water customer who has not been granted an exemption shall be assessed a $50 surcharge for each subsequent

billing and service may be discontinued or restricted.

The third and subsequent violations of Phases II, III and IV measures by an industrial or commercial customer shall be assessed a surcharge of $25 for each percentage of water used above the allotted amount.

PASSED AND ADOPTED this 24th day of June, 1991 by the following called vote:

AYES:	5	COUNCILMEMBERS:	Brown, Bone, Chessen, McCune, Griffin
NOES:	0	COUNCILMEMBERS:	None
ABSENT:	0	COUNCILMEMBERS:	None

MAYOR

ATTEST:

Alcene M. Cain
CITY CLERK

I, Alcene M. Cain, City Clerk of the City of Buena Park do hereby certify that the foregoing Ordinance was introduced at a regular meeting of the City Council of the City of Buena Park held on the 3rd day of June, 1991, and was finally passed at an adjourned regular meeting of the Council of the City of Buena Park held on the 24th day of June, 1991.

Alcene M. Cain
City Clerk