2005 URBAN WATER MANAGEMENT PLAN

CITY OF PICO RIVERA
(PICO RIVERA WATER AUTHORITY)

September 2006

Prepared by:

BROWN AND CALDWELL

400 Exchange, Suite 100
Irvine, California 92602

City of Pico Rivera (Pico Rivera Water Authority)
Public Works Department

2005 Urban Water Management Plan
Contact Sheet

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Name of person preparing this plan:

Adrian Diaz, Senior Supervisor
Phone: (562) 755-0176
Fax: (562) 801-4462
Email: adiaz@pico-rivera.org

The Water supplier is a **Municipality**.
The Water Supplier is a **Retailer**.
Utility services provided by the water supplier include **water and recycled water.**
This City is not a Bureau of Reclamation Contractor.
This City is not a State Water Project Contractor.

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ACRONYMS AND ABBREVIATIONS

Act	Urban Water Management Act
AF	acre-feet
AFY	acre-feet per year
APA	Allowed Pumping Allocation
Billing Unit	One hundred cubic feet
BMP	best management practices
CBMWD	Central Basin Municipal Water District
CII	Commercial, Industrial, and Institutional
City	City of Pico Rivera
CUWCC	California Urban Water Conservation Council
DHS	California Department of Health Services
DMM	Demand Management Measures
DWR	California Department of Water Resources
ERP	Emergency Response Plan
ETo	evapotransportation
GPD	gallons per day
Hcf	Hundred cubic feet
HECW	High-Efficiency Clothes Washer
LACSD	Los Angeles County Sanitation Districts
MCL	maximum containment level
MG	million gallons
MGD	million gallons per day
MWD	Metropolitan Water District of Southern California
N/A	Not Applicable
Plan	Urban Water Management Plan
PRWA	Pico Rivera Water Authority
PWD	Pico Water District
RWQCB	Regional Water Quality Control Board
TBD	to be determined
ULFT	Ultra Low Flush Toilet
UWMP	Urban Water Management Plan
WQPP	Water Quality Protection Project
WRP	Water Reclamation Plant
WSCP	Water Shortage Contingency Plan

1.0 INTRODUCTION

This Urban Water Management Plan (Plan) addresses Pico Rivera Water Authority's (PRWA) water system and includes a description of the water supply sources, magnitudes of historical and projected water use, and a comparison of water supply to water demands during normal, dry, and multiple dry years. Presently PRWA water supplies are a combination of groundwater pumped from the Central Water Basin and reclaimed water from the Rio Hondo water reclamation program. Water is supplied to residences and businesses within PRWA's service area.

This section provides background information, Plan coordination with other cities and agencies in the service area, and public participation and adoption of the Plan.

1.1 Urban Water Management Planning Act

The PRWA Plan has been prepared in accordance with the Urban Water Management Act (Act). The Act is defined by the California Water Code, Division 6, Part 2.6, and Sections 10610 through 10657. The Act became part of the California Water Code with the passage of Assemble Bill 797 during the 1983-1984 regular session of the California legislature. The Act requires every urban water supplier providing water for municipal purposes to more than 3,000 connections or supplying more than 3,000 acre-feet of water annually to adopt and submit a plan every five years to the California Department of Water Resources (DWR). Subsequent assembly bills have amended the Act. This plan serves as a long-range planning document for water supply.

1.2 Resource Maximization and Import Minimization

Water management tools have been used by PRWA to maximize water resources. To help maximize water resources, PRWA has developed and implemented various policies and plans, which are referenced throughout this plan. The various components of the 2005 UWMP include evaluation and descriptions of the various sources of water supply, efficient water uses, water service efficiency, demand management measures, implementation strategy, and schedule. Information in this Plan was developed from various sources, including the draft 2005 UWMP by CBMWD.

1.3 Agency Coordination

PRWA coordinated the preparation of this Plan with the appropriate agencies. PRWA is a member of the Central Basin Municipal Water District (CBMWD), a water wholesaler, and information from CBMWD's UWMP was used. Table 1-1 summarizes the coordination process that occurred for the preparation of this Plan.

Table 1-1. (DWR Table 1) Coordination with Appropriate Agencies

	CBMWD	Pico Water District	Public Involvement
Participated in UWMP		✓	
Commented on the draft			
Attended public meetings			
Was contacted for assistance	✓		
Received copy of the draft plan			✓
Was sent a notice of intention to adopt			✓
Not Involved / No Information			

1.4 Public Participation and Plan Adoption

PRWA encouraged community and public interest involvement in the UWMP update through public hearings and inspection of the draft document. Public hearing notifications were distributed through utility bills and published in local newspapers. A copy of the published Notice of Public Hearing is included in **Appendix A**. The hearing provided an opportunity for all residents and employees in the service area to learn and ask questions about their water supply in addition to PRWA's plans for providing a reliable, safe, high-quality water supply. Copies of the draft UWMP were made available for public inspection at the City Clerk's and Utilities Department offices, located at 6615 Passons Boulevard, Pico Rivera, California.

This UWMP was adopted by the City Council on September 19, 2006. A copy of the adopted resolution is provided in **Appendix B**.

1.5 Plan Organization

This section provides a summary of the sections in the UWMP. Section 2 provides a description of the service area, climate, water supply facilities, and transmission system. Section 3 presents historical and projected water use. Groundwater supplies are described in Section 4. Section 5 describes recycled water. Section 6 addresses water conservation. Section 7 describes water shortage contingency planning. Section 8 provides a comparison of future water supply to demand. Various appendices provide relevant supporting documents.

2.0 DESCRIPTION OF EXISTING WATER SYSTEM

This section provides a description of PRWA's service area, climate, and water supply facilities. The following two sections provide the historical and projected water supplies, and the city demands.

2.1 Description of Service Area

Located in Los Angeles County, the City of Pico Rivera lies between the Rio Hondo River and the San Gabriel River at the foot of the Whittier Narrows Dam.

Two separate water purveyors serve the City of Pico Rivera: PRWA and the Pico Water District (PWD). The City of Pico Rivera's total size is 8.4 square miles, of which approximately 5.58 square miles (3,571 acres) are served by PRWA. A map of the City of Pico Rivera that shows PRWA's plants, sampling sites, and wells is included as Figure 2-1. PRWA supplies water to its residential, commercial, industrial, and fire protection customers. PRWA does not supply water to any other water agencies.

2.2 Climate

The source of PRWA's groundwater supplies is influenced by climate. Within the City itself, the climate is characteristically Mediterranean, with mild, dry summers and cool winters. The average annual rainfall is 16 inches.

Average rainfall rates, evapotranspiration rates (ETo), and temperature in PRWA's service area is summarized in Table 2-1.

Table 2-1. (DWR Table 3) Climate

	Standard average ETo[a] (in.)	Average rainfall[b] (in.)	Average temperature[b] (°F)
January	1.86	3.71	58.6
February	2.24	4.07	60.0
March	3.41	3.19	61.7
April	4.80	0.90	65.6
May	5.58	0.23	68.3
June	6.30	0.07	72.3
July	6.51	0.02	76.5
August	6.20	0.02	77.5
September	4.80	0.29	75.8
October	3.72	0.32	70.5
November	2.40	1.28	63.4
December	1.86	1.96	59.1
Annual	49.7	16.06	67.4

[a] Data recorded from wwwcimis.water.ca.gov/cimis/welcome.jsp for Zone 6 (Upland Central Coast and Los Angeles Basin). ETo is equivalent to evapotranspiration, the loss of water from the soil both by evaporation and by transpiration from the plants growing thereon.

[b] 1934-2005 data recorded from NOAA website www.wrcc.dri.edu (Montebello)

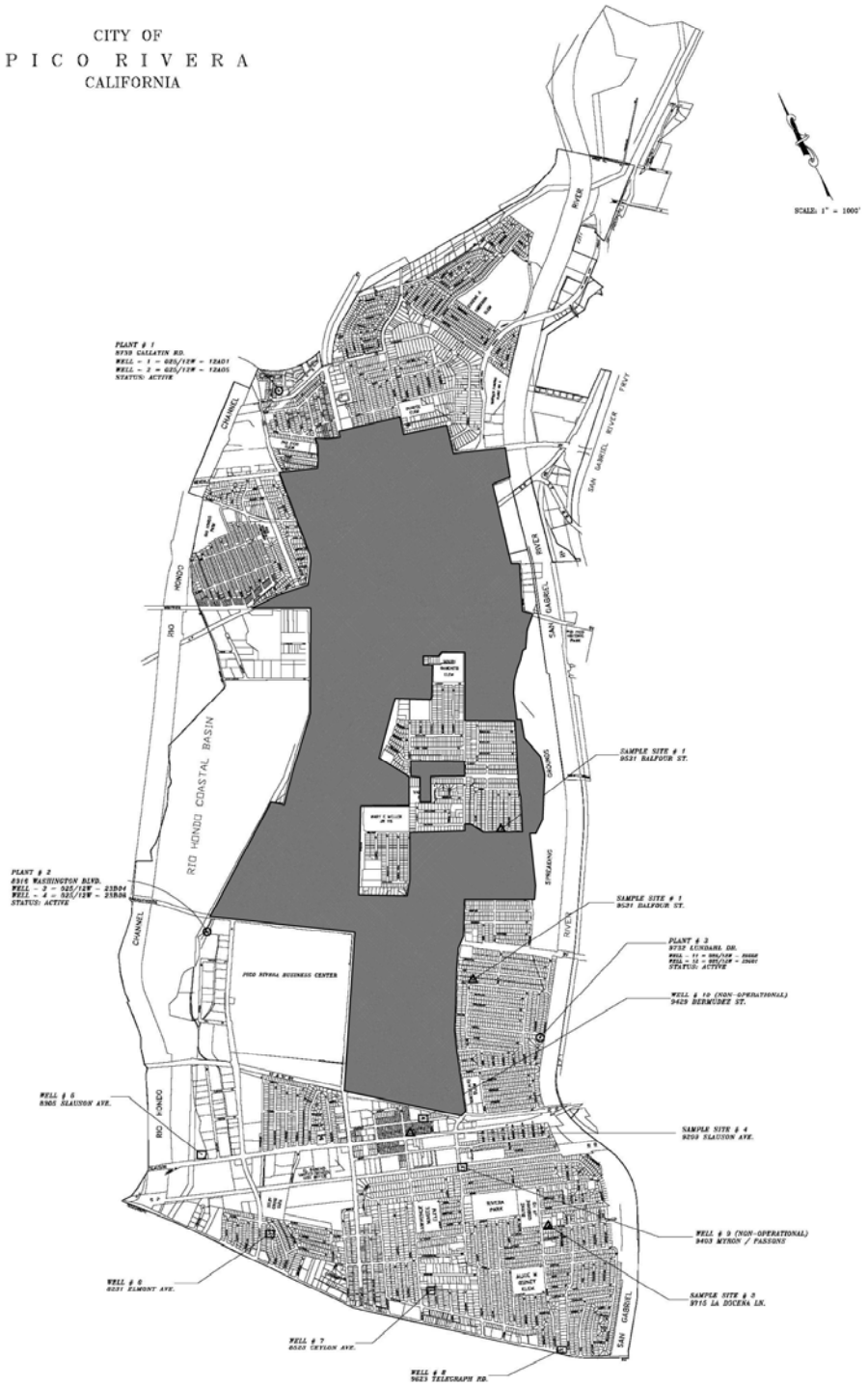

Figure 2-1. PRWA Service Area

Note: The shaded areas are approximate zones of water services provided by PWD, while the remaining areas of the City of Pico Rivera are served by PRWA.

2.3 PRWA Groundwater and Water Transmission Facilities

PRWA has entered into an agreement with CBMWD to treat groundwater that has possibly been contaminated by an underground plume. The project, the Central Basin Water Quality Protection Project (WQPP), is a $10 million federally funded project constructed to prevent a contaminant plume from spreading into the local groundwater supply. Groundwater from three wells is treated at the WQPP treatment plant in Whittier, tested, and released into the San Gabriel River. In exchange, the CBMWD provides treated water to cities and agencies, including PRWA.

PRWA has an annual groundwater right of 5,579 acre-feet. Groundwater is pumped from ten wells within the Central Basin at an average depth of 125 feet. The pumped groundwater is transported through a 17-inch transmission main, and then to 4-inch branches and finally to ¾-inch (and larger) lines for customer use. Additionally there are 3 booster stations with three pumps each, and three reservoirs totaling 0.9 MG in capacity (0.2, 0.2, and 0.5). The PRWA produces 100 percent of its demand through groundwater. These groundwater supplies meet the drinking water standards of the California Department of Health Services.

The water pumped from the Central Basin is of medium quality, and average production costs are about $151 per acre-foot, for both pumping costs and WRD replenishment assessment. The Central Water Basin was adjudicated in 1966 due to the static water level being only twenty feet above sea level, which brought concerns that the basin would be subject to significant saline intrusion and rendered useless. PRWA was party to the adjudication, which has since been amended to allow a 20 percent carryover of annual water rights. PRWA annual water demands in excess of the allowed pumping allocation (APA) are filled with annual leases from other pumpers in the Central Basin.

Each Central Basin pumper is allowed to extract up to 20 percent over its APA, provided the overextraction is made up the following year. Additional overextraction is allowed with prior approval of the DWR Watermaster. In one year PRWA may extract its annual water right, plus the prior year carryover and allowable following year overextraction, plus leased supplies. This provides significant flexibility to meet demands during short-term droughts. Currently discussions are underway to consider increasing pumping allocations, which could increase PRWA's groundwater pumping rights an additional 25 percent; however, this potential increase is not included in the report.

PRWA operates its water system under the authority of Water Supply Permit Amendment No. 04-0700PA-000, issued by the Department of Health Services (DHS) on February 2, 2000, which amended Water Supply Permit No. 77-014. PRWA delivers potable water to its customers (residential and commercial) through its pressurized distribution system, which consists of approximately 90 miles of mains, three small reservoirs with a total storage capacity of 1 MG, ten wells, chlorination and fluoridation facilities, 875 fire hydrants, and 11 booster pumps with a total capacity of 12,500 GPM. Additionally, in case of emergencies needs PRWA is interconnected with the City of Whittier and the San Gabriel Valley Water Company.

2.4 Reclaimed Water Facilities

Currently customers are using potable water for landscaping purposes. In addition, CBMWD's Rio Hondo water reclamation program is supplying a local golf course with 60 AFY, with a future demand of up to 200 AFY (in lieu of potable water for irrigation within PRWA's service area).

3.0 HISTORICAL AND PROJECTED WATER USE

Water use and production records, combined with projections of population, employment, and urban development, provide the basis for estimating future water demands. This section presents information regarding regional demographics, customer-based unit water use, total historical water use, and projections of future PRWA water demands.

3.1 Employment, Land Use, and Population

This section describes PRWA's service area employment and land use characteristics and current and future population.

3.1.1 Employment Characteristics

PRWA's residents are employed in a variety of professions ranging from professional and administrative to laborer and warehouse positions. The median age of City residents is 30.6 years, and the median family income is estimated at about $45,422 per year. The average residence has 3.8 persons per dwelling.

3.1.2 Land Use Characteristics and Population Projections

PRWA's service area is built-out, with land use being 41 percent facilities, 36 percent residential, 14 percent manufacturing, 4 percent commercial, and 3 percent public parks. Table 3-1 provides the estimated current and projected population through the year 2025 for PRWA's service area. The projected growth is based on anticipated densification within the existing residential areas. The City's population is served by PRWA and PWD.

Table 3-1 (DWR Table 2) Population – Current and Projected

	2005	2010	2015	2020	2025
PRWA Service Area Population	35,500	35,900	36,200	36,600	36,900
City of Rivera Population	64,062	64,703	65,350	66,003	66,663

Source: PRWA staff projections of 1 percent growth over five years, based on SCAG 2000 Pico Rivera population

3.2 Historic and Future Water Use

PRWA distributes retail water supply directly to its customers, which include residential (single- and multi-family), commercial, and industrial users. Past, current, and projected water deliveries are shown in Table 3-2. No water sales are made by PRWA to other agencies except in the event of an emergency through emergency interconnections (Table 3-3); additional water uses are identified and quantified in Table 3-4.

Table 3-2. (DWR Table 12) Past, Current, and Projected Water Deliveries (AFY) [a]

Year	Water Use Sector	Single-Family & Multi-Family	Commercial & Industrial [b]	Instit./ Gov.	Landscape / Agric.	Total
2000 Metered	# of accounts	8,933	359	11	30	9,333
	deliveries (AFY)	3,681	1,987	175		5,843
2005 Metered	# of accounts	8,963	384	11	40	9,398
	deliveries (AFY)	3,693	1,691	219		5,603
2010 Metered	# of accounts	9,053	388	11	40	9,492
	deliveries (AFY)	3,730	1,708	221		5,659
2015 Metered	# of accounts	9,143	392	11	41	9,587
	deliveries (AFY)	3,768	1,725	223		5,716
2020 Metered	# of accounts	9,235	396	11	41	9,683
	deliveries (AFY)	3,805	1,742	226		5,773
2025 Metered	# of accounts	9,327	400	11	42	9,780
	deliveries (AFY)	3,843	1,760	228		5,831

[a] A one-percent increase per five years was applied to both the number of accounts and the total deliveries.
[b] Based on delivery data from PRWA staff, commercial/industrial deliveries were assumed to decrease between 2000 and 2005, and were backcalculated using total deliveries minus single-/multi-family and instit./gov./landscape/agric. amounts

Table 3-3. (DWR Table 13) Sales to Other Agencies (AFY)

Water Distributed	2000	2005	2010	2015	2020	2025
None	N/A	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A	N/A

Table 3-4. (DWR Table 14) Additional Water Uses and Losses (AFY)

Water Use	2000	2005	2010	2015	2020	2025
Saline barriers	N/A	N/A	N/A	N/A	N/A	N/A
Groundwater recharge	N/A	N/A	N/A	N/A	N/A	N/A
Conjunctive use	N/A	N/A	N/A	N/A	N/A	N/A
Raw water	N/A	N/A	N/A	N/A	N/A	N/A
Recycled	0	60	100	100	200	200
Unaccounted-for system losses [a]	292	280	283	286	289	292
Total	**292**	**340**	**383**	**386**	**489**	**492**

[a] Assumes 5 percent system losses

The total amount of water distributed by the PRWA is presented in Table 3-5.

Table 3-5. (DWR Table 15) Total Water Use (AFY)

Water Use	2000	2005	2010	2015	2020	2025
Total of Tables 12, 13, and 14	6,135	5,944	6,042	6,102	6,262	6,322

4.0 WATER SUPPLY

PRWA distributes water to its end users. Water from PRWA is distributed via pipelines and pump stations, and is used by PRWA customers to meet their water demands. This section describes the groundwater sources, quantities, supply constraints, and the water quality of the water supply sources. In addition, this section describes desalination and water supply reliability.

4.1 Surface Water

PRWA relies entirely on groundwater, and therefore does not currently utilize surface water. However, PRWA is a member agency of CBMWD and is entitled to purchase imported water from the Metropolitan Water District of Southern California (MWD) through CBMWD. In addition, PRWA can purchase imported water from other agencies is purchased to meet emergency needs; this imported water is taken through an existing tie-in with the City of Whittier.

4.1.1 Physical Constraints

N/A

4.1.2 Legal Constraints

N/A

4.1.2.1 Water Rights.

N/A

4.1.2.2 Water Supply and Transmission System Project.

N/A

4.2 Groundwater

This section presents a description of PRWA's groundwater supply. The groundwater supply facilities are described in Section 2.

4.2.1 Description

Within the region, there are two primary groundwater basins: the Central Basin and the West Coast Basin. Twenty-nine public and private water agencies are supplied by the Basin, for which DWR is the waterrmaster. The Basin is a large alluvial groundwater basin that lies beneath the southeastern portion of the Los Angeles Coastal Plain. The Basin is enclosed on the north by Merced Hills, Whittier Narrows, and Puente Hills, on the east by Orange County, and on the southwest by the Newport Inglewood Uplift. A more detailed description of the Basin is included in **Appendix C**.

4.2.2 Physical Constraints

The physical constraint on the current groundwater supply is the pumping capacity of the existing wells. The amount of groundwater projected to be pumped is presented in Section 4.4 The amount of groundwater pumped and provided to PRWA in the last five years is shown on Table 4-1, and PRWA's projected future allotment through 2025 is shown in Table 4-2.

Table 4-1. (DWR Table 6) Amount of Groundwater Pumped (AFY)

Basin Name (s)	2000	2001	2002	2003	2004
West Coast Basin	N/A	N/A	N/A	N/A	N/A
Central Water Basin	6,135	6,121	5,689	5,381	5,603
% of Total Retail Water Supply	100%	100%	100%	100%	100%

Source: PRWA, 2005

Table 4-2. (DWR Table 7) Amount of Groundwater Projected to be Pumped (AFY)

Basin Name(s)	2010	2015	2020	2025
West Coast Basin	N/A	N/A	N/A	N/A
Central Water Basin	6,042	6,102	6,262	6,322
% of Total Water Supply	100%	100%	100%	100%

Source: PRWA, 2005

4.2.3 Legal Constraints

The only legal constraint to groundwater supply is the APA, as provided under the adjudication of the Basin. As shown in Table 4-3, PRWA's pumping rights are 5,579 AFY. Currently the Water Replenishment District is considering allowing pumpers to increase their production an additional 25 percent, up to PRWA's full water rights, but, as these discussions are still underway, these additional supplies are not included in these analyses. However, when additional supplies beyond the base allotment of 5,579 AFY are required, PRWA has been able to lease water from pumpers who do not extract their entire pumping allotment.

Table 4-3. (DWR Table 5) Groundwater Pumping Rights (AFY)

Basin Name	Pumping Right
West Coast Basin	N/A
Central Basin	5,579
Total	**5,579**

4.3 Desalination

Desalinated water is not currently perceived to be a viable option for PRWA, and neither brackish nor impaired groundwater is pumped (Table 4-4).

Table 4-4. (DWR Table 18) Opportunities for Desalinated Water

Sources of Water	Yield AFY	Start Date	Type of Use	Other
Water purchased from:				
Ocean Water	N/A	N/A	N/A	N/A
Brackish Ocean Water	N/A	N/A	N/A	N/A
Brackish Groundwater	N/A	N/A	N/A	N/A
Other (such as impaired groundwater)	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A

Note: Desalination is not perceived to be a viable option for PRWA.

4.4 Transfer and Exchange Opportunities

Currently, PRWA does not transfer and/or exchange any water supply to or from other entities, and it is not anticipated that transfer or exchange will occur in the future (Table 4-5). However, PRWA does satisfy minor water demands in excess of water rights by water leasing from neighboring agencies on a year-to-year basis.

Table 4-5. (DWR Table 11) Transfer Exchange Opportunities (AFY)

Transfer Agency	Transfer or Exchange	Short term	Proposed Quantities	Long term	Proposed Quantities
None	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A	N/A

4.5 Current and Projected Water Supplies

PRWA does not receive water from a wholesale supplier, so no projections were provided to a wholesale agency (Table 4-6). Similarly PRWA does not have any planned future water supply projects (Table 4-7).

Table 4-6. (DWR Table 19) Agency Demand Projections Provided to Wholesale Suppliers

Wholesaler	2010	2015	2020	2025
N/A	N/A	N/A	N/A	N/A

Table 4-7. (DWR Table 17) Future Water Supply Projects

Project Name	Projected Start Date	Projected Completion Date	Normal-year AF to agency	Single-dry year yield AF	Multiple-Dry-Year 1 AF	Multiple-Dry-Year 2 AF	Multiple-Dry-Year 3 AF
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 4-8 summarizes the current and projected water supplies available to PRWA. The purchased water will meet PRWA's current and planned future water supply demand.

Table 4-8. (DWR Table 4) Current and Planned Water Supplies (AFY)

Water Supply Sources	2005	2010	2015	2020	2025
Water purchased from:					
Groundwater (CBMWD)	5,579	5,579	5,579	5,579	5,579
Imported (City of Whittier)	0	150	150	150	150
Transfers in or out	0	0	0	0	0
Recycled Water (projected use)	60	100	100	200	200
Desalination	0	0	0	0	0
Other (additional groundwater through one-time leases)	305	213	273	333	393
Total	**5,944**	**6,042**	**6,102**	**6,262**	**6,322**

Source: PRWA staff projections

4.6 Water Supply Reliability

This section describes the projected supplies available during single and multiple dry years. In summary, PRWA uses primarily deep groundwater, and has 100 percent reliability regardless of droughts. During short-term periods of water supply reductions, the PRWA would implement its water shortage contingency plan, which is presented in **Appendix D,** along with related ordinances and the resolution adopting the plan. Table 4-9 includes the anticipated local and imported water

supplies for the PRWA during a normal water year, a single dry water year, and multiple dry water years. The basis for the information in Table 4-9 is provided in Table 4-10

Table 4-9. (DWR Table 8) Supply Reliability (AF Year)

2010	Normal Water Year (Average)	Single Dry Year	Multiple Dry Water Years		
			2008	2009	2010
Groundwater (Local) Supply	6,042	6,042	6,042	6,042	6,042
	% of Normal	100%	100%	100%	100%
Imported Supply (a)	0	0	0	0	0
	% of Normal	100%	100%	100%	100%
2015	**Normal Water Year (Average)**	**Single Dry Year**	**Multiple Dry Water Years**		
			2013	**2014**	**2015**
Groundwater (Local) Supply	6,102	6, 102	6, 102	6, 102	6, 102
	% of Normal	100%	100%	100%	100%
Imported Supply (a)	0	0	0	0	0
	% of Normal	100%	100%	100%	100%
2020	**Normal Water Year (Average)**	**Single Dry Year**	**Multiple Dry Water Years**		
			2018	**2019**	**2020**
Groundwater (Local) Supply	6,262	6,262	6,262	6,262	6,262
	% of Normal	100%	100%	100%	100%
Imported Supply (a)	0	0	0	0	0
	% of Normal	100%	100%	100%	100%
2025	**Normal Water Year (Average)**	**Single Dry Year**	**Multiple Dry Water Years**		
			2023	**2024**	**2025**
Groundwater (Local) Supply	6,322	6,322	6,322	6,322	6,322
	% of Normal	100%	100%	100%	100%
Imported Supply (a)	0	0	0	0	0
	% of Normal	100%	100%	100%	100%

Source: PRWA staff; CBMWD UWMP
(a) Includes recycled water supply

Table 4-10. (DWR Table 9) Basis of Water Year Data

Water Year Type	
Average Water Year	Allowable Pumping Allocation for PRWA
Single-Dry Water Year	Allowable Pumping Allocation for PRWA
Multiple-Dry Water Years	Allowable Pumping Allocation for PRWA

Source: CBMWD UWMP

Factors resulting in inconsistency of PRWA's supply are summarized in Table 4-11, which shows that climactic factors are the only factors resulting in an inconsistent water supply. Water quality issues are not anticipated to have significant impact on water supply reliability. If applicable in the future, chemical contamination and the lowering of maximum contaminant levels (MCLs) for

naturally occurring constituents can be mitigated by constructing new treatment facilities, which would have a significant cost.

Table 4-11. (DWR Table 10) Description of the Factors Resulting in Inconsistency of Supply

Name of Supply	Legal	Environmental	Water Quality	Climatic
Central Basin (groundwater)				X
Leased water rights (groundwater)				X
Imported (City of Whittier)				X

PRWA's groundwater supply is supplemented by individual leases of groundwater rights from various water rights holders, which is sufficient to meet PRWA's demand projections, as previously shown in Table 4-6. As PRWA has no wholesaler sources, Tables 4-12, 4-13, and Table 4-14 are not applicable.

Table 4-12. (DWR Table 20) Wholesaler Identified and Quantified the Existing and Planned Sources of Water (AFY)

Wholesaler sources	2010	2015	2020	2025
N/A				

Based on the water supply reliability analysis, 100 percent of PRWA's demands will be met for single and multiple dry years.

Table 4-13. (DWR Table 21) Wholesaler Supply Reliability – % of Normal AFY

Wholesaler Sources	Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
			Year 1	Year 2	Year 3
N/A					

Table 4-14. (DWR Table 22) Factors Resulting in Inconsistency of Wholesaler's Supply

Name of supply	Legal	Environment	Water Quality	Climatic
N/A				

4.7 Water Quality Impacts on Future Water Supply

The quality of PRWA's water deliveries is regulated by the California Department of Health Services (DHS), which requires regular collection and testing of water samples and tests to ensure that the quality meets state and national regulatory standards and does not exceed MCLs. Through its approved laboratory contracts, PRWA performs water quality testing which have consistently yielded results within the acceptable regulatory limits.

The quality of PRWA's groundwater supply sources over the next 20 years is expected to exceed DHS standards. Groundwater will continue to be treated to meet drinking water standards, and no impacts to groundwater or recycled water supplies due to water quality deficiencies are foreseen to occur in the next 20 years. Table 4-15 summarizes the current and project water supply changes due to water quality.

Table 4-15. (DWR Table 39) Current and Projected Water Supply Changes due to Water Quality – Percentage

Water Source	2005	2010	2015	2020	2025
Groundwater	0	0	0	0	0
Recycled water	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**

5.0 RECYCLED WATER

Water recycling is the treatment and management of municipal, industrial, or agricultural wastewater to produce water that can be reused for beneficial uses and for offsetting drinking water supplies. Beneficial uses of recycled water includes irrigation, groundwater recharge, and industrial supplies. "Recycled water" is defined in the California Water Code as "water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur." The Department of Health Services sets the water quality criteria for specific uses of recycled water in Title 22 of the California Code of Regulations.

This section provides information on amount of generated wastewater and the amount available for potential reuse, existing disposal of wastewater, existing recycled water uses, and future potential water reuse.

5.1 PRWA Coordination

The use of recycled water reduces demands on PRWA's water supply system. In order to continually optimize the use of recycled water to offset demands on the potable water system, PRWA coordinates as needed with local authorities responsible for water supply and wastewater collection and distribution. Table 5-1 identifies these authorities.

Table 5-1. (DWR Table 32) Participating Agencies

Agency Type	Agency Name	Plan Development Role
Local water wholesaler	Central Basin Municipal Water District (CBMWD)	Provided recycled water supply and demand information
Wastewater agency	Los Angeles County Sanitation Districts	Provided recycled water feed stock and demand information
Other	Public Constituencies	Provided demand information

5.2 Wastewater Quantity and Disposal

This section provides information on the wastewater systems and the amount of wastewater collected and disposed within PWRA's service area. Recycled water planning efforts are lead by the CBMWD and Los Angeles County Sanitation Districts (2,18). PRWA's irrigation customers currently use approximately 60 AFY of recycled water.

5.2.1 Wastewater Collection and Treatment

All of PRWA's water service areas are sewered. The estimated year 2005 sewer service population is approximately the same as the number of water customers. Within PRWA's service area, the Los Angeles County Sanitation District (LACSD) is responsible for wastewater collection and conveyance to the San Jose Creek Water Reclamation Plant, located in unincorporated Los Angeles

County adjacent to the City of Whittier. LACSD also treats wastewater from several other municipalities. LACSD discharges treated effluent into the ocean, as well as providing recycling water for use in groundwater recharge and irrigation of parks, schools, and greenbelts.

Table 5-2. Wastewater Treatment Within PRWA's Service Area

Operator	District or Plant	Wastewater Source (water supply)
Los Angeles County Sanitation District	San Jose Creek Water Reclamation Plant	PRWA water and other local water

The approximate volume of wastewater collected and treated, and the volume that meets recycled water standards, are described in Table 5-3. PRWA does not maintain any records of sewage, so the volumes in Table 5-3 are calculated assuming 55 percent of residential water and 80 percentage of commercial water used is returned to the sewer system.

Table 5-3. (DWR Table 33) Amount of Wastewater Collected and Treated (AFY)

Type of Wastewater	2000	2005	2010	2015	2020	2025
Raw sewage	3,652	3,422	3,456	3,491	3,526	3,561
Total	**3,652**	**3,422**	**3,456**	**3,491**	**3,526**	**3,561**

5.2.2 Wastewater Disposal

Sewage collected by LACSD and sent to the San Jose Creek WRP, including discharges of PRWA sewage, is treated to a blend of advanced primary, secondary levels, and tertiary treatment. Of the 100 million gallons of wastewater per day the plant processes, approximately 35 million gallons are reused at 17 different sites, one of which is the Pico Rivera Municipal Golf Course.

5.3 Recycled Water Use

In an effort to conserve potable water, the Rio Hondo water reclamation program is being undertaken; portions of the system are already in place. Currently only one PRWA customer, the Pico Rivera Municipal Golf course, is using recycled water for landscaping. The golf course's usage is expected to increase to 100 AFY in 2010, and then to 200 AFY in 2015, when the golf course is to double in size to eighteen holes.

Table 5-4. (DWR Table 37) Recycled Water Use – 2005 Projection Compared with 2005 Actual (AFY)

	2000 Projection for 2005	2005 Actual Use
Total Recycled Water Usage	N/A	60
Total	**N/A**	60

Other potential recycled water users are currently using potable water. In 2000, PRWA identified potential recycled water users in its UWMP. User types included golf courses, school athletic fields, and private business landscaping. Specific potential customers were listed, along with an estimate of recycled water use at that site. Of these potential users, only the golf course has proven feasible, and no additional users are currently planned.

Table 5-5 describes the potential for use of recycled water by the customers within the PRWA's service area and use.

Table 5-5. (DWR Table 35) Recycled Water Uses – Actual and Potential (AFY)

Type of Use	Tertiary	2005	2010	2015	2020	2025
Agriculture	Tertiary	N/A	N/A	N/A	N/A	N/A
Landscape	Tertiary	60	100	200	200	200
Wildlife Habitat	Tertiary	N/A	N/A	N/A	N/A	N/A
Wetlands	Tertiary	N/A	N/A	N/A	N/A	N/A
Industrial	Tertiary	N/A	N/A	N/A	N/A	N/A
Groundwater Recharge	Tertiary	N/A	N/A	N/A	N/A	N/A
Other	Tertiary	N/A	N/A	N/A	N/A	N/A
Total	**Tertiary**	**60**	**100**	**200**	**200**	**200**

Table 5-6 describes the projected recycled water use that is potentially feasible for PRWA customers.

Table 5-6. Projected Recycled Water Usage by PRWA Customers

	Volume (AFY)				
Customer	**2005[a]**	**2010**	**2015**	**2020**	**2025**
Pico Rivera Municipal Golf Course [a]	60	100	200	200	200
Total	**60**	**100**	**200**	**200**	**200**

[a]Based on projections from PRWA staff

The projected future use of recycled water by the PRWA is found in Table 5-7.

Table 5-7. (DWR Table 36) Projected Future Use of Recycled Water in Service Area (AFY)

Type of Use	2010	2015	2020	2025
Agriculture	N/A	N/A	N/A	N/A
Landscape	100	200	200	200
Wildlife Habitat	N/A	N/A	N/A	N/A
Wetlands	N/A	N/A	N/A	N/A
Industrial	N/A	N/A	N/A	N/A
Groundwater Recharge	N/A	N/A	N/A	N/A
Other (type of use)	N/A	N/A	N/A	N/A
Total projected use of Recycled Water	**100**	**200**	**200**	**200**

5.4 Promotion of Recycled Water Use

One of the primary means of promoting recycled water is the fact that it is mandated by law when available at a reasonable price and is of acceptable quality. There is the potential for additional incentives such as pricing discounts, financing of retrofitting costs, and assistance with any technical, regulatory, or institutional issues that might arise.

Table 5-8. (DWR Table 38) Methods to Encourage Recycled Water Use

Actions	AF of use projected to result from this action			
	2010	2015	2020	2025
Financial incentives	TBD	TBD	TBD	TBD
Others	TBD	TBD	TBD	TBD
Total	TBD	TBD	TBD	TBD

6.0 WATER CONSERVATION

Water conservation is a method available to reduce water demands, thereby reducing water supply needs for PRWA. PRWA implements some water conservation demand management measures (DMMs).

The unpredictable water supply and ever-increasing demand on California's complex water resources resulted in a coordinated effort by the DWR, water utilities, environmental organizations, and other interested groups to develop a list of urban DMMs for conserving water. The California Urban Water Conservation Council (CUWCC) was created to assist in increasing water conservation through partnerships among urban water agencies, public interest organizations, and private entities. This consensus-building effort resulted in a Memorandum of Understanding, as amended September 16, 1999, which formalizes an agreement to implement DMMs and provide a cooperative effort to reduce the consumption of California's water resources.

PRWA is not a member of the CUWCC; however, many of its own efforts to conserve water fall along the same lines as the DMMs set forth by the CUWCC listed below.

Table 6-1. California Urban Water Conservation Council Best Management Practices

Best Management Practices, BMP
DMM 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers
DMM 02: Residential Plumbing Retrofit
DMM 03: System Water Audits, Leak Detection, and Repair
DMM 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections
DMM 05: Large Landscape Conservation Programs and Incentives
DMM 06: High-Efficiency Washing Machine Rebate Programs
DMM 07: Public Education Programs
DMM 08: School Education Programs
DMM 09: Conservation Programs for CII Accounts
DMM 10: Wholesale Agency Assistance Programs
DMM 11: Conservation Pricing
DMM 12: Conservation Coordinator
DMM 13: Water Waste Prohibition
DMM 14: Residential ULFT Replacement Programs

6.1 Demand Management Measures

6.1.1 DMM No. 1 – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

PRWA encourages the use of water use surveys focusing on water-using devices inside the home, such as toilets, faucets, and showerheads. Upon request, a PRWA employee checks for leaks and tests the flow indoors and outdoors. Once the survey is completed, recommendations are provided for retrofitting certain water use devices, and educational materials are supplied to the resident.

Programatic support for this is provided by CBMWD, with funding for residential survey devices from the Metropolitan Water District of Southern California (MWD).

6.1.2 DMM No. 2 – Residential Plumbing Retrofit

PRWA encourages its customers to use ultra-low flush (ULF) toilets, and PRWA coordinates its efforts with CMBWD to distribute waterless urinals to various schools within the El Rancho Unified School District, and some commercial customers.

PRWA also participates in CBMWD's program to distribute low-flow showerheads and aerators. This program is administered by the CBMWD and the West Basin Municipal Water District (WBMWD), with financial assistance from the Metropolitan Water District of Southern California. Low-flow showerhead programs have been and will continue to be promoted.

6.1.3 DMM No. 3 – System Water Audits, Leak Detection, and Repair

Over the last ten years, PRWA has implemented water audits and leak detection and repair. This service has resulted in a reduction of unaccounted water losses to about five percent per year. Due to PRWA being located in an active earthquake zone, the system water audit and leak detection and meter calibration programs have been permanently integrated into the utility operations, which enables continuous monitoring of all mains, laterals, and meters. Additionally, in order to ensure that all valves and meters are working properly, PRWA services both its largest meters and most compound meters annually. PRWA also replaces its meters as needed, exercises the valves throughout the year, and flushes the water mains annually.

PRWA meets or exceeds minimum fire flow requirements, in accordance with the California Water Works Standards.

6.1.4 DMM No. 4 – Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections

PRWA's service area is fully metered, and meters are required for all new connections. All of PRWA's water connections are billed a fixed service charge plus commodity usage.

6.1.5 DMM No. 5 – Large Landscape Conservation Programs and Incentives

Other than City-owned parks, there is no significant landscaping within PRWA's service area. However, the City of Pico Rivera has adopted a Water Efficient Landscape Ordinance, which requires water-efficient landscaping and is applied to City-wide industrial, commercial, and residential projects. In addition, with the completion of CBMWD's Rio Hondo water reclamation program recycled water is used by the local golf course.

6.1.6 DMM No. 6 – High-Efficiency Washing Machine Rebate Programs

PRWA incorporates information about high-efficiency appliances, including washing machines, into its public information programs. At present there are several residential and commercial toilet and washer rebates offered by CBMWD, and PRWA will continue to monitor and promote the availability of these and other rebate programs to its customers.

6.1.7 DMM No. 7 – Public Information Program

PRWA coordinates its efforts with CBMWD and energy utilities to educate the public on water conservation. Board members regularly promote water conservation at public functions, community groups, and schools, and PRWA is considering expanding its public information program to include bill inserts and brochures.

6.1.8 DMM No. 8 – School Education Programs

PRWA and its Board members work in coordination with the local school district to educate students about the importance of water conservation, and grade-appropriate materials are distributed.

6.1.9 DMM No. 9 – Conservation Programs for Commercial, Industrial, and Institutional Accounts

PRWA does not current have any conservation programs for commercial, industrial, and institutional accounts. However, PRWA can take advantage of programs offered by CMBWD and MWD that offer rebates to business, schools, and other facilities for items such as commercial clothes washers, waterbrooms, cooling tower conductivity controllers, pre-rinse spray nozzles, and x-ray machine recirculating devices and commercial toilets and urinals. In addition, PRWA is considering passing a resolution to require the future construction projects to use water conservation methods for plumbing fixtures, including ULFTs, low-flow showerheads, and waterless urinals.

6.1.10 DMM No. 10 – Wholesale Agency Assistance Program

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

6.1.11 DMM No. 11 – Conservation Pricing

PRWA has implemented a tiered water rate structure which was designed to discourage excessive water use. All users pay a minimum monthly service charge plus a three-tiered commodity rate that increases with increased water consumption.

6.1.12 DMM No. 12 – Conservation Coordinator

PRWA has a Water Committee in charge of the coordination and oversight of conservation programs and DMM implementation. The Water Committee meets to coordinate planning efforts, education and public information, and other water management activities, and to consider adoption

of compatible rationing period landscape restrictions and "no-waste" ordinances. In addition, PRWA may consider joining the CUWCC in the future.

6.1.13 DMM No. 13 – Water Waste Prohibitions

Prohibitions against wasteful use of water are followed, as set forth in the California Constitution. PRWA has also adopted Resolution 3945 (included in Appendix D), which establishes prohibitions regarding the wasteful use of water.

6.1.14 DMM No. 14 – Residential ULFT Replacement Program

PRWA has previously participated with CBMWD in its ULFT replacement program, which supplied ULFTs free of charge to PRWA customers. CBMWD continues to partner with local water purveyors like PRWA, offering both a $50 rebate for the purchase and installation of ULFTs and a $70 for the purchase and installation of dual-flush toilets, and PRWA is considering participating again in the future.

6.2 Determination of Implementation

Apart from DMM No. 10, which is not applicable to PRWA, PRWA does not have any DMMs that are not currently being implemented or that are not scheduled for implementation.

Table 6-2. (DWR Table 16) Evaluation of Unit Cost of Water Resulting from Non-implemented DMMs

Non-implemented & Not Scheduled DMM / Planned Water Supply Projects	Per-AF Cost ($)
Not Applicable	$0

7.0 WATER SHORTAGE CONTINGENCY PLAN

This section describes PRWA's water shortage planning efforts. Water shortages may result from weather variations and catastrophes such as pipeline failures, supply contamination, and earthquakes. During periods of drought, PRWA will utilize its Water Shortage Contingency Plan (WSCP) adopted in 1992 and mandated by AB11X.

Ordinance No. 826 stipulates the use of a four-stage rationing plan to be used in case of water shortage. The rationing plan utilizes both voluntary and mandatory water rationing depending on the severity of the water shortage.

It is highly unlikely that PRWA's ability to pump groundwater would be impeded by natural disasters for more than several days, as studies indicate that groundwater wells would probably be back in operation just 5 days after a severe earthquake.

PRWA storage reservoirs hold treated water capable of providing all PRWA customers with 45 GPCD of water for 12 hours in case of emergency. Therefore, if well site production was stopped due to electrical failure or transmission line malfunctions, these reservoirs would be the key water supply sources to the PRWA service area.

7.1 PRWA Water Shortage Contingency Plan

In 1992, PRWA adopted its WSCP in response to California Assembly Bill Number 11. The WSCP is intended to conservatively manage PRWA water resources to provide water to its customers on an equitable and business-sound basis, in the event of a curtailment of deliveries of up to 50 percent.

7.2 Action Stages

As summarized in Table 7-1, the PRWA has a four-stage plan to meet reductions in water supply. Table 7-1 outlines the water supply shortage stages and conditions.

Table 7-1 (DWR Table 23) Water Supply Shortage Stages and Conditions

Stage No.	Water Supply Conditions	Shortage Level
I	15% reduction goal (voluntary)	up to 15%
II	25% reduction goal (voluntary and mandatory)	15-25% mandatory
III	35% reduction goal (mandatory)	25-35% mandatory
IV	50% reduction goal (mandatory)	35-50%+ mandatory

7.3 Three-Year Minimum Supply

Table 7-2 compares normal conditions and the driest three-year period for PRWA's service area. PRWA's consumption needs are expected to be met under a three-year dry period.

Table 7-2. (DWR Table 24) Three-Year Minimum Water Supply

	Normal			Multiple Dry Year		
Source	**2006**	**2007**	**2008**	**2006**	**2007**	**2008**
Groundwater Supplies	5,579	5,579	5,579	5,579	5,579	5,579
Imported Supply	0	0	0	0	0	0
Total	**5,579**	**5,579**	**5,579**	**5,579**	**5,579**	**5,579**

7.4 Catastrophic Supply Interruption Plan

PRWA developed its Emergency Response Plan (included in **Appendix E**) to meet emergencies within its service area and has updated the ERP as necessary. The Plan provides information on PRWA operations, assigns responsibilities, and establishes general policies and procedures associated with operations during natural disasters, technological incidents, and nuclear defense emergencies.

Table 7-3 summaries various possible catastrophes and a summary of the actions that would be taken in response.

Table 7-3. (DWR Table 25) Preparation Actions for a Catastrophe

Possible Catastrophe	Summary of Actions
Fire	For motors and switchgear (including well facilities, pumps, or control centers), staff are not allowed to enter the site. Staff will notify the fire authority and be available to assist as necessary. For fires in the motor or switchgear, where possible, the main electrical breaker should be turned off.
Earthquake	Staff will take appropriate defensive measures until the earthquake has passed. After an earthquake, pumps, wells, control cabinets, reservoirs, and pipelines will be inspected for damage. Preparation will be initialized for the isolation of the reservoir water supply and prepared for emergency distribution.
Flooding	Sandbagging will be used, where feasible, to protect PRWA facilities. Motors or electrical switchgears that could come in contact with floodwaters will be turned off, and the main breakers will be deactivated. After a flood, well and distribution system samples will be taken to ensure water quality has not been compromised. If contamination is present, immediate action will be taken, including additional chlorination, flushing, activation of interconnections, public notification, and/or boil water orders.

Possible Catastrophe	Summary of Actions
Sabotage of Water Supplies	If there is evidence of tampering, such as an open or damaged reservoir hatch, apparent tampering with wells or pumps, suspicious containers left on site, or water having a strange odor or color, the following steps must be taken: ▪ Isolate the affected system ▪ Immediately notify your supervisor and management ▪ Isolate the area and notify local law enforcement officials ▪ Collect water samples for analysis ▪ Notify the Health Department ▪ Notify the public, as appropriate ▪ Flush and chlorinate, as appropriate The system will be returned to service only after testing has deemed it safe.
System Contamination	For contamination within the distribution system, reservoir, or wells, the procedures in the Emergency Chlorination Plan will be followed.
Disruption of Supply	In the event of supply due to issues such as well failure, commercial power failure, and pipeline failure, emergency generators will be activated. If the problem involves the operation of a well, a well/pump repair company will be contacted for assistance.
Civil Disorder	In the event of civil disorder, PRWA facilities will remain locked and, as practical, staffed by PRWA staff. Additional private security guards will be hired as required.
Disruption of Distribution Pumping	For disruptions in distribution pumping, such as a fire at a well site, staff will first contact his or her superintendent to inform the superintendent of the situation. After calling for assistance, the site will be shut down, and an alternate well will be activated, after which the chlorine residual will be checked.
Main Breaks	Repairs of main breaks will be immediately initiated and repaired by PRWA staff, unless the General Manager or the field superintendent deems that assistance is necessary. A PRWA representative will monitor the repair activity to insure that all repair work is in accordance with AWWA and PRWA standards.
Damaged or Sheared Fire Hydrant	Damaged/sheered hydrants shall be isolated by closing the hydrant lateral valve, and repairs will be made thereafter. If repairs cannot be made, the area will be delineated and secured, and a bag will be placed over the hydrant to prevent usage. Staff will immediately notify the local fire authority of the hydrant's location, and that it is out of service.
Commercial Power Outage	Staff will contact the Southern California Edison (SCE) to determine the anticipated outage duration. Three portable diesel-powered generators are available to provide power for distribution pumping, and one well site is equipped with a natural gas engine that is designed to run in the case of a power outage. Once power has been restored, time will be allowed to let the SCE system stabilize, and then the generator and natural gas engine will be stopped.
Building Evacuation	For a building evacuation, staff shall follow the posted evacuation route to the assigned staging area. The evacuation commander will sound the evacuation alarm and oversee the evacuation. If it is safe to do so, gas and electrical service to the building will be shut off.
Bomb Threats	All bomb threats are taken seriously. For an occupied building, the building must be evacuated until the threat is alleviated. PRWA management, local police, and local fire authorities must be immediately notified of the threat. PRWA employees are not allowed to try to disable a suspected bomb or suspicious device, and the area will be secured, allowing access only to authorized personnel.
Emergency Water	If it is impossible to distribute water through the normal distribution system, emergency water distribution is possible from the reservoir. PRWA staff will create a distribution

Possible Catastrophe	Summary of Actions
Disbursement	center to supply water requests from reservoir taps.
Emergency Notification	For emergency events requiring public notification, PRWA will follow the directions ascribed by the state health department. As necessary, electronic media, radio and television, and print media (in both English and Spanish) will be utilized. Two vehicles with loudspeakers will also be available to notify residents of the emergency and any special circumstances such as water conservation requests. This should be accomplished within 2.5 hours.

7.5 Prohibitions, Penalties, and Consumption Reduction

7.5.1 Mandatory Water Use Prohibitions

PRWA has developed and adopted a specific water shortage management plan to meet targeted reductions in total water demand during a shortage scenario. Mandatory prohibitions on water usage during water shortages apply to all PRWA customers. Table 7-4 lists examples of prohibitions in the ordinance and the stage when the prohibition becomes mandatory.

Table 7-4. (DWR Table 26) Mandatory Prohibitions

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Installed landscape must be native to the Pico Rivera climate	I
No loss of water from user's property when irrigating landscape	I
Irrigation during morning and evening hours to avoid evaporation loss	I
All leaks must be repaired	I
Use of a broom or other non-water means to clean hardscape	I
Use of reclaimed water where and when available	I
Potable water used to irrigate grass, lawns, ground cover, shrubbery, vegetation, and trees shall not result in runoff of more than five minutes.	II
Potable water shall not be used to wash sidewalks, walkways, driveways, parking lots, open ground, or other hard-surfaced areas, except where necessary for public health or safety.	II
Potable water shall not be allowed to escape from breaks within the customer's plumbing system for more than twenty-four hours after the customer is notified or discovers the break.	II
Washing cars, boats, trailers, aircraft, or other vehicles by hose shall not be done without a shutoff nozzle and bucket, except to wash such vehicles at commercial or fleet vehicle washing facilities using water recycling equipment.	II

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
No restaurant, hotel, café, cafeteria, or other public place where food is sold, served, or offered for sale, shall serve drinking water to any customer unless expressly requested.	III
Cleaning, filling, or maintaining decorative fountains, lakes, or ponds with potable water is prohibited.	III
Where non-potable or recycled water is sufficient, potable water may not be used for construction, compaction, dust control, street or parking lot sweeping, or building washdown.	III
General Manager must issue prior approval for the use of potable water for sewer system maintenance or fire protection training.	III

7.5.2 Water Reduction Methods

The PRWA will use the following methods during the four phases listed in Table 7-5. In all phases, public information notices will be used to inform and persuade customers to reduce water demand levels.

Table 7-5. (DWR Table 27) Consumption Reduction Methods

Water Use	Stage When Method Takes Effect	Projected Reduction (%)
Voluntary best efforts in general water use - Reduce general use by 10% - Water-efficient landscaping, and use of native plants, is encouraged - No run off from irrigation - Cease irrigation between 11 a.m. and 4 p.m.	I	10
Voluntary and mandatory restriction in general water use (same as Stage I restrictions plus): - Reduce general use by 20% - Cease irrigation between 6 a.m. and 6 p.m., except with hand-held hose or using reclaimed water - Irrigation only 3 times per week	II	20
Mandatory restriction in general water use (same as Stage II restrictions plus): - Reduce general use by 35% - Commercial car washing using recycled water only - No golf course water unless reclaimed water is used - Irrigation only 2 times per week	III	35
Mandatory restrictions (same as Stage III restrictions plus): - Reduce general use by 50% - Water rationing by customer class - Irrigation only 1 time per week	IV	50

7.5.3 Penalties for Excessive Water Use

The PRWA's current rate structure consists of a fixed monthly rate (based on meter size) plus a consumption charge based on actual water delivered and a power charge. Each PRWA customer has an allotment based on seasonal patterns, and each customer shall be notified of their classification and allotment by mail before the Water Shortage Emergency takes effect. New customers and connections will be notified at the commencement of service. For all PRWA customers, an excess use penalty per HCF of water will be applied for water used beyond the applicable allocation. After one written warning, PRWA may install a flow-restricting device on the service line of any customer observed by PRWA staff to be using water for any non-essential or unauthorized use of water. The penalties and charges are shown in Table 7-6.

Table 7-6. (DWR Table 28) Penalties and Charges

Penalty or Charge	Stage When Penalty Takes Effect
Excess use charge assessed	III
Installation of flow restrictor	IV

7.6 Revenue Impacts on Reduced Sales

Anticipated shortfalls in projected revenue due to water supply shortages would need to be covered through increased water rates and/or an advance from funds set aside by PRWA. PRWA receives 93 percent of its normal annual income from monthly charges. Surplus revenues are used to fund the water system capital improvements. Anticipated shortfalls in projected revenue due to water supply shortages are be covered through an Emergency Fund, which is maintained at 75 percent of normal annual PRWA revenue. However, a rate increase could still be needed during a prolonged water shortage.

Table 7-7. (DWR Table 29) Proposed Measures to Overcome Revenue Impacts

Name of Measures	Summary of Effects
Emergency Fund	PRWA has an Emergency Fund to be used in times of drought and emergencies to offset the loss of revenue. PRWA could also advance funds from its General Fund for the loss of essential revenue
Rate adjustment	The existing rate structure could be adjusted to recapture a portion of the lost revenue, which would affect all water users within PRWA's service area.

Measures to overcome expenditure impacts and estimated dollar savings are provided in Table 7-8.

Table 7-8. (DWR Table 30) Proposed Measures to Overcome Expenditure Impacts

Names of measures	Summary of Effects
Curb all discretionary spending	Discretionary spending is not considered to be a significant budget item.
Defer Capital Improvement Program	Certain non-essential projects (including scheduled facility replacement and refurbishments) could be delayed without having an adverse effect.

7.7 Water Use Monitoring Procedures

As defined in Table 7-9, water use monitoring mechanisms would be put in place to record the actual reduction in water use.

Table 7-9. (DWR Table 31) Water Use Monitoring Mechanisms

Mechanisms for Determining Actual Reductions	Type and Quality of Data Expected
Monitor daily production/distribution records	Daily production and distribution records would be monitored, enabling PRWA staff to determine if reduction goals are being met. Customers would be alerted to actual water use (increase/decrease).
Water meter auditing	Monitoring of excessive water use with frequent meter readings of high-volume users.

8.0 WATER SUPPLY VERSUS DEMAND COMPARISON

This section provides a comparison of the projected water supply and demand for PRWA from 2005 through 2025. Water supply to demand comparisons are also provided for single dry year and multiple dry year scenarios. The water demands are developed in Section 3, water supplies are defined in Section 4, and recycled water supplies are presented in Section 5 of this report.

8.1 Normal Water Supply vs. Demand Comparison

Water is delivered within PRWA's service area by PRWA to residential, industrial, and commercial customers to meet their demands. The analysis compares the projected normal water supply and customer demands from 2010 to 2025, in 5-year increments.

The projected water supply is estimated to increase by 6.4 percent between the years 2005 and 2025. The projected available normal water supply and comparison to 2005 requirements is presented in Table 8-1.

Table 8-1. (DWR Table 40) Projected Normal Water Supply – AFY

(from table 4)	2010	2015	2020	2025
Supply	6,042	6,102	6,262	6,322
Share of Year 2005 Demands	101.7%	102.7%	105.4%	106.4%

The projected normal demand and comparison to 2005 demand requirements is presented in Table 8-2.

Table 8-2. (DWR Table 41) Projected Normal Water Demand – AFY

(from table 15)	2010	2015	2020	2025
Demand	6,042	6,102	6,262	6,322
Share of Year 2005 Demands	101.7%	102.7%	105.4%	106.4%

The comparison of projected water supply and demand is presented in Table 8-3.

Table 8-3 (DWR Table 42) Projected Supply and Demand Comparison – AFY

	2010	2015	2020	2025
Supply totals	6,042	6,102	6,262	6,322
Demand totals	6,042	6,102	6,262	6,322
Difference	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%

8.2 Dry Year Water Supply vs. Demand Comparison

Tables 8-4 through 8-6 provide a comparison of a single dry year water supply with projected total water use over the next 25 years, in five-year increments. With nearly 100 percent of the PRWA supply originating from deep wells, there is no reduction in supplies during single or multiple dry years.

Table 8-4. (DWR Table 43) Projected Single Dry Year Water Supply – AFY

	2010	2015	2020	2025
Local Supply	5,579	5,579	5,579	5,579
Imported Supply	463	523	683	743
Supply Totals	6,042	6,102	6,262	6,322
% of projected normal	100%	100%	100%	100%

Table 8-5. (DWR Table 44) Projected Single Dry Year Water Demand – AFY

	2010	2015	2020	2025
Demand	6,042	6,102	6,262	6,322
% of projected normal	100%	100%	100%	100%

Table 8-6. (DWR Table 45) Projected Single Dry Year Supply and Demand Comparison – AFY

	2010	2015	2020	2025
Supply totals	6,042	6,102	6,262	6,322
Demand totals	6,042	6,102	6,262	6,322
Difference	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%

Tables 8-7 through 8-21 compare the total water supply available in multiple dry water years with projected total water use over the next 20 years, in one-year increments.

Table 8-7. (DWR Table 46) Projected Supply During Multiple Dry Year Period Ending in 2010 – AFY

Supply	**2008**	**2009**	**2010**
Normal			
Local Supply	5,579	5,579	5,579
Imported Supply	463	463	463
Supply Totals	**6,042**	**6,042**	**6,042**
Multiple Dry Year			
Local Supply	5,579	5,579	5,579
Imported Supply	463	463	463
Supply Totals	**6,042**	**6,042**	**6,042**
% of projected normal	100%	100%	100%

The imported water listed in Table 8-7 is currently being purchased from the City of Whittier and other agencies as one-time groundwater allotment leases.

Table 8-8. (DWR Table 47) Projected Demand Multiple Dry Year Period Ending in 2010 – AFY

Demand	**2008**	**2009**	**2010**
Normal	6,042	6,042	6,042
Multiple Dry Year	6,042	6,042	6,042
% of projected normal	100%	100%	100%

Table 8-9. (DWR Table 48) Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2010 – AFY

	2008	2009	2010
Supply totals	6,042	6,042	6,042
Demand totals	6,042	6,042	6,042
Difference	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%

Table 8-10. (DWR Table 49) Projected Supply During Multiple Dry Year Period Ending in 2015 – AFY

Supply	**2013**	**2014**	**2015**
Normal			
Local Supply	5,579	5,579	5,579
Imported Supply	523	523	523
Supply Totals	**6,102**	**6,102**	**6,102**
Multiple Dry Year			
Local Supply	5,579	5,579	5,579
Imported Supply	523	523	523
Supply Totals	**6,102**	**6,102**	**6,102**
% of projected normal	100%	100%	100%

Table 8-11. (DWR Table 50) Projected Demand Multiple Dry Year Period Ending in 2015 – AFY

Demand	**2013**	**2014**	**2015**
Normal	6,102	6,102	6,102
Multiple Dry Year	6,102	6,102	6,102
% of projected normal	100%	100%	100%

Table 8-12. (DWR Table 51) Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2015 – AFY

	2013	2014	2015
Supply totals	6,102	6,102	6,102
Demand totals	6,102	6,102	6,102
Difference	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%

Table 8-13. (DWR Table 52) Projected Supply During Multiple Dry Year Period Ending in 2020 – AFY

Supply	**2018**	**2019**	**2020**
Normal			
Local Supply	5,579	5,579	5,579
Imported Supply	683	683	683
Supply Totals	**6,262**	**6,262**	**6,262**
Multiple Dry Year			
Local Supply	5,579	5,579	5,579
Imported Supply	683	683	683
Supply Totals	**6,262**	**6,262**	**6,262**
% of projected normal	100%	100%	100%

Table 8-14. (DWR Table 53) Projected Demand Multiple Dry Year Period Ending in 2020 – AFY

Demand	**2018**	**2019**	**2020**
Normal	6,262	6,262	6,262
Multiple Dry Year	6,262	6,262	6,262
% of projected normal	100%	100%	100%

Table 8-15. (DWR Table 54) Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2020 – AFY

	2018	2019	2020
Supply totals	6,262	6,262	6,262
Demand totals	6,262	6,262	6,262
Difference	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%

Table 8-16. (DWR Table 55) Projected Supply During Multiple Dry Year Period Ending in 2025 – AF Year

Supply	**2023**	**2024**	**2025**
Normal			
Local Supply	5,579	5,579	5,579
Imported Supply	743	743	743
Supply Totals	**6,322**	**6,322**	**6,322**
Multiple Dry Year			
Local Supply	5,579	5,579	5,579
Imported Supply	743	743	743
Supply Totals	**6,322**	**6,322**	**6,322**
% of projected normal	100%	100%	100%

Table 8-17. (DWR Table 56) Projected Multiple Dry Year Period Ending in 2025 – AF Year

Demand	**2023**	**2024**	**2025**
Normal	6,322	6,322	6,322
Multiple Dry Year	6,322	6,322	6,322
% of projected normal	100%	100%	100%

Table 8-18. (DWR Table 57) Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2025 – AF Year

Supply	2023	2024	2025
Supply Totals	6,322	6,322	6,322
Demand Totals	6,322	6,322	6,322
Difference	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%

Table 8-19. (DWR Table 58) Projected Supply During Multiple Dry Year Period Ending in 2030 – AF Year

Supply	2028	2029	2030
Normal			
Local Supply	N/A	N/A	N/A
Imported Supply	N/A	N/A	N/A
Supply Totals	N/A	N/A	N/A
Multiple Dry Year			
Local Supply	N/A	N/A	N/A
Imported Supply	N/A	N/A	N/A
Supply Totals	N/A	N/A	N/A
% of projected normal	N/A	N/A	N/A

NA: Not Available

Table 8-20. (DWR Table 59) Projected Demand During Multiple Dry Year Period Ending in 2030 – AF Year

Demand	2028	2029	2030
Normal	N/A	N/A	N/A
Multiple Dry Year	N/A	N/A	N/A
% of projected normal	N/A	N/A	N/A

NA: Not Available

Table 8-21. (DWR Table 60) Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2030 – AF Year

Supply	2028	2029	2030
Supply Totals	N/A	N/A	N/A
Demand Totals	N/A	N/A	N/A
Difference	N/A	N/A	N/A
Difference as % of Supply	N/A	N/A	N/A
Difference as % of Demand	N/A	N/A	N/A

NA: Not Available

APPENDIX A

URBAN WATER MANAGEMENT PLAN PUBLIC HEARING

WHITTIER DAILY NEWS

affiliated with
SGV Newspaper Group
7612 Greenleaf Avenue
Whittier, CA 90602

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA

County of Los Angeles

I am a citizen of the United States, and a resident of the county aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of WHITTIER DAILY-NEWS, a newspaper of general circulation which has been adjudicated as a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, on the date of October 10, 1960, Case Number 369393. The notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

8/21,28/06

I declare under penalty of perjury that the foregoing is true and correct.

Executed at West Covina, LA Co. California
this 28 day of AUGUST, 20 06

signature

12

CITY OF PICO RIVERA
NOTICE OF PUBLIC HEARING
URBAN WATER MANAGEMENT PLAN
2005 UPDATE

NOTICE IS HEREBY GIVEN that on September 19, 2006, at 6:00 p.m., a public hearing will be held during a joint meeting of the City Council and the Water Authority of the City of Pico Rivera, in the City Hall Council Chambers, located at 6615 Passons Boulevard, Pico Rivera, CA 90660, to consider the adoption of the 2005 Update of the Urban Water Management Plan pursuant to the California Water Code Section 10610 et seq. Said update contains the following elements:

A. An estimate of past, current, and projected water use, grouped in residential, industrial, commercial, and government categories.
B. Identification of conservation measures currently being practiced.
C. Description of alternative conservation measures that may be undertaken, including consumer education, metering, water saving fixtures and appliances, lawn and garden irrigation techniques, and low water use landscaping, which would improve the efficiency of water use; and an evaluation of the cost of these measures and their environmental and other significant impacts.
D. A schedule of implementation for actions indicated by the plan.
E. An Urban Water Shortage Contingency Plan.

The California Environmental Quality Act (CEQA) does not apply to the preparation and adoption of said plan.

PERSONS INTERESTED IN THIS MATTER are invited to attend this hearing to express their opinion on the above matter. The Plan may be reviewed at City Hall in the Public Works Department.

Evelyn Izaguirre
Deputy City Clerk

Hearing: September 18, 2006, 6:00 p.m.
****

In compliance with the Americans with Disabilities Act of 1990, the City of Pico Rivera is committed to providing reasonable accommodations for a person with a disability. Please contact the City Clerk's office at (562) 801-4389 of special program accommodations that are necessary and/or if program information is needed in an alternative format. Special request must be made in a reasonable amount of time in order that accommodations can be arranged.

APPENDIX B

URBAN WATER MANAGEMENT PLAN RESOLUTION

Public Works

FILE COPY

RESOLUTION NO. 06-13

A RESOLUTION OF THE PICO RIVERA WATER AUTHORITY COMMISSION, PURSUANT TO WATER CODE SECTION 10160 ET SEQ, ADOPTING THE 2005 UPDATE TO THE URBAN WATER MANAGEMENT PLAN

THE PICO RIVERA WATER AUTHORITY COMMISSION DOES RESOLVE AS FOLLOWS:

WHEREAS, In 1985, Assembly Bill 797 required preparation of an Urban Water Management Plan (UWMP) for water utilities, with subsequent updates in five-year cycles; and

WHEREAS, on September 20, 2005, the Commission approved an agreement with Brown & Caldwell for preparation of the 2005 Urban Water Management Plan update; and

WHEREAS, on September 19, 2006, a public hearing, after proper public notice, was conducted by the Commission regarding said update;

NOW THEREFORE, THE COMMISSION THE PICO RIVERA WATER AUTHORITY, DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. Adopt the 2005 update to the Pico Rivera Water Authority's Urban Water Management Plan.

Section 2. This Resolution shall become effective September 19, 2006.

Section 3. The Secretary shall certify to the adoption of this Resolution and hereafter the same shall be in full force and effect.

ADOPTED AND APPROVED this 19th day of September, 2006.

E. A. "Pete" Ramirez, President

ATTEST:

Evelyn Izaguirre, Deputy Secretary

APPROVED AS TO FORM:

James M. Casso, Authority Attorney

AYES: Armenta, Beilke, Garcia, Salcido, Ramirez
NOES: None
ABSENT: None
ABSTAIN: None

APPENDIX C

CALIFORNIA'S GROUNDWATER BULLETIN 118

Coastal Plain of Los Angeles Groundwater Basin, Central Subbasin

- Groundwater Basin Number: 4-11.04
- County: Los Angeles
- Surface Area: 177,000 acres (277 square miles)

Basin Boundaries and Hydrology

The Central Subbasin occupies a large portion of the southeastern part of the Coastal Plain of Los Angeles Groundwater Basin. This subbasin is commonly referred to as the "Central Basin" and is bounded on the north by a surface divide called the La Brea high, and on the northeast and east by emergent less permeable Tertiary rocks of the Elysian, Repetto, Merced and Puente Hills. The southeast boundary between Central Basin and Orange County Groundwater Basin roughly follows Coyote Creek, which is a regional drainage province boundary. The southwest boundary is formed by the Newport Inglewood fault system and the associated folded rocks of the Newport Inglewood uplift. The Los Angeles and San Gabriel Rivers drain inland basins and pass across the surface of the Central Basin on their way to the Pacific Ocean. Average precipitation throughout the subbasin ranges from 11 to 13 inches with an average of around 12 inches.

Hydrogeologic Information

Water Bearing Formations

Throughout the Central Basin, groundwater occurs in Holocene and Pleistocene age sediments at relatively shallow depths. The Central Basin is historically divided into forebay and pressure areas. The Los Angeles forebay is located in the northern part of the Central Basin where the Los Angeles River enters the Central Basin through the Los Angeles Narrows from the San Fernando Groundwater Basin. The Montebello forebay extends southward from the Whittier Narrows where the San Gabriel River encounters the Central Basin and is the most important area of recharge in the subbasin. Both forebays have unconfined groundwater conditions and relatively interconnected aquifers that extend up to 1,600 feet deep to provide recharge to the aquifer system of this subbasin (DWR 1961). The Whittier area extends from the Puente Hills south and southwest to the axis of the Santa Fe Springs-Coyote Hills uplift and contains up to 1,000 feet of freshwater-bearing sediments. The Central Basin pressure area is the largest of the four divisions, and contains many aquifers of permeable sands and gravels separated by semi-permeable to impermeable sandy clay to clay, that extend to about 2,200 feet below the surface (DWR 1961). The estimated average specific yield of these sediments is around 18 percent. Throughout much of the subbasin, the aquifers are confined, but areas with semi-permeable aquicludes allow some interaction between the aquifers (DWR 1961).

The main productive freshwater-bearing sediments are contained within Holocene alluvium and the Pleistocene Lakewood and San Pedro Formations (DWR 1961). Throughout most of the subbasin, the near surface Bellflower aquiclude restricts vertical percolation into the Holocene age Gaspur aquifer and other underlying aquifers, and creates local semi-perched groundwater

conditions. The main additional productive aquifers in the subbasin are the Gardena and Gage aquifers within the Lakewood Formation and the Silverado, Lynwood and Sunnyside aquifers within the San Pedro Formation (DWR 1961). Specific yield of deposits in this subbasin range up to 23 percent in the Montebello forebay, 29 percent in the Los Angeles forebay, and 37 percent in the Central Basin pressure area (DWR 1961). Historically, groundwater flow in the Central Basin has been from recharge areas in the northeast part of the subbasin, toward the Pacific Ocean on the southwest. However, pumping has lowered the water level in the Central Basin and water levels in some aquifers are about equal on both sides of the Newport-Inglewood uplift, decreasing subsurface outflow to the West Coast Subbasin (DWR 1961).

There are several principal aquifers/aquicludes present in this subbasin.

Aquifers/ Aquiclude	Age	Formation	Lithology	Maximum Thickness (feet)
Gaspur	Holocene		Coarse sand, gravel	120
Semiperched	Holocene		Sand, gravel	60
Bellflower	Pleistocene	Lakewood Formation	Clay, sandy clay	140
Gardena	Pleistocene	Lakewood Formation	Sand, gravel	160
Gage			Sand	120
Silverado	Lower Pleistocene	San Pedro Formation	Sandy gravel	300
Lynwood			Coarse sand and gravel	150
Sunnyside				350

Restrictive Structures

Many faults, folds and uplifted basement areas affect the water-bearing rocks in the Central Basin. Most of these structures form minor restrictions to groundwater flow in the subbasin. The strongest effect on groundwater occurs along the southwest boundary to the Central Subbasin. The faults and folds of the Newport – Inglewood uplift are partial barriers to movement of groundwater from the Central Basin to the West Coast Basin (DWR 1961). The La Brea high is a system of folded, uplifted and eroded Tertiary basement rocks. Because the San Pedro Formation is eroded from this area, subsurface flow southward from the Hollywood Basin is restricted to the Lakewood formation (DWR 1961). The Whittier Narrows is an eroded gap through the Merced and Puente Hills that provides both surface and subsurface inflow to the Central Basin (DWR 1961). The Rio Hondo, Pico, and Cemetery faults are northeast-trending faults that project into the gap and displace aquifers. The trend of these faults parallels the local groundwater flow and do not act as significant barriers to groundwater flow (DWR 1961).

Recharge Areas

Groundwater enters the Central Basin through surface and subsurface flow and by direct percolation of precipitation, stream flow, and applied water; and replenishes the aquifers dominantly in the forebay areas where permeable sediments are exposed at ground surface (DWR 1961). Natural replenishment of the subbasin's groundwater supply is largely from surface inflow through Whittier Narrows (and some underflow) from the San Gabriel Valley. Percolation into the Los Angeles Forebay Area is restricted due to paving and development of the surface of the forebay. Imported water purchased from Metropolitan Water District and recycled water from Whittier and San Jose Treatment Plants are used for artificial recharge in the Montebello Forebay at the Rio Hondo and San Gabriel River spreading grounds (DWR 1999). Saltwater intrusion is a problem in areas where recent or active river systems have eroded through the Newport Inglewood uplift. A mound of water to form a barrier is formed by injection of water in wells along the Alamitos Gap (DWR 1999).

Groundwater Level Trends

Water levels varied over a range of about 25 feet between 1961 and 1977 and have varied through a range of about 5 to 10 feet since 1996. Most water wells show levels in 1999 that are in the upper portion of their recent historical range.

Groundwater Storage

Groundwater Storage Capacity. Total storage capacity of the Central Basin is 13,800,000 (DWR 1961).

Groundwater in Storage.

Groundwater Budget (Type A)

A complete water budget could not be constructed due to the lack of data available. Recharge to the subbasin is accomplished through both natural and artificial recharge. The Watermaster reported natural recharge for the subbasin to be 31,950 af and artificial recharge to be 63,688 af for 1998 (DWR 1999). Additionally, the subbasin receives 27,000 af/yr of water through the Whittier Narrows from the San Gabriel Valley Basin in the form of subsurface flow (SWRB 1952). Urban extractions for the subbasin were 204,335 af in 1998 (DWR 1999).

Groundwater Quality

Characterization. TDS content in the subbasin ranges from 200 to 2,500 mg/l according to data from 293 public supply wells. The average for these 293 wells is 453 mg/l.

I

Impairments.

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	316	15
Radiological	315	1
Nitrates	315	2
Pesticides	322	0
VOCs and SVOCs	344	43
Inorganics – Secondary	316	113

[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	
	Total depths (ft)
Domestic	
Municipal/Irrigation	

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
USGS	Groundwater levels	90
DWR	Groundwater levels	87
Los Angeles County Public Works	Groundwater levels	212 / Bi-monthly
USGS	Miscellaneous water quality	64
Department of Health Services and cooperators	Title 22 water quality	294

Basin Management

Groundwater management:	Central Basin was adjudicated in 1965, and the Department of Water Resources was appointed Watermaster. Every month extractions are reported to the Watermaster by each individual pumper. This allows the Watermaster to regulate the water rights of the subbasin. (DWR 1999)
Water agencies	
Public	City of Bellflower, Bellflower-Somerset MWC, City of Compton, City of Huntington Park, City of Long Beach, City of Los Angeles DWP, City of Montebello, City of Paramount, City of Pico Rivera, City of Santa Fe Springs, Sativa LA County WD, City of Signal Hill, South Montebello ID, City of South Gate, City of Vernon, City of Whittier. (DWR 1999)
Private	California-American Water Company, Montebello Land and Water Company, Bellflower Home Garden Water Co., California Water Service, Lynwood Park MWC, Maywood MWC, Park Water Company, Pearless Water Company, San Gabriel Valley Water Company, Southern California Water Company, Tract No. 180 Water Company, Tract 349 MWC, Western Water Company.(DWR 1999)

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____. 2000. *Engineering Survey and Report.*

Errata

Changes made to the basin description will be noted here.

APPENDIX D

WATER SHORTAGE CONTINGENCY PLAN;
RESOLUTION NO. 3945;
ORDINANCE NOS. 826 & 827

WATER SHORTAGE CONTINGENCY PLAN

CITY OF PICO RIVERA

ADOPTED DECEMBER 21st, 1992
BY RESOLUTION NO. 3945

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SECTION 1 COORDINATED PLANNING

California Water Code Section 10620. (d) (2) Each urban water supplier shall coordinate the preparation of its urban water shortage contingency plan with other urban water suppliers and public agencies in the area, to the extent possible.

The City of Pico Rivera Water Division provides water service to approximately 3,749 acres or nearly 70% of the total City area. The remainder is served by the Pico Water District and the San Gabriel Valley Water Company, which serves the Campground and the Sports Arena.

SOURCES OF SUPPLY

The City system is supplied by eight wells with a combined capacity of 14.8 million gallons per Day (45.4 A.F./Day).

All of the wells pump from the Central Basin. Ground water from the Central Basin is adjudicated, and managed by a Water Master. The total allowable extraction from the Central Basin is approximately 236,006 acre-feet (A.F.). Of this amount, 194,400 AF, or about 82.37% is pumped.

TABLE 1 - Groundwater 1989-92

YEAR	GROUNDWATER	
1981/82	5,347 AF	100%
1982/83	5,246 AF	100%
1983/84	5,923 AF	100%
1984/85	6,094 AF	100%
1985/86	6,270 AF	100%
1986/87	6,443 AF	100%
1987/88	6,423 AF	100%
1988/89	6,518 AF	100%
1989/90	6,353 AF	100%
1990/91	5,902 AF	100%
1991/92	5,710 AF	100%

Water from the Central Basin within the City limits is shared in common with other urban and agricultural interests in the area. The development of this Water Shortage Contingency Plan was coordinated with all involved parties:

> The City of Pico Rivera, the Central Basin Municipal Water District; Central and West Basin Water Replenishment District, the Pico Water District, the Water Master and parties to the adjudication; Governmental agencies, including the County & City Health departments, County and City Planning & Building Departments, and the County Office of Emergency Services.

THE CITY OF PICO RIVERA WATER DIVISION

Pico Rivera's allowable pumping allocation totals 5,579 Acre Feet. This amount is an accumulation of the following rights acquired by the City.

SOURCE	QUANTITY (Acre Feet)
Successor to Klug, J W Development Co., Inc.	42.00
Successor to Kruse, Walter G. & Mrs. Walter G. Kruse	9.00
Successor to Union Packing Co.	80.00
Successor to Walnut Irrigation District	123.00
Successor in Part to Park Water Company	2,300.00
Successor in Part to Rockview Dairies, Inc.	25.00
Successor in Part to San Gabriel Valley Water Co.	3,000.00
TOTAL	**5,579.00**

To augment this quantity, the City leases water rights from various sources. In 1991/92, a total of 263 AF were leased.

The agencies which provide water within the City have not met to develop formal mutual aid agreements that address the distribution and redistribution of water during shortages or disasters. Interconnections which could be used in emergencies exist between the City and San Gabriel Valley Water Company. The City and the Pico Water District have mutually agreed to an interconnection of their mains. Although not completed, the interconnection could allow the transfer of water between the two agencies under certain pressure conditions.

DISASTER PLANNING

The City of Pico Rivera has in place a Master Disaster Plan that coordinates overall City response to a disaster. In addition, this Master Plan coordinates emergency responses with other agencies in the area.

The City of Pico Rivera inspects its facilities annually for earthquake safety. Auxiliary generators and improvements to the City's water storage facilities to prevent loss of these facilities during an earthquake are part of the annual construction process.

Water shortage disaster response will be coordinated with the County Office of Emergency Services. The City will acquire standby generators, water purification supplies, emergency drinking water storage, and water trucks as part of its plan. Water storage, treatment and pumping facilities are inspected for earthquake safety annually.

CITY OF PICO RIVERA WATER COORDINATION

The City of Pico Rivera coordinates its activities with other water purveyors through the area. The City is a member of the Southeast Water Coalition which shares information and ideas regarding protection of the central groundwater basin resource.

The City Council has established a Water Committee consisting of two City Council Members and staff advisors from City Departments including Public Works, Finance, and the City Manager's Office. The Water Committee meets to coordinate planning efforts, education and public information, and other water management activities, and to consider adoption of compatible rationing period landscape restrictions and identical "no-waste" ordinances. The Committee has met and reviewed this Water Shortage Contingency Plan, and will meet as required during normal supply periods. During Stage 1, 2, or 3 water shortages, the Committee will meet monthly. In a Stage 4 or a disaster level shortage, the Committee will meet more often if necessary.

The Water Department monitors new building permit issuance, so that accurate and current customer water demand projections can be maintained. During any declared Water Shortage Emergency, the Building Department will process applications for building permits, but will not issue the actual permits until the Emergency declaration is rescinded. See Appendix III.

The City Planning Commission has been advised of the short and long term water supply outlook in the area. Development guidelines to require a determination of water supply and sewer capacity impacts were recently adopted.

PUBLIC MEETINGS

A public hearing will be held on the development of this Water Shortage Contingency Plan. The City Staff proposed an allotment method for each customer type. The final version of this Water Shortage Contingency Plan was reviewed and adopted by the Pico Rivera City Council at its meeting on December 21, 1992.

SECTION 2 PAST, CURRENT AND PROJECTED WATER USE (1991-94)

California Water Code Section 10631. (e) (1) Past, current and projected water use and, to the extent records are available, a breakdown of those uses on the basis of residential single family, residential multifamily, industrial, commercial, governmental, and agricultural use.

The City has about 60,000 residents. Of this total, the City serves approximately 61%. The remainder is served by Pico Water District. Residential customer consumes nearly 63% of the City Water supply. Commercial and industrial sector utilizes approximately 34% of the City's normal deliveries. Schools and parks account for approximately 3%.

Highest recorded water demand 6,879 AFY. Since 1988, water demand has been decreasing at the rate of approximately 320 AFY. Total annual demand is estimated to be 6,200 AFY in 1999. Unaccounted-for water averages less than five percent and is apportioned to all account types. Residential connections average 4.4 residents with 90 gallons per person per day use (gpcd).

TABLE 2 Customer Types, Normal Demand and Demand Including Growth

Customer Type	Connections	Highest Use (AF)	91 (AF)	92 (AF)	Proj. '93 (AF)	Proj. '94 (AF)
Residential-Estate, Single, Duplex, PUD	8,339	3,982	3,699	3,597	3,480	3,367
Industrial/ Commercial	637	2,175	2,020	1,941	1,878	1,817
Schools	12	114	106	97	94	91
Golf Course, Parks	13	83	77	75	74	69
TOTAL	**9,000**	**6,353**	**5,902**	**5,710**	**5,526**	**5,344**

SINGLE FAMILY and MULTIFAMILY connections are projected to increase one quarter percent a year.

COMMERCIAL, INDUSTRIAL, and GOVERNMENTAL demand is projected to increase between 1/2 and one percent per year.

RECREATIONAL demand is expected to remain constant. A reclaimed water system that will provide irrigation purposes non-potable existing parks, golf courses is under design for irrigation purposes.

SECTION 3 WORST CASE WATER SUPPLY AVAILABILITY FOR 12, 24 & 36 MONTHS

California Water Code Section 10631. (e) (2) An estimate of the minimum water supply available at the end of 12, 24 and 36 months, assuming the worst case water supply shortages.

The City of Pico Rivera has the water sources listed below. Average water supply by source and projected worst case supply by source are provided in Table 2.

TABLE 3 Supply Sources and Worst Case Supply Projections

Source	89/90	90/91	91/92	W.C. 92/93	W.C. 93/94	W.C. 94/95
Groundwater	6,353	5,902	5,710	5,710	5,260	5,040
Recycled Water	-----	0	0	0	400	800
TOTAL	**6,353**	**5,902**	**5,710**	**5,750**	**5,660**	**5,840**
% supply shortage					11%	8%

Because the projected 1993 and 1994 worst case shortages could have serious economic impacts on the community, the City has established a policy to purchase additional water to limit the water shortage to no more than 50 percent.

GROUND WATER from the Central Basin provides medium quality water to the City at a treated cost of $100 an acre foot. The Central Water basin has an adjudicated safe yield of 217,367 AFY. Of this amount the City of Pico Rivera may pump 5,579 AFY. The Basin was adjudicated because the static water level is only twenty feet above sea level and the basin would be rendered unusable by significant saline intrusion. There is no evidence of groundwater contamination from either industrial or agricultural contaminants. Due to geological features, it is unlikely that contamination from these sources will become a problem.

The Rio Hondo water reclamation program, a recycled water system is currently under construction in the Central Basin. Construction of the system is expected to commence in 1993. When completed, it will provide approximately 1,200 AFY to the customers within the City's service area who are currently using potable water for landscaping and agricultural purposes.

WATER QUALITY AND EMERGENCY SUPPLIES

The City's water sources are all of medium to good quality, and no problems resulting from industrial or agricultural contamination are foreseen. Extended multi-week supply shortages due to natural disasters or accidents which damage local surface sources are unlikely, but would be severe until the groundwater supply buffer is established. Studies have determined that even after a severe earthquake, groundwater wells could probably be back in production within five days.

The City's one million gallon (MG) capacity storage reservoirs hold treated water to provide 45 gallons per capita per day (GPCD) for all City customers for 12 hours.

SECTION 4 STAGES OF ACTION

California Water Code Section 10631. (e) (3) 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.

The City of Pico Rivera has developed a four-stage conservation and water rationing plan. The City's plan includes voluntary and mandatory stages.

TABLE 4 Rationing Stages and Reduction Goals

Shortage*	Stage	Demand Reduction Goal	Type Program
up to 10%	Stage 1	10% reduction	Voluntary
10-25%	Stage 2	20% reduction	Mandatory
25-35%	Stage 3	35% reduction	Mandatory
35-50%+	Stage 4	50%+ reduction	Mandatory

ACTIONS TO BE UNDERTAKEN BY CITY OF PICO RIVERA

STAGE 1

- City of Pico Rivera maintains an ongoing public information campaign consisting of distribution of literature, speaking engagements, bill inserts, and conservation messages printed in local newspapers.

- Educational programs in area schools are also ongoing.

* As notified/determined/declared by the Central Basin Watermaster

STAGE 2

- City of Pico Rivera will aggressively continue its public information and education programs.
- Seek implementation of 10 to 20% water use reductions either by voluntary or mandatory means.
- Support passage of drought ordinances.

STAGE 3

- Implement mandatory reductions.
- Institute rationing program through fixed allotments based on percentage cutbacks.
- Implement rate changes to penalize excess usage.
- Maintain rigorous public information campaign explaining water shortage conditions.
- Institute water use restrictions such as restrictions on daytime hours for watering, excessive water resulting in gutter flooding, using hose without shutoff devise, non-recycling fountains, washing down sidewalks or patios, unrepaired leaks, etc..
- Monitor production weekly for compliance with necessary reductions.
- Installation of flow restrictor if customer consistently exceeds allotment.

STAGE 4

- All of steps taken in prior stages intensified.
- Monitor production daily for compliance with necessary reductions.

PRIORITIES for use of available water are based on California Water Code Chapter 3 (see Appendix IV) and community input, are:

- HEALTH & SAFETY - interior residential and fire fighting
- COMMERCIAL, INDUSTRIAL & GOVERNMENTAL - maintain jobs & economic
- EXISTING LANDSCAPING - especially trees and shrubs
- NEW DEMAND - projects without permits when shortage declared

HEALTH & SAFETY water quantity calculations used to determine the interior gpcd requirements are provided below. The Stage 2 and Stage 3 health & safety allotments are 68 gpcd (33 HCF per person per year, equaling 5,800 AFY). The Stage 4 health & safety allotment is reduced to 50 gpcd (24 HCF per person per year). The total annual amount of water required to meet these health & safety needs was calculated by multiplying the appropriate gpcd times 36,400 customers.

TABLE 5 Per capita Health & Safety Water Quantity Calculations

	Non-cons. fixtures		Habit Changes1		Cons. fixtures2	
Toilets	5 fls x 5.5 gpf=	27.5	3 fls x 5.5 gpf=	16.5	5 fls x 1.5 gpf=	7.5
Shower	5 min x 4.0 gpm=	20.0	4 min x 3.0 gpm=	12.0	5 min x 2.0 gpm=	10.0
Washer	12.5 gpcd (1/3 load)=	12.5	11.5 gpcd (1/3 load)=	11.5	11.5 gpcd (1/3 load)=	11.5
Kitchen	4 gpcd=	4.0	4 gpcd=	4.0	4 gpcd=	4.0
Other	4 gpcd=	4.0	4 gpcd=	4.0	4 gpcd=	4.0
TOTAL (gpcd)		68.0		48.0		37.0
HCF per capita per year		33 HCF		23 HCF		18 HCF

1 Reduced shower use results from shorter showers or reduced flow. Reduced washer use results from fuller loads.

2 Fixtures include ULF 1.6 gpf toilets, 2.0 gpm showerheads and efficient clothes washers.

The Health & Safety minimum allotment was set at 68 gpcd in Stages 2 & 3 because it provides sufficient water for essential interior use with no habit or plumbing fixture changes. If individuals wish to change water use habits or plumbing fixtures, 68 gpcd is sufficient to provide for limited non-essential uses. In Stage 4, the health & safety allotment might require habit changes.

Based on the customer demand information in Table 1, Table 6 indicates the water allocated to each customer type by priority and rationing stage.

TABLE 6 Water Supply Allocated by Priority

Stage 1					
Priority	**Residential**	**Comm/Ind.**	**Schools**	**Parks/Golf Course**	**TOTAL**
Average use	**3,699 AF**	**2,020 AF**	**106 AF**	**77 AF**	**5,902 AF**
Requested use	3,329	1,818	95	62	5,304
% reduction	10%	10%	10%	20%	10%
Stage 2					
Priority	**Residential**	**Comm/Ind.**	**Schools**	**Parks/Golf Course**	**TOTAL**
Average use	**3,699 AF**	**2,020 AF**	**106 AF**	**77 AF**	**5,902 AF**
Health (68 gpcd)	2,770	100	0	0	2,870
Commercial	0	1,513	0	0	1,513
Landscape	189	0	85	390	324
New Connections	0	0	0	0	0
TOTAL (AF)	**2,959**	**1,613**	**85**	**50**	**4,707**
% reduction	20%	20%	20%	35%	20%

Stage 3					
Priority	**Residential**	**Comm/Ind.**	**Schools**	**Parks/Golf Course**	**TOTAL**
Average use	**3,699 AF**	**2,020 AF**	**106**	**77 AF**	**5,902 AF**
Health (68 gpcd)	2,770	100	0	0	2,870
Commercial	0	1,467	0	0	1,467
Landscape	0	0	85	70	105
New Connections	0	0	0	0	0
TOTAL (AF)	**2,770**	**1,567**	**85**	**20**	**4,442**
% reduction	25%	22%	20%	74%	25%
Stage 4 - 50 gpcd					
Priority	**Residential**	**Comm/Ind.**	**Schools**	**Parks/Golf Course**	**TOTAL**
Average use	**3,699 AF**	**2,020 AF**	**106 AF**	**77 AF**	**5,902 AF**
Health (50 gpcd)	2,037	100	0	0	2,137
Commercial	0	1,313	0	0	1,313
Landscape	0	0	67	0	67
New Connections	0	0	0	0	0
TOTAL (AF)	**2,037**	**1,413**	**67**	**0**	**3,517**
% reduction	45%	35%	37%	%	40%

SUPPLY SHORTAGE TRIGGERING LEVELS

The City of Pico Rivera has a legal responsibility to provide for the health and safety water needs of its customers (see Appendix IV). To minimize the social and economic impact of water shortages, the City will manage water supplies prudently. This Plan is designed to provide a minimum of 50 percent of normal supply during a severe or extended water shortage. The following rationing program triggering levels are established to ensure that these policy statements are implemented.

The City's sole water source is groundwater. Rationing stages will be triggered by a shortage in this source. Because Stages overlap, triggers automatically implement the more restrictive Stage, unless the City Council votes to implement the less restrictive Stage. Shortages may trigger a Stage at any time.

The specific criteria for triggering the City's rationing stages are listed in Table 6.

TABLE 7 - Water Supply Triggering Levels (Normal Supply 5,902 AFY)

Stage	%Shortage	Wtr. Shortage	Carry-Over Shortage
Stage 1	Up to 10% supply reduction	Combined supply reductions totalling up to 598 AFY	OR Insufficient carryover storage to provide 90% of normal supplies for the next 2 years
Stage 2	Up to 20% supply reduction	Combined supply reduction totalling up to 1,115 AFY	OR Insufficient carryover storage to provide 80% of normal supplies for the next 2 years
Stage 3	Up to 25% supply reduction	Combined supply reductions totalling between 3,500 and 1,460 AFY	OR Insufficient carryover storage to provide 75% of normal supplies for the next 2 years
Stage 4	Up to 40 percent supply reduction	Combined supply reductions totalling 2,385 AFY or more	

SECTION 5 MANDATORY PROHIBITIONS ON WATER USE

California Water Code Section 10631. (e) (4) Mandatory provisions to reduce water use which include prohibitions against specific wasteful practices, such as gutter flooding.

The City adopted a voluntary water conservation Ordinance in September, 1988, please see Appendix II.

In addition to the recommended conservation methods listed in the No-Waste Ordinance which defines prohibited uses of water at any time, regardless of the current water supply situation, the following reasonable uses of water are established:

1. Installing landscaping that is native to the Pico Rivera climate.
2. Not allowing water to leave the user's property when irrigating landscape.
3. Irrigating during the morning and evening hours to avoid evaporation loss.
4. Repairing all leaks.
5. Using a broom or other means other than water for cleaning hardscape.
6. Using reclaimed water where and when available.

* On November 2, 1992, by Ordinance No. 823, the City amended the Municipal Code by adding Chapter 18.45 - Water Efficient Landscape Provisions that require selection of water efficient plants and water efficient irrigation systems which fosters long-term water conservation for City-wide public projects, commercial and industrial projects and multiple residential projects while respecting the economic, environmental, aesthetic and life-style choices of individuals and property owners.

SECTION 6 CONSUMPTION LIMITS

California Water Code Section 10631. (e) (5) Consumption limits in the most restrictive stages. Each urban water supplier may use any type of consumption limit in its water shortage contingency plan that would reduce water use and is appropriate for its area. Examples of consumption limits that may be used include, but are not limited to, percentage reductions in water allotments, per capita allocations, an increasing block rate schedule for high usage of water with incentives for conservations, or restrictions on specific uses.

Allocation for each customer is the percentage of the quantity of water used by such customer during the comparable billing periods of the historical base period. Customer classes may have differing allocations. Percentage reductions may vary seasonally.

Each customer will be notified of their allotment for the succeeding billing period on their monthly or bimonthly bill. Any customer may appeal their allocation on the basis of use or incorrect calculation. Appeals shall be processed on a case by case basis.

The City has established the following allocation method for each customer type.

Single Family	Hybrid of Per-capita and Percentage Reduction
Multifamily	Hybrid of Per-capita and Percentage Reduction
Commercial	Percentage Reduction
Industrial	Percentage Reduction
Parks/Schools	Percentage Reduction
Recreational	Percentage Reduction - vary by efficiency
New Demand	Per-capita

The specific percentage reductions at each stage and for each customer class correspond to the figures listed in Table 6.

The individual customer allotments will be based on a five year base period. This gives the City a more accurate view of the usual water needs of each account and provides additional flexibility in determining allotments and reviewing appeals. However, no allotment may be greater than the amount used in the most recent year of the five year base period.

The Water Department Manager shall classify each customer and calculate each customer's allotment according to the methods described in Appendix V. The allotment shall reflect seasonal patterns. Each customer shall be notified of their classification and allotment by mail before the effective date of the Water Shortage Emergency. New customers and connections will be notified at the time service commences. In a disaster, prior notice of allotment may not be possible; notice will be provided by other means. Any customer may appeal the Water Department Manager's classification on the basis of use or the allotment on the basis of incorrect calculation. Appeals shall be processed as set forth in Appendix V.

SECTION 7 PENALTIES OR CHARGES FOR EXCESSIVE USE

California Water Code Section 10631. (e) (6) Penalties or charges for excessive use.

For all customers, an excess use penalty per HCF of water used in excess of the applicable allocation during each billing period shall be charged. A distinction may be made between residential and non-residential penalties.

City of Pico Rivera, after one written warning, may install a flow-restricting device on the service line of any customer observed by City of Pico Rivera personnel to be using water for any non-essential or unauthorized use defined in Section A of Tariff Rule 14.1. (see Appendix II)

The City of Pico Rivera's current rate structure consists of a fixed monthly rate based on meter size plus a consumption charge based on actual water delivered, plus a power charge based on water delivery and actual costs incurred by City.

TABLE 8 Current normal rate structure

For 3/4" meter, charges are $7.68 flat rate, plus $0.93 per HCF, plus approximately $0.09 per HCF.

Service may be terminated to any customer who knowingly and willfully violates any provision of the Water Shortage Plan. A customer who exceeds the established allotment shall pay a surcharge of four (4) times the per HCF of water for excess water delivered during the first or second billing period and a surcharge of ten (10) times the rate tier per HCF for excess water delivered during the third consecutive excess and subsequent consecutive excess billing periods. As used herein, "excess water" means the amount of water delivered in excess of the account's established allotment during any billing period. If a customer's total annual usage equals or is less than the annual allotment, any surcharge payments shall be refunded to the customer. A similar adjustment shall be made for each successive 12 month period during the term of the rationing program, or a pro-rated amount at the program's termination.

If a customer exceeds the allotted usage for three consecutive billing periods, the City may install a flow restrictor at the service meter which reduces water flow and pressure, as follows: Third consecutive and subsequent consecutive violations - the City may install a flow restricting device of two gallon-per-minute capacity for services up to one and one-half inch size, and comparatively sized restrictors for larger services, for a period of seven days. The customer must pay a flow restrictor installation and removal charge of $100 before the normal service will be restored.

SECTION 8 ANALYSIS OF REVENUE AND EXPENDITURE IMPACTS

California Water Code Section 10631. (e) (7) An analysis of the impacts of the plan 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.

Table 11 shows City of Pico Rivera's revenues and expenditures and the projected fiscal impacts of reduced sales due to shortages.

The City's normal annual income from water sales is $3,608,000, of which the monthly meter charges provide $3,150,000 or 87%. All surplus revenues are currently used to fund the water system capital improvements. Tables 10 and 11 are based on the Table 9 sales ranges.

TABLE 9 - Projected Ranges of Water Sales by Stage

Water Sales	**Normal**	**Stage 2 20%**	**Stage 3 25%**	**Stage 4 40%**
TOTAL (AFY)	5,902	4,707	4,442	3,517

Tables 10 and 11 provide information on projected revenue impacts by Stage.

Table 10 shows the Water Department's Revenues and Expenditures, with no additional water purchase nor rate increase and the projected fiscal impacts of increased costs and reduced sales due to shortages.

TABLE 10 - Revenues & Expenditures (no additional water purchases & no rate increases)

Revenue	Normal	Stage 2 (20%)	Stage 3 (25%)	Stage 4 (40%)
Interest Incom	$85,000	$68,000	$59,500	$42,500
Misc. Revenues	35,000	27,900	26,340	20,850
Metered Sales	3,150,000	2,512,125	2,370,690	1,877,080
Voc. Removal	120,000	95,650	86,380	71,500
Power Charges	200,000	159,500	150,500	119,180
Turn on Charge	12,000	9,570	9,030	7,150
Serv. Conn Fee	3,000	3,000	3,000	3,000
Meter Installation	3,000	3,000	3,000	3,000
TOTAL REVENUE	**$3,608,000**	**$2,878,745**	**$2,708,440**	**$2,144,260**

Expenses	Normal	Stage 2 (20%)	Stage 3 (25%)	Stage 4 (40%)
Salaries	$720,962	$721,000	$721,000	$721,000
Administration	279,324	280,000	280,000	280,000
Production	927,025	739,300	697,679	552,414
Distribution	102,769	102,000	102,000	102,000
Customer Service	30,810	27,000	21,600	15,410
Minor Cap. Imp.	1,000	0	0	0
Water Rent	1,518,138	1,330,000	1,142,000	954,000
TOTAL EXPENSE	**$3,580,028**	**$3,199,300**	**$2,964,279**	**$2,624,824**

	Normal	Stage 2 (20%)	Stage 3 (30%)	Stage 4 (50%)
Surplus or (Deficiency)	$27,927	$320,555	$255,839	$480,564

Table 11 contains predictions of the Water Division Revenues & Expenditures with the following assumptions:

- Sales reduced by 20% at Stage 2, 25% at Stage 3, and 40% at Stage 4.
- A 20.13% consumption rate increase at Stage 2, 26.76% at Stage 3, and 57.54% at Stage 4.
- Increase in Central Basin charges from 100 AF to 125/AF during Stage 2; to $150 during Stage 3; and to $200 during Stage 4.

TABLE 11 - Projected Revenues & Expenditures (additional water costs & rate increases)

Revenues	Normal	Stage 2 (20%)	Stage 3 (25%)	Stage 4 (40%)
Interest Incom	$85,000	$68,000	$59,500	$42,500
Misc. Revenues	35,000	27,000	24,500	17,500
Metered Sales	3,150,000	3,017,816	3,005,077	2,957,152
Voc. Removal	120,000	96,000	84,000	60,000
Power Charges	200,000	160,000	140,000	100,000
Turn on Charge	12,000	9,600	0	0
Serv. Conn Fee	3,000	2,400	0	0
Meter Installation	3,000	2,400	0	0
TOTAL REVENUE	**$3,608,000**	**$3,384,116**	**$3,313,087**	**$3,177,152**

Expenses	Normal	Stage 2 (20%)	Stage 3 (25%)	Stage 4 (40%)
Salaries	$720,962	$721,000	$721,000	$721,000
Administration	279,324	280,000	280,000	280,000
Production	927,025	924,125	1,046,520	1,104,870
Distribution	102,769	102,000	102,000	102,000
Customer Service	30,810	27,000	21,600	15,400
Minor Cap. Imp.	1,000	0	0	0
Water Rent	1,518,138	1,330,000	1,142,000	954,000
TOTAL EXPENSE	**$3,580,028**	**$3,384,125**	**$3,313,120**	**$3,177,230**

	Normal	Stage 2 (20%)	Stage 3 (25%)	Stage 4 (40%)
Surplus or (Deficiency)	$27,927	(-9.00)	(-33.00)	(78)

ESTABLISHMENT OF A RATE STABILIZATION FUND

To mitigate the financial impacts of a water shortage, the City will establish an Emergency Fund. The goal is to maintain the Fund at 75 percent of normal Water Department revenue. This fund will be used to stabilize rates during periods of water shortage or disasters affecting the water supply. The City will not have to increase rates as much or as often during a prolonged or severe shortage.

However, even with the emergency fund, rate increases will be necessary during a prolonged water shortage. As described in Section 4 of this Plan, a Stage 2 shortage requires a 20 percent reduction in water deliveries while a Stage 3 requires a 35 percent reduction. When a Water Shortage Emergency is declared, the supply shortage will trigger the appropriate Rationing Stage and rate increase.

Water rates will be increased by the following percentages when the indicated Stages are implemented:

Stage 1	no rate increase
Stage 2	20.13 percent increase over pre-shortage rates
Stage 3	26.76 percent increase over pre-shortage rates
Stage 4	57.54 percent increase over pre-shortage rates

End of the Water Shortage Emergency 15 percent increase over pre-shortage rates.

In anticipation of reduced sales following a shortage, the City's rates will be set at 115 percent of the pre-shortage rates. After a shortage, Water Division expenses are expected to drop below pre-shortage levels. Water use is projected at 90 percent of the pre-shortage use, so the 115 percent rate should generate sufficient income to equal expenses. Any excess revenues collected as a result of this rate adjustment will be used to re-establish the Emergency Fund.

SECTION 9 - IMPLEMENTATION OF THE PLAN

California Water Code Section 10631. (e) (8) A draft water shortage contingency resolution or ordinance to carry out the urban water shortage contingency plan.

The City will adopt a Resolution to Declare a Water Shortage Emergency which will implement this Plan.

SECTION 10 - WATER USE MONITORING PROCEDURES

California Water Code Section 10631. (e) (9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency plan.

NORMAL MONITORING PROCEDURE

In normal water supply conditions, production figures are recorded daily. Totals are reported weekly to the Water Division Supervisor. Totals are reported monthly to the Director and incorporated into the water supply report.

STAGE 1 AND 2 WATER SHORTAGES

During a Stage 1 or 2 water shortage, daily production figures are reported to the Water Division Supervisor. The Supervisor compares the weekly production to the target weekly production to verify that the reduction goal is being met. Weekly reports are forwarded to the Director. Monthly reports are sent to the City Manager. If reduction goals are not met, the Manager will notify the City Council so that corrective action can be taken.

STAGE 3 AND 4 WATER SHORTAGES

During a Stage 3 or 4 water shortage, the procedure listed above will be followed, with the addition of a daily production report to the Director.

DISASTER SHORTAGE

During a disaster shortage, production figures will be reported to the Supervisor hourly, and to the Director and City Manager. Reports will also be provided to the City Council.

SECTION 11 - PLAN ADOPTION STANDARDS

California Water Code Section 10621 (a) Each urban water supplier shall, not later than January 31, 1992, prepare, adopt, and submit to the department an amendment to its urban water management plan which meets the requirements of subdivision (e) of Section 10631.

The City of Pico Rivera prepared this Water Shortage Contingency Plan during September 1992. The Plan was presented to the City Council's Finance Committee for consideration on November 10, 1992. The plan was received and filed by the City Council on November 16, 1992 and submitted to the California Department of Water Resources. The Plan includes all the information necessary to meet the requirements of subdivision (e) of California Water Code Section 10631.

California Water Code Section 10642 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 California Water Code Section 6066 of the Government Code. 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.

Public meetings and the availability of copies of the draft water shortage contingency plan were properly noticed in the City's newspapers. Copies of the draft plan were available for public review at City offices and the Public Libraries. The City held two public meetings on the Water Shortage Contingency Plan. The meetings focused on residential water rationing programs and on commercial and industrial rationing options. A final meeting was held to present the completed Plan, which was supported by the City Council.

The 1992 Water Shortage Contingency Plan for the City of Pico Rivera was formally adopted at a duly noticed City Council Meeting.

California Water Code Section 10656 An urban water supplier that does not submit an amendment to its urban water management plan pursuant to subdivision (a) of Section 10621 to the department by January 31, 1992, is ineligible to receive drought assistance from the state until the urban water management plan is submitted pursuant to Article 3 (commencing with Section 10640) of Chapter 3.

The City of Pico Rivera submitted a Water Shortage Contingency Plan to the California Department of Water Resources.

RESOLUTION NO. 3945

A RESOLUTION ADOPTING THE WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the California Legislature enacted Assembly Bill 11X during the 1991 Extraordinary Session of the California Legislature (an act to amend California Water Code Sections 10620, 10621, 10631, and 10652, and to add Section 10656 to the California Water Code, relating to water); and

WHEREAS, AB11X mandates that every urban water supplier providing municipal water directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to develop a Water Shortage Contingency Plan; and

WHEREAS, AB11X mandates that said Plan be filed with the California Department of Water Resources by January 31, 1992; and

WHEREAS, the City of Pico Rivera is an urban supplier of water providing water to more than 3,000 customers, and has therefore, prepared and circulated for public review a Draft Water Shortage Contingency Plan, in compliance with the requirements of AB11X, and a properly noticed public hearing regarding said Draft Plan was held by the City Council on December 21, 1992 and a Final Water Shortage Contingency Plan prepared;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF PICO RIVERA DOES RESOLVE AS FOLLOWS:

1. The Water Shortage Contingency Plan attached hereto as Exhibit "A" and incorporated by reference as fully set forth herein is hereby adopted and ordered filed with the City Clerk;

2. The City Manager is hereby authorized and directed to file this Plan with the California Department of Water Resources;

3. The City Manager is hereby authorized at his discretion to declare that a Water Shortage Emergency and at such time implement this Water Shortage Contingency Plan;

4. The City Manager shall recommend to the City Council regarding additional procedures, rules, and regulations to carry out effective and equitable allocation of water resources during a water shortage.

APPROVED AND ADOPTED this 21st day of December 1992.

John G. Chavez

John G. Chavez, Mayor

ATEST:

Christine Schaefer

Christine Schaefer, City Clerk

APPROVED AS TO FORM:

Samuel Siegel

Samuel Siegel, City Attorney

AYES: Gardner, Mercado, Natividad, Proo, Chavez
NOES: None
ABSENT: None
ABSTAIN: None

INTRODUCED 1-4-93
ADOPTED 1-19-93

ORDINANCE NO. 826

AN ORDINANCE OF THE CITY OF PICO RIVERA AMENDING TITLE 13 OF THE PICO RIVERA MUNICIPAL CODE BY ADDING DIVISION IV - WATER CONSERVATION, CHAPTER 13.70 - PROHIBITIONS ON WASTEFUL USE OF WATER IN THE CITY OF PICO RIVERA

The City Council of the City of Pico Rivera does ordain as follows:

SECTION 1. The Municipal Code of the City of Pico Rivera is hereby amended by adding Division IV, Water Conservation, Chapter 13.70 to Title 13, to read as follows:

DIVISION IV, WATER CONSERVATION

CHAPTER 13.70
PROHIBITIONS ON WASTEFUL USE OF WATER

Sections:

13.70.010 **Purpose**
13.70.030 **Restrictions on Water Use**

13.70.010 PURPOSE

It is hereby ordained by the City Council that to conserve the City's water supply for the greatest public benefit, and to reduce the quantity of water used by the City's customers, that wasteful use of water should be eliminated. Customers of the City shall observe the following regulations and restrictions on water use:

13.70.030 RESTRICTIONS ON WATER USE

The following restrictions shall be effective during a declared Water Shortage Emergency.

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

B. Potable water shall not be used to clean, fill or maintain decorative fountains, lakes or ponds unless such water is reclaimed.

C. Potable water shall not be used for construction, compaction, dust control, street or parking lot sweeping or building washdown where non-potable or recycled water is sufficient.

D. Potable water shall not be used for sewer system maintenance or fire protection training without prior approval by the City Manager;

E. Potable water shall not be used for any purpose in excess of the amounts indicated for each class of service in Table 1.

F. No customer shall use potable water to irrigate grass, lawns, ground-cover, shrubbery, crops, vegetation, and trees (agricultural accounts are excluded from the time of irrigation restriction) between the hours of 10:00 o'clock A.M. and 6:00 o'clock P.M. or in such a manner as to result in runoff for more than five (5) minutes;

G. No customer shall use potable water to wash sidewalks, walkways, driveways, parking lots, open ground or other hard surfaced areas except where necessary for public health or safety;

H. No customer shall allow potable water to escape from breaks within the customer's plumbing system for more than twenty-four (24) hours after the customer is notified or discovers the break;

I. No person shall wash cars, boats, trailers, aircraft, or other vehicles by hose without a shutoff nozzle and bucket except to wash such vehicles at commercial or fleet vehicle washing facilities using water recycling equipment.

TABLE 1 FOR SECTION 13.70.030

The following is the City's rationing allocation method by customer type and stage and the appeals procedure. These rules and procedures were adopted as part of the City's Water Shortage Contingency Plan.

CUSTOMER ALLOTMENTS

Stage 1 Minimal shortage up to 10 percent - Voluntary Program

The City of Pico Rivera shall:

- notify all customers of the water shortage
- mail information to every customer explaining the importance of significant water use reductions
- provide technical information to customers on ways to improve efficiency
- conduct media campaign to remind consumers of the need to save water
- publicize and expand the toilet rebate, showerhead and other efficiency programs.

Stage 2 Moderate 10 to 25 percent shortage - Mandatory Program

In addition to the actions listed in Stage 1, the City shall establish mandatory annual allotments for each connection based on the average use during a five year base period selected by the Water Shortage Team.

1. Each single family residential connection shall receive no more than 132 (HCF) per year (11 HCF per month) plus 40 percent of the average annual usage in excess of 132 HCF.

2. Each multifamily residential unit shall receive no more than 84 HCF year (7 HCF per month) plus 40% of the average annual usage in excess of 84 HCF.

3. Each commercial and industrial connection shall receive no more than 81% of the average annual usage.

4. Each landscape connection shall receive 40% of the average annual usage. Each account determined by City staff to meet the City's Landscape Guidelines for xeriscape design, irrigation and maintenance shall receive 80% of the average annual usage.

5. Each recreational connection shall be allotted between 60 and 70 percent of the average usage, depending on the efficiency of the water use. Each customer shall provide the Water Department Manager an irrigation efficiency report including type, age, acreage and irrigation system specifics for each plant type. Customers not submitting reports receive the minimum 60 percent allotment.

6. No building permits will be issued or meters installed for new accounts which had not received building permits before the water shortage emergency declaration.

Stage 3 Severe 25 to 35 percent shortage - Mandatory Program

In addition to the actions listed in Stage 1, the City shall establish mandatory annual allotments for each connection based on the average use during a five year base period selected by the Water Shortage Team.

1. Each single family residential connection shall receive no more than 132 (HCF) per year (11 HCF per month) plus 20% of the average annual usage in excess of 132 HCF.

2. Each multifamily residential unit shall receive no more than 84 HCF year (7 HCF per month) plus 20% of the average annual usage in excess of 84 HCF.

3. Each commercial and industrial connection shall receive no more than 73% of the average annual usage.

4. Each landscaping connection shall receive 20% of the average annual usage. Each account determined by City staff to meet the City's Landscape Guidelines for xeriscape design, irrigation and maintenance shall receive 70% of the average annual usage.

5. Each recreational connection shall be allotted between 20 and 30 percent of the average usage, depending on the efficiency of the water use. Each customer shall provide the Water Department Manager an irrigation efficiency report including type, age, acreage and irrigation system specifics for each plant type. Customers not submitting reports receive the minimum 20 percent allotment.

6. No building permits will be issued or meters installed for new accounts which had not received building permits before the water shortage emergency declaration.

Stage 4 Critical 35 to 50+ percent shortage - Mandatory Program

In addition to the actions listed in Stage 1, the City shall establish mandatory annual allotments for each connection based on the average use during a five year base period selected by the Water Shortage Team.

1. Each single family residential connection shall receive no more than 24 HCF per year (2 HCF per month) per permanent resident.

2. Each multifamily residential unit shall receive no more than 24 HCF year (2 HCF per month) per permanent resident.

3. Each commercial, industrial and governmental connection shall receive no more than 65% of the average annual usage.

4. Each landscaping connection shall receive no allotment.

5. Each agricultural "annual crop" connection or recreational connection shall receive no water.

6. No building permits will be issued or meters installed for new accounts which had not received building permits before the water shortage emergency declaration.

APPEALS PROCEDURES

1. Any person who wishes to appeal their customer classification or allotment shall do so in writing by using the forms provided by the City.

2. Appeals will be reviewed by the Rationing Manager and site visits scheduled if required.

3. A conditional of approval shall be that all applicable plumbing fixtures or irrigation systems be replaced or modified for maximum water conservation.

4. Appeals may be granted for the following:

   a. Substantial medical requirements.

   b. Residential connections with more than four residents in a single family household or three residents per unit at multifamily accounts can receive 24 HCF per year additional person. During a Stage 4 shortage, a census may be conducted to determine the actual number of residents per living unit. Water will be granted to permanent residents - defined as five days a week, nine months a year.

   c. Commercial/Industrial accounts where water supply reductions will result in unemployment or decreased production, after confirmation by a City water auditor that the account has instituted all applicable water efficiency improvements.

   d. Nonagricultural customers can appeal for 12 HCF per year per horse or other large animal and six HCF per year for each efficiently irrigated mature fruit tree.

   e. Government agencies (parks, schools, county, etc.) may have separate account allotments combined into one "agency" allotment.

5. In the event an appeal for additional allotment is requested for irrigation of trees or vegetation in residential categories or for any agricultural use, the City staff may use the services of a qualified consultant in determining the validity of the request.

6. The Water Shortage Team shall approve or deny appeals.

7. If the Water Shortage Team and the applicant are unable to reach accord, then the appeal shall be heard by the City Manager, who will make the final determination.

8. All appeals shall be reported monthly to the City Council as a part of the Water Supply Report.

SECTION 2. Severability. The City Council hereby declares that it would have passed this Ordinance sentence by sentence, paragraph by paragraph, and section by section, and does hereby declare that the provisions of this Ordinance are severable, and if, for any reason, any sentence, paragraph or section of this ordinance shall be held invalid, such decision shall affect the validity of the remaining parts of this Ordinance.

SECTION 3. The City Clerk shall certify to the adoption of this ordinance. The City Council hereby finds that there are no newspapers of general circulation published and circulated within the City. The City Clerk shall therefore cause this ordinance to be posted in three public places within the City as specified in the Pico Rivera Municipal Code within fifteen days of its final passage and this ordinance shall take effect thirty days following its final passage.

APPROVED AND ADOPTED this 19th **day of** January**, 1993.**

John G. Chavez, Mayor

ATTEST:

Christine J. Schaefer, City Clerk

APPROVED AS TO FORM:

Samuel Siegel, City Attorney

I hereby certify that
the foregoing is a full,
true and correct
copy of Ordinance No. 826
Approved by City Council Jan. 19, 1993
City Clerk

AYES: GARDNER, MERCADO, NATIVIDAD, PROO, CHAVEZ
NOES: NONE
ABSENT: NONE
ABSTAIN: NONE

INTRODUCED 12-21-92
ADOPTED 1/4/93

ORDINANCE NO. 827

AN ORDINANCE OF THE CITY OF PICO RIVERA AMENDING TITLE 13 OF THE PICO RIVERA MUNICIPAL CODE, BY ADDING CHAPTER 13.80 - MORATORIUM ON SERVICE COMMITMENTS AND NEW CONNECTIONS

The City Council of the City of Pico Rivera does ordain as follows:

SECTION 1. The Municipal Code of the City of Pico Rivera is hereby amended by adding Chapter 13.80, to Division IV of Title 13 to read as follows:

CHAPTER 13.80
MORATORIUM ON SERVICE COMMITMENTS AND NEW CONNECTIONS

Sections:

13.80.010 **Declaration of Water Shortage Emergency**
13.80.020 **Regulations**
13.80.030 **Exemptions**

13.80.010 DECLARATION OF WATER SHORTAGE EMERGENCY

When the City Manager declares a water shortage emergency the following regulations shall become effective and shall continue in full force and effect while said emergency remains in effect:

13.80.020 REGULATIONS

A. The City shall not issue Building permits or otherwise issue oral or written commitments to provide new or expanded water service.

B. The City shall not install new meters for water service connections nor provide new or expanded water service connections, unless building permits have been issued.

C. The City shall not provide water for use on any new plantings installed after the declaration of a Water Shortage Emergency.

D. The City shall not annex territory located outside the City's service boundary.

13.80.030 EXEMPTIONS

The following uses shall be exempt from the moratorium and upon application to the City shall receive necessary water service commitments and connections to receive water from the City:

A. Uses, including but not limited to, commercial, industrial, single and multifamily residential, for which a building permit has been issued by the City on or before the declaration of a Water Shortage Emergency.

B. Uses, including but not limited to, commercial, industrial, single and multifamily residential, for which a retail meter had been installed by the City before the declaration of a Water Shortage Emergency, as evidenced by a written receipt and for which a building permit has been issued and remains in full force and effect.

C. Publicly owned and operated facilities, including but not limited to schools, fire stations, police stations, and hospitals and other facilities as necessary to protect the public health, safety and welfare.

SECTION 2. Severability. The City Council hereby declares that it would have passed this Ordinance sentence by sentence, paragraph by paragraph, and section by section, and does hereby declare that the provisions of this Ordinance are severable, and if, for any reason, any sentence, paragraph or section of this ordinance shall be held invalid, such decision shall affect the validity of the remaining parts of this Ordinance.

SECTION 3. The City Clerk shall certify to the adoption of this ordinance. The City Council hereby finds that there are no newspapers of general circulation published and circulated within the City. The City Clerk shall therefore cause this ordinance to be posted in three public places within the City as specified in the Pico Rivera Municipal Code within fifteen days of its final passage and this ordinance shall take effect thirty days following its final passage.

APPROVED AND ADOPTED this 4th **day of** January**, 1993.**

John G. Chavez

John G. Chavez, Mayor

ATTEST:

Christine Schaefer

Christine Schaefer, City Clerk

APPROVED AS TO FORM:

Sam Siegel by S.N.

Samuel Siegel, City Attorney

I hereby certify that the foregoing is a full, true and correct copy of Resolution No. 827 Approved by City Council 1/4/93

Christine Schaefer
City Clerk

AYES: Gardner, Mercado, Natividad, Proo, Chavez
NOES: None
ABSENT: None
ABSTAIN: None

APPENDIX E

EMERGENCY ACTION PLAN

Pico Rivera Water Authority
Emergency Action Plan

Introduction

This plan has been developed to assist the Pico Rivera Water Authority employees in coping with emergency conditions that may arise. The goal of this plan is to provide a working document that provides general instruction on responding to emergencies. The objectives of this plan are:

- Ensure the safety of City employees, their families, and property.
- Provide general direction to each employee responding to an emergency.
- Determines basic assignments and reporting locations for each employee.
- Establish a basic strategy designed to keep Pico Rivera Water Authority facilities operational and provide the highest possible service to its customers.
- Create an internal communication protocol to provide necessary information during the emergency.
- Ensure compliance with Cal-OSHA, California Code of Regulations, Title 8 §3220, Emergency Action Plans.

Guide Structure

This Emergency Response Guide is divided into three major sections, which are interrelated with each other, to offer a concise organized response by City personnel to emergency situations as they occur. Although it is impossible to foresee every emergency that might arise, this guide utilized by well-trained City staff should allow the City to return to normal operations as rapidly as possible when abnormal conditions arise. The Emergency Action Plan discusses the nature and categories of emergencies offering general response guidelines. The Fire Prevention and Fire Emergency Plan offers guidance for the prevention of fires, and, in conjunction with the Emergency Action Plan, provides instruction should a fire start. The Emergency Chlorination Plan outlines the City's response to water quality issues.

The Emergency Action Plan

The Emergency Action Plan is the backbone of the City's emergency response effort. It has been designed to provide a general operational framework from which the City can respond, both personally and corporately, to emergencies. Each employee should become familiar with the Cities Emergency Response Guide. This guide includes basic emergency instruction via the

Emergency Action Plan, Fire Prevention Plan, and Emergency Chlorination Plan. Periodic training is conducted to test the Cities emergency plans and their procedures.

The Emergency Response Guide is not intended to offer specific instructions on making repairs to damaged facilities. Cities employees are already well trained to handle the repair and maintenance of the Cities facilities. Instead, it is intended to offer both general and specific instructions on invoking emergency procedures, allowing the organized repair of City facilities, even under adverse conditions. Additionally, the plan outlines the responsibilities and roles each employee will assume during an emergency.

Brief Overview of Normal Pico Rivera Water Authority Operation

The City of Pico Rivera lies between the Rio Hondo and the San Gabriel Rivers at the foot of the Whittier Narrows Dam. It occupies an area of nearly 8.4 square miles (366,000 acres). The City was incorporated in 1958. There is little open space remaining in the City; thus, any growth will be incremental.

The Pico Rivera Water Authority delivers potable water supplies to its 9,100 customers through its pressurized distribution system. The PRWA's potable water treatment and distribution system is comprised of: 10 chlorination facilities; three small reservoirs with combined storage of 1 million gallons; 90 miles of mains; 875 fire hydrants; and, 11 booster pumps with a capacity of 12,500 gallons per minute (GPM). Average daily demand is approximately 5.0 million gallons. The first three are wells numbers 2,4, and 12 which are controlled by variable frequency drives and are each capable of producing approximately 2300 gallons per minute. Wells number 1,3 and 11 fill reservoirs and have the capacity of approximately 2800 gallons per minute each and are constant speed. Well number 5 is capable of pumping 1500 gallons per minute. Wells number 6,7 and 8 and 3 booster pump stations have a capacity to also maintain system pressure. Average system pressure is 78psi, 72 and the remaining booster pumps are for complete redundancy. The PRWA is interconnected with the City of Whittier and the San Gabriel Valley Water Company, from which it may draw emergency needs.

Precautionary chlorination is provided through the injection of chlorine gas into the common well discharge header. Contact time is provided in the reservoir and secondary chlorination is applied prior to the water entering the distribution piping prior to the first domestic connection. The Cities has two fixed natural gas engines to power wells 2, and 12, to continue pumping water in the event of a commercial power failure.. The Cities also has a portable generator equipped to specifically power the main office facilities in the case of a power outage.

Emergency Operations

During emergency conditions, the Park and Recreation office doubles as the Emergency Operations Center (EOC), located at 6767 Passons Blvd. All operations will be directed from this location. The EOC shall be under the direction of the City Manager, Chuck Fuentes, who shall direct the activities of the Cities staff. Additional contractual staff (i.e. engineering, construction) shall be obtained on an as needed basis.

What is an Emergency?

The dictionary defines an emergency as: “a sudden, urgent, unexpected occurrence requiring immediate action.” Using this definition it can be seen that emergencies can and do happen almost on a daily basis. These are handled in the normal daily course of events and are not the subject of this emergency response plan. This does not lessen their importance, but this type of emergency would not normally invoke a full emergency response. Less frequent but considerably more devastating emergencies are always possibilities. Emergencies created by natural events such as earthquakes, tidal waves, flooding, drought, fire, wind, etc., can be extremely devastating and have far reaching effects. In an effort to categorize emergencies, and the required level of response, the following classifications have been developed:

Level I Emergency: A level I emergency can normally be handled by a single person or a small field crew. A typical level I emergency is a line break, severed fire hydrant, customer emergency turn off, pump; valve, well, reservoir or other alarm condition. Most level 1 emergency only effect a small area, but some such as a commercial power failure may affect several facilities. Level I emergencies are normally handled at the Cities level with management being informed through the normal channels. Generally the EOC is not activated for a level I emergency.

Level II Emergency: Level II emergencies may involve multiple crews or even outside resources. Level II emergencies are major emergencies that might involve other agencies, yet are generally within the Cities service area. Examples of a level II emergency are major line breaks, requiring an outside contractor, an area wide power outage that lasts for an extended period of time, etc. Local police, Cal-Trans, the county or other water agencies might be involved in a level II emergency. Depending upon the severity of the emergency, the full EOC, or at least an abbreviated version, may need to be set up to handle coordination and information exchange.

Level III Emergency: Level III emergencies are severe catastrophic events such as high magnitude earthquakes, floods, major fires, etc. that do extensive damage to facilities. A level III emergency will require the response of all personnel who can report to duty. Level III emergencies would be beyond the capability of the City to control, requiring extensive outside assistance. In a level III incident the major damage could be outside the Cities service area, but require the Pico Water District assistance. In the event of a level III emergency the EOC should be immediately set up.

Any emergency can escalate or de-escalate requiring the City to respond accordingly. Simple level I incidents can escalate to level II requiring additional response while the more severe level III can de-escalate to level II or level I as conditions are returned to normal. For example should a major local earthquake occur, Cities resources would probably become rapidly depleted, requiring the City’s response to escalate accordingly? As the situation is brought under control, with the restoration of the production and distribution systems, the Cities response would de-escalate to a normal operation. Level II and III incidents may involve local, county, or state public safety officials (police and/or fire) requiring City forces to coordinate their efforts with the local officials.

Response to an emergency

The most important response to any emergency is to **STAY CALM** and rely on your training and good common sense. It would be impossible to create a complete set of guidelines detailing complete instructions on how to handle every type of emergency that might occur. In lieu of that, the following are guidelines to assist you in responding to an emergency.

If you are at work when an emergency occurs:

- Level 1 Emergency - These types of emergencies are common and might be the result of an alarm condition or a customer complaint. Rely on your training and good common sense to resolve these emergencies. Should the situation escalate, or you feel additional assistance is required, immediately contact your supervisor for assistance. Do not try to remedy a situation that you are either unprepared for or you do not have adequate resources to control. Report all emergencies and their resolution to your supervisor.
- Level II Emergency - Should a level I emergency escalate to level II, or if when responding to an emergency it turns out to be of level II proportions, immediately notify your supervisor for assistance and direction.
- Level III Emergency - Report to your supervisor or to the Cities EOC for additional instructions.

If you are NOT at work when an emergency occurs:

- Level I and II Emergencies - Normally the "on-call" person would be the first responder to after hour's emergencies. The person responding should notify their supervisor if assistance is needed and assemble a crew to correct the emergency. AllCities employees are subject to call out as needed.
- Level III Emergency - Since Level III emergencies are catastrophic in nature the following guidelines are given:
    - Insure the safety of your family.
    - Call your supervisor for instructions. If you cannot reach your supervisor,
    - Call the Cities office for instructions. If you cannot contact the office,
    - Report directly to work. You should report to the Cities main office.
    - Do not wait for someone to contact you. In a catastrophe, time is of the essence.
    - Providing the City's office is safe to enter, try to assess the damage to the system. Use the TV (local Channel 3), Cities radio, telephone, or whatever is functioning to assist you.

If there is immediate danger, or if there has been an injury requiring medical attention, call 911 to report the incident if phones are available and working. If the two-way radio is the only communications available, report the emergency to the City's Public Work Department for first aid if necessary.

Chain of Command

During emergency situations, the chain of command remains as it does during normal operations. The City Manager is responsible for the operation of the City with City employees being subordinate to the City Manager. Should the City Manager be absent, the Assistant City Manager shall acquire the duties. All field operations are managed through the City Of Pico Rivera Public Works Department's Water Division and lead by the Director of Public Works. A Senior Supervisor oversees the water division operating staff at the city corporate yard facility.

All pertinent decisions, communications and coordinating efforts must have the approval of the City Manager or his designate. The City Manager will assess the situation and determine what actions are necessary to return the Cities to normal operation.

Emergency Operations Center

During times of emergency, requiring the setup of an Emergency Operations Center (EOC), the Pico Rivera Water Authority will utilize its office facilities for this function. The will be the operations center. From this location the EOC Director (City Manager or his designate) will direct the activities of the Cities staff and outside support personnel. Commercial radio and television is available as a source of media information. Additional information may be available via the Cities Internet connection. System maps and other pertinent information are available in the file room and would be moved to the boardroom on an as needed basis. Security would be handled from the receptionist area utilizing the existing front security gate. Communications with the field crew(s) would be via the existing Nextel wireless telephone/radio system.

General Response Guidelines

The following are general response guidelines to emergency conditions that may occur. Emergencies can occur at any time, from minor level I emergencies to level III catastrophes. Remember that the key to success in dealing with any emergency is to STAY CALM and use a common sense approach.

These basic guidelines are intended to give basic assistance to an employee in dealing with an emergency. It is impossible to predict the nature, and to what extent, any emergency might involve. The following guidelines are intended to offer general assistance for some of the more probable emergencies an employee might encounter.

Fire (for additional information refer the Cities Emergency Operation Plan)

Buildings - If a small fire, such as a trash can fire, breaks out within a building and a fire extinguisher is available, and you are trained in its use, you may attempt to extinguish the fire. If the building structure is involved, you should evacuate the building, sounding an alarm if others are present, and summon the fire authority.

If you are in the office and a fire breaks out, activate the fire alarm. If the fire is small, such as a trashcan or computer fire and a fire extinguisher is near and you are trained in the use of fire extinguishers, you may attempt to extinguish the fire. If the fire involves the building structure, sound an alarm and evacuate the building, proceed to the designated staging area and notify the fire authority. Do not attempt to extinguish the fire. It is important that all

personnel in the building evacuate to the staging area to help account for all known persons that were in the building.

If you are caught in a building that is on fire observe the following:

- Stay close to the floor. The temperature will be cooler there and this is where you will find fresh air. Smoke tends to kill more people than flames.
- Never open any doors without checking to see if they are hot. A hot door indicates flames on the other side.
- If your clothing catches on fire, drop to the ground and roll.
- If a companion's clothing catches on fire, push them to the floor and make them roll. If a blanket, coat or other piece of heavy clothing is available, use it to smother the flames.

Motors or Switchgear - If you approach a well facility, pump, or control cabinet that appears to be on fire, DO NOT enter the site. Notify the fire authority and be available to assist as necessary. If the fire has spread to involve the structure, DO NOT try to extinguish the fire yourself. If a fire erupts in a motor or the switchgear, if possible, immediately turn off the main electrical breaker. If the fire is small, not involving the building structure and a fire extinguisher is near and you are trained in the use of fire extinguishers, you may attempt to extinguish the fire. DO NOT try to restart any electrical component that has been subjected to a fire.

Vehicles - If you encounter a vehicle fire while driving, pull the vehicle to the side of the road and exit as soon as it is safely possible. Summon assistance in whatever way is available without endangering your life. If the fire is in the engine compartment and the hood can be safely opened, you may use the vehicles fire extinguisher to extinguish the fire. Be careful of the battery. When overheated, batteries will explode.

Above all else, in the event of a fire, stay calm and DO NOT take unnecessary chances.

Earthquake

If you are in a building when an earthquake strikes you should DUCK, COVER, HOLD.

- DUCK - or drop to the floor.
- COVER - Take cover under a sturdy table or desk away from windows or other objects that might fall. If that is not possible, seek cover against an interior wall.
- HOLD - If you have taken cover under an object, HOLD on to it and be prepared to move with it. Stay in that position until the shaking stops and it is safe to move.

Some additional tips to remember in dealing with an earthquake:

- DO NOT try to exit a building during an earthquake. Wait until the shaking stops and then exit as rapidly as safely possible.
- Always try to move along an interior wall if possible.

- When outdoors, move to a clear area away from trees, buildings, signs, power lines, or other objects that might fall.
- If you are on the sidewalk near a building when an earthquake strikes, move into a doorway to protect yourself from falling plaster, bricks, glass or other debris.
- If you are in a store or other public building move away from windows, display cases or shelves with objects that might fall.
- When driving, pull over to the side of the road. Avoid overpasses and power lines. Stay in your vehicle until the shaking stops.

After an earthquake City facilities need to be inspected for their serviceability.

- Pumps and Wells - Carefully inspect the exterior of the well site for its stability before entering the site. If the building does not appear stable, do not enter it. Once inside inspect the alignment of the piping, motors and pumps. Do not try to run a pump or well if the associated piping or the pump and motor appear to be mis-aligned. Control cabinets should be standing in their normal position with all conduits intact. Do not try to run a pump or well using a control cabinet that is in any way damaged or has exposed electrical components. Do not touch any exposed wiring. Assume that all electrical wiring is HOT.
- Reservoir - On the tank look for piping separations, and buckling of the walls. Check to see if the tank is still centered on its base ring. Look for leaks.
- Pipelines - Look for wet spots or water bubbling up along known distribution lines. Investigate no water of low water pressure customer complaints for indications of broken pipelines.

Flooding

Unusually heavy rains, or the over spilling of the Los Angeles and San Gabriel River, have the potential of creating a flood situation. To the extent possible, sandbagging can be utilized to protect Cities facilities. Motors or electrical switchgear that is in danger of coming in contact with floodwaters should be turned off and the main breakers deactivated. Never try to run any electrical appliance that is in contact with water unless the appliance (such as a submersible pump) is designed to operate in a wet environment, nor should any motor or switchgear that has been submerged be operated before it has been thoroughly inspected by a qualified electrician.

Water quality can be affected by flooding. Well and distribution system samples must be taken. Should contamination be indicated, immediate action must be taken. This can include, but not be limited to, additional chlorination, flushing, activation of interconnections, public notification or boil water orders.

Sabotage of Water Supplies

As the population of the area increases and political and other changes take place in our society, there unfortunately becomes an increased potential for the Cities water storage and supply system to become the target of sabotage. This can be a simple prank, someone using a

reservoir for recreational purposes, to a deliberate attempt to contaminate the potable water system. Should there be evidence of tampering; an open or damaged reservoir hatch; apparent tampering with wells or pumps, suspicious containers left on site; water having strange odor or color; the following steps must be taken:

- Isolate the affected system.
- Immediately notify your supervisor and management.
- Isolate the area and notify local law enforcement officials.
- Collect water samples for analysis.
- Notify the Health Department.
- Public Notification as appropriate.
- Flush and chlorinate as appropriate.
- Return the system to service only after testing has deemed it safe.

For additional instruction refer to the Cities Emergency Chlorination Plan included in this booklet.

System Contamination

Should contamination occur within the distribution system, reservoir or wells, follow the procedures contained in the Cities Emergency Chlorination Plan. Likewise the Emergency Chlorination Plan should be consulted should there be a malfunction with the chlorination system.

Disruption of Supply

In the event of a disruption of the normal supply due to well failure, commercial power failure, pipeline failure, etc., activate the emergency generators. Should the problem involve the operation of a well notify one of the Well/ Pump repair companies for assistance.

Civil Disorder

Civil Disorders could cause an emergency status. Complete cooperation and coordination with local peace keeping authorities is essential. To prevent sabotage or vandalism of City facilities, they should remain locked and, as is safe and practical, staffed by City staff. Should additional security be required, private security guards would be hired.

Disruption of Distribution Pumping

Should there be a disruption in distribution pumping, such as a fire in one of the well sites, shut it down and activate one of the alternate wells, and check your chlorine residual after starting the well. **Do not attempt to handle the situation without first calling for assistance**. **Contact your superintendent and inform him of the situation.**

Main Breaks

Should a main break be evidenced by water coming up out of the ground, loss of pressure in the service area, etc., repairs should be initiated immediately; Cities forces will make the necessary repairs unless City Manager and or the field superintendent deems that assistance

will be necessary. These repairs are normally done under pressure utilizing the appropriate repair clamp. Repairs are made under pressure to minimize the possibility of back siphoning and contamination of the distribution system. Although in some cases when the water leaking out of the main is too excessive, an isolation of the area may be required by closing the closest line valves to the leak. If assistance is required City Manager Will notifying the Cities licensed pipeline contractor for the emergency pipeline repair. A Cities representative should monitor the repair activity to insure all repair work is in accordance with AWWA and Cities standards.

Fire Hydrants

Should a fire hydrant become damaged or sheered, isolate the hydrant by closing the hydrant lateral valve. If possible initiate repairs there after. If repairs for some reason can't be made then the area should be delineated and secured, if the hydrant still stands then a bag should be placed over the hydrant to prevent usage.

The local fire authority must be notified immediately of the hydrant's location and that it is out of service.

Commercial Power Outages

Commercial power outages will occur from time to time. These may be scheduled, due to maintenance or rolling blackouts, or unscheduled because of equipment damage or failure. At the time of a commercial power outage, contact the Southern California Edison Cities (SCE) for a determination as to the anticipated duration of the outage. The Cities has three portable diesel powered generator that can provide sufficient power for distribution pumping. The units must be manually started as per manufactures instructions and load must be manually transferred from commercial to standby power. Do not tamper with the normal generator connections as it can force motors to run in reverse or back feed the SCE system causing severe injury or death. Do not try to apply a load greater than that for which the generator is rated. Do not try to refuel the generator while it is running. Shut the unit down, refuel, and then return the generator to service. When commercial power is restored, allow time for the SCE system to stabilize before transferring load and stopping the generator. Once the load has been transferred, allow the generator to go through its cool down cycle before final shut down.

Building Evacuation

Should a Cities building evacuation be required, follow the posted evacuation route to the assigned staging area. Select an evacuation route that is farthest away from the emergency i.e. fire. Remain calm and move quickly, without running, to the nearest safe evacuation exit. The evacuation commander (individual assigned evacuation duties at the site or the most senior individual on site in their absence) is responsible to sound the evacuation alarm and oversee the evacuation. Providing it can be done safely, assigned individuals are to shut off the gas and electrical service to the building. Once assembled in the staging area, the Evacuation Commander, is to determine if all the known occupants have been safely evacuated. During an earthquake, do not evacuate the building until the earthquake has stopped. Do not reenter a building until it has been deemed safe.

Bomb Threats

Regardless of how they are received, bomb threats must be taken seriously. If the threat is to an occupied building, the building must be evacuated until the threat is alleviated. Cities management, local police and fire authorities must be immediately notified of the threat. If you are the person receiving the threat, try to remain clam and note as much information about the person making the threat as possible. This information can be valuable to authorities trying to apprehend the individual making bomb or other threats. At no time is a Cities employee to try to disable a suspected bomb or other suspicious device. The area should be secured allowing access only to authorized personnel.

Emergency Water Disbursement

In the event it becomes impossible to distribute water through the normal distribution system, emergency water distribution is possible from the reservoir. The compound is ideal because of its security fences and gated entrances. Additional security may be required for crowd control while Cities forces fill allocation requests from reservoir taps. This approach would provide a safer environment and better control for Cities staff than utilizing trailers or other means of trying to satisfy water demands in the community at large.

Emergency Notification

Should an emergency event occur requiring public notification, the Cities will follow the directions ascribed by the state health department. As necessary, electronic media, radio and television, as well as print media (both English and Spanish) will be utilized as required under Title 22 of the California Code of Regulations, sections 64463.1 – 64467. Additionally, two vehicles equipped with loudspeakers could be utilized to notify the residents of the emergency and any special circumstances such as water conservation requests. Because of the size of the service area this should be accomplished in 3 to 4 hours.

FREQUENTLY ASKED QUESTIONS

How will I know if I'm supposed to report to work? - If you are called, then you are to report. If you are not called, use your best judgment. During extreme emergencies it might be impossible for someone from the Cities to call you because of disruptions in the telephone system. Should there be a major event, such as a large scale earthquake, and your family and property are safe, you should make an effort to report to work or in some way make contact with the District.

How do I get through the roadblocks? - Roadblocks are a real potential. There are some things you can do to assist getting through. Always have your ID card handy. Politely inform the officer you are responding to an emergency. If possible, use a marked Cities vehicle. The EOC Director (City Manager or his designate) will try to notify the Los Angeles County Sheriff to allow employees into the service area.

If I'm at work and a major event occurs, will I be able to look after my family? - Yes. The well being of the Cities employees and their families takes a top priority in the Cities efforts in dealing with an emergency. How this is to be accomplished will depend upon conditions surrounding the event.

How will I communicate during an emergency? - Reliable communications is essential to combating the effects of an emergency. If there were a major event, such as a large earthquake, communications would be based upon what worked. The Cities has telephone, Nextel cellular phones, fax and Internet, commercial radio and television available for communications. Depending upon the severity of the event, you would use whatever communications, or mixture of communications, that still function, to communicate.

How long will the emergency last? - There is no way to tell how long an emergency will last. Generally emergency conditions will be in effect until the Cities operation has returned to a normal state.

How long will I be required to work? - That depends upon the severity of the emergency, the number people who respond, and the need for your particular expertise and abilities.

What type of work will I be required to do? - During an emergency the Cities will be required to make the best of what it has. This means there is a good possibility you may be asked to perform a function you are not accustomed to.

Will we get any help? - That depends upon the severity of the emergency and how wide spread it is. For catastrophic emergencies, the general rule of thumb is to not expect any outside help for the first twenty-four (24) to forty-eight (48) hours after the initial event. During that time the Cities will have to survive the best it can on what it has available.

What do I say if asked a question by the Media? - Refer all questions to the EOC Director. The same is true for questions you might be asked from the general public. Do not make comments on your own. During an emergency, accurate information is essential. It is important that all questions about the emergency be handled by a central source.

Emergency Contacts

Pico Rivera Water Authority Contacts

Adrian L. Diaz	
Office	562-801-4462
Cellular #1	562-755-0176
Fax	562-699-3585
Home	562-692-7370
E-Mail	adiaz@pico-rivera.org

Angel Quintero – Water Quality Specialist	
Office	562-692-4282
Cellular # 1 562-755-0954	
Fax	562-699-3585
Home	562-906-5312

E-mail aquintero@pico-rivera.org

Chris Alaniz – Utility Maintenance III	
Office	562-801-4462
Cellular	562-755-0768
Fax	562-699-3585
Home	562-864-6428

24-Hour Water Standby phone 562-244-0685

SEE 2006 WATER STANDBYS CALENDAR
SEE EMERGENCY TELEPHONE NUMBERS BOOKLET

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Pipeline Contractor

A.R. Sarmiento, Inc.

Tony Sarmiento	
Office	562-941-1165
Cellular	562-318-7001
Fax	562-941-1902

Valverde Construction, Inc.

Ahron Valverde	
Office	562-906-1826
Cellular	562-244-4705
Fax	562-906-1918

Emergency Chlorination

Matt-Chlor Inc.

James Woodward	
Mark Woodward	
Office	626-443-5034
Fax	626-443-2226

Well Service

General Pump District

Mike Bodart ext. 222	
Office	949-599-9606
Fax	949-599-6238

Layne

Dean Garcia 562-691-0903	
Office	714-870-5360
Cellular	562-755-5813
Fax	562-690-9192

Water Well Supply

Dale Epperly	
Office	562-864-3229
Fax	

Laboratory

Weck Lab- Industry

Office	626-336-2139
Fax	626-336-2634

Electrical Repairs

M&S Electric

Manuel Saenz	
Office	562-699-7697
Cellular	562-533-6964

Generator Repairs

Ashley Electric Service

Larry Lindsey	
Office	323-773-4303
Home	909-677-0118
Pager	323-707-6209

Southern California Edison	800-655-4555

California Department of Health Services – Hollywood District

David Chang	213-580-3171
Office	213-580-5723
Fax	213-580-5711

Police Department

Emergency	911
Office	562-949-2421

Fire

Emergency	911
Office	562-942-1015

Location of Emergency Equipment

Type of Equipment	Location
General	
Fire extinguishers	Office, Warehouse and Wells
First Aid Kit(s)	Warehouse and service vehicles
Respirators	Warehouse and office and wells
Spare Cell Phones	Office
Emergency Survival Kits	
Water Quality Items	
Chlorine Test Kits	Three colorimeter kits
Water Sample Kits	City Yard (Refrigerator)
Repair Equipment	
Utility truck	**City Yard**
Barricades	City Yard
Repair Clamps	City Yard
Air Compressor	City Yard
Back hoe	City Yard

Training

Type of Training	*Frequency*	*Topics Covered*
Fire Extinguisher Training	Annually	Review types of extinguishers and general fire extinguisher use.
Generator Training	Annually	Review generator-operating procedures and power failure scenarios.
Chlorination Training	Annually	Review CL2 safety, and emergency chlorination procedures.

Reference: California Code of Regulation, Title 8 Sections 3220.

Pico Rivera Water Authority
Fire Prevention and Fire Emergency Plan

General

A Fire Prevention and Fire Emergency Plan is part of the Cities Emergency Response Plan. Its intent is to alert employees to potential fire hazards, abate those hazards, and provide an emergency plan in the event of a fire.

Typical Fire Hazards

Typical fire hazards consist of, but are not limited to the following:

- Combustible materials: These are any type of materials which when ignited will burn. Included would be paper products, plastics, packing material, wood, certain chemicals, petroleum products, (gasoline, diesel fuel, paint thinners, cleaning solvents etc.).
- Electrical appliances: Any electrical appliance such as coffee makers, computers, radios, office equipment, and pumps motors, switch gear, etc., is capable of being a fire hazard. This occurs when the equipment is mis-used, poorly maintained, used in an environment where it was not intended (using an appliance intended only for indoor use out of doors), or used to provide a function for which it was not intended, etc. Over-loading receptacles, bypassing fuses or circuit breakers, using frayed or damaged electrical cords or wiring, all contribute to creating an electrical fire hazard.
- Gas appliances and items that produce sparks during their operation: Gas appliances, such as heaters, gasoline fueled equipment, cutting or welding torches, that are improperly used or maintained can create a fire hazard. This is also true of tools such as grinders or saws that produce sparks.

Fire Prevention

Being aware of what constitutes a fire hazard and acting accordingly is an important aspect to a good fire prevention program. The following suggestions should be adhered to as part of the Cities fire prevention program.

- Good housekeeping: Good housekeeping is essential to fire prevention. Clutter or accumulations of combustible material should not be allowed to accumulate, especially near an ignition source. Combustible materials must not be stored in closets or other places where there is a viable source of ignition. Example: storing combustible materials in the same closet with the furnace or water heater having a pilot light. Likewise, flammable liquids or chemicals must not be stored near an ignition source.

- Refueling of equipment: Refueling vehicles or equipment must be done with the engine off and in the appropriate location away from any source of ignition. Smoking is never permitted when refueling vehicles or equipment.
- Using electrical appliances: Never use any electrical device that is defective or has defective wiring, cords, connections, or switches. Only use the appliance for its intended purpose. Never overload an outlet, circumvent fuses or circuit breakers, and insure the appliances' grounding needs are properly adhered to.

Inspections and Maintenance

Inspections and proper maintenance are a part of the Cities fire prevention program. Inspections are likewise a part of the Cities overall safety program. Inspections are accomplished on a regular basis but need to be augmented by brief safety checks each time a tool, appliance, or piece of equipment is to be used. Any time a tool, appliance or piece of equipment appears to be damaged, does not work properly, or appears to be unsafe, DO NOT USE IT until it can be properly repaired or replaced. Do not use electrical equipment with frayed wiring, cords or plugs with the grounding or other prongs removed or altered.

Fire Control

None of the Cities facilities are equipped with internal automatic sprinkler systems. AllCities facilities and vehicles are equipped with fire extinguishers. These portable fire extinguishers are dry chemical, or CO2, depending upon their location. All the fire extinguishers are checked monthly and serviced annually. Fire extinguisher locations must not be obstructed. Fire extinguishers must be in plain sight with easy access and clearly marked as appropriate. Fire extinguishers are for use on small non-structural fires such as wastebasket fires or small appliance fires. They are to be used only by persons who have been trained in their usage. To effectively use a fire extinguisher, do the following:

- Remove the fire extinguisher from its mounting point.
- Grasping the fire extinguisher with one hand on its handle and the other on the bottom, rotate the extinguisher, top to bottom, a couple times. This is of particular importance with dry chemical extinguishers as it loosens up the chemical allowing it to be expelled with the propellant.
- Holding the extinguisher with one hand in the upright position, remove the ring pin with the other hand.
- Keeping a safe distance from the fire, point the nozzle of the extinguisher at the base of the fire.
- Squeeze the trigger, using short bursts while moving the extinguishers blast across the fire.
- Continue using an arching motion and short bursts aimed at the base of the fire until the fire is out or the fire extinguisher is empty.

If the fire involved an electrical appliance, tool or equipment, do not try to re-start or run the device until it can be thoroughly inspected and repaired by a qualified electrician.

Fire Alarm Systems

The City's facilities do not have any type of fire sensing or alarming equipment. Should a fire be discovered, the person discovering the fire should yell "FIRE" to alert any other building occupants and take the appropriate action. If the fire is small, such as a trash can fire, and a fire extinguisher is available, and you are trained in its proper operation, you may extinguish the fire. For larger fires, or fires that involve the building structure or fires that could not be successfully extinguished, call the local fire authority.

Anytime the fire alarm is sounded, the occupants of the affected facility must immediately engage in an orderly evacuation. Occupied Cities facilities have evacuation routes posted. The evacuation route posters include staging areas and the locations of fire extinguishers. The fire authority should be called for any fires that are larger than those that can be easily extinguished with a portable fire extinguisher. Fire alarms are serious and activation as a prank will result in the appropriate disciplinary action.

Employee Fire Prevention Safe Work Practices

Every employee must comply with safe work practices to minimize fire hazards and insure a safe response in the event of a fire. The following guidelines are designed to encourage safe work practices:

- Handle flammable or combustible liquids very carefully. Gasoline, paint thinners, diesel fuel, etc. should only be stored in small amounts (five gallons or less) in approved marked containers and away from any source of ignition.
- When refueling vehicles or other engine power equipment, never leave the engine running.
- Never smoke when refueling vehicles or engine driven equipment.
- Should a spill of a flammable liquid occur, immediately clean it up and properly dispose of the clean-up materials.
- Oily rags, or rags with other combustible liquids on them, must only be stored in the proper fire safe containers.
- Never store materials where they may block access to a fire extinguisher, fire sprinklers, or fire alarm.
- Never store combustible materials, including flammable liquids, near an ignition source.
- Do not block fire exits with stored materials. Always keep exits free and clear.
- Avoid overloading electrical receptacles and keep use of extension cords to a minimum.

- Do not use defective electrical equipment. This includes equipment with frayed wiring, defective plugs, bad switches, or that is improperly grounded.
- Never circumvent any electrical safety device such as a fuse or circuit breaker.
- Know how to use a fire extinguisher and its limitations. Do not try to fight a fire that is to big for the rating of the fire extinguisher being used. Do not use a fire extinguisher if you are not trained in its usage.
- Know where the fire alarms are, how to activate them, and what they sound like when activated.
- When working in a building, know where the exits and evacuation routes are.

Areas Subject to Periodic Inspection

The following areas will be periodically inspected for fire hazard. The following areas are scheduled monthly for inspected are:

Cities Office
Storage Facilities
Motor Control Centers (MCC)
Wells and associated areas
Pumps and associated areas
Chlorination equipment
All Fire Extinguishers

Reference: California Code of Regulation, Title 8 Sections 3221.

Pico Rivera Water Authority
Emergency Chlorination Plan

Name: Pico Rivera Water Authority

Address: 9633 Beverly Road

Pico Rivera CA 90660

System Supervisor: Adrian Diaz (Distribution Grade 3, Treatment Grade 2)

Water Quality Specialist: Angel Quintero (Distribution Grade 2, Treatment Grade 2)

System Operators: Chris Alaniz, Utility Maintenance III (Distribution Grade 3, Treatment Grade 2)

Dave Valdepena, Utility Maintenance III (Distribution Grade 2 Treatment 2)

Phone Number: 562-755-0176 or 562-244-0685

System Type: Community Water System

Population Served: Approximately 35,000

Source Water: The Pico Rivera Water Authority primary source is 10 groundwater wells drawing from common aquifers.

Treatment Provided: Precautionary chlorination (gas chlorine) is provided at each of the wells when the system is utilizing its groundwater source.

System Overview

The City of Pico Rivera lies between the Rio Hondo and the San Gabriel Rivers at the foot of the Whittier Narrows Dam. It occupies an area of nearly 8.4 square miles (366,000 acres). The City was incorporated in 1958. There is little open space remaining in the City; thus, any growth will be incremental.

The Pico Rivera Water Authority delivers potable water supplies to its 9,100 customers through its pressurized distribution system. The PRWA's potable water treatment and distribution system is comprised of: 10 chlorination facilities; three small reservoirs with combined storage of 1 million gallons; 90 miles of mains; 875 fire hydrants; and, 11 booster pumps with a capacity of 12,500 gallons per minute (GPM). Average daily demand is approximately 5.0 million gallons. The first three are wells numbers 2,4, and 12 which are controlled by variable frequency drives and are each capable of producing approximately 2300 gallons per minute. Wells number 1,3 and 11 fill reservoirs and have the capacity of approximately 2800 gallons per minute each and are constant speed. Well number 5 is capable of pumping 1500 gallons per minute. Wells number 6,7 and 8 and 3 booster pump stations have a capacity to also maintain system pressure. Average system pressure is 78psi-72psi and the remaining booster pumps are for complete redundancy. The PRWA is interconnected with the City of Whittier and the San Gabriel Valley Water Company, from which it may draw emergency needs.

Precautionary chlorination is provided through the injection of chlorine gas into the common well discharge header. Contact time is provided in the reservoir and secondary chlorination is applied prior to the water entering the distribution piping prior to the first domestic connection. The Cities has two fixed natural gas engines to power wells 2, and 12, to continue pumping water in the event of a commercial power failure. The Cities also has a portable generator equipped to specifically power the main office facilities in the case of a power outage.

Normal Operation

Potable water for the Pico Rivera Water Authority is provided by groundwater wells. Operation of the wells is controlled by system pressure directly related to system demand. As the system water pressure drops, indicated by pressure transducers for each well, which is connected to PLC and then the well is controlled by the SCADA system either starting or stopping the well to attain the desired pressure. Once the desired system pressure is attained the well production is stopped. Each well has sufficient capacity to provide the system’s daily needs. The wells alternate their duty cycles on a weekly basis.

Distribution system pressure is maintained at approximately 78 to 72 psi by any three City wells or two wells and two boosters, pump from any one of the three reservoirs. Pump activation is via pressure sensors monitoring the distribution system.

Reservoir levels and distribution system pressure are monitored 24hrs/day via SCADA and recorded on a daily basis by the individual checking the wells for that day.

System Disinfection

Chlorine levels are monitored daily. Chlorinators are used to inject gas chlorine to an injection point on the distribution line prior to the water entering the distribution system. The rortometer is manually adjusted to provide a .50 mg/L dosage. This dosage has proven to provide an average residual of .25 mg/L to the farthest point in the distribution system. Daily chorine residuals are taken at each of the Districts well sites at a designated sample tap prior to the distribution system. Additionally, chlorine is monitored when water samples are taken throughout the distribution system. Records are maintained at the Cities office. There are no known water quality issues that can affect the chlorination process.

Emergency chlorination connections are provided at the reservoir, the discharge of the wells. Matt-Chlor Inc. provides emergency chlorination equipment on an as needed basis.

Monitoring

Chlorine sampling is accomplished daily with bacteria sampling being done weekly throughout the distribution system. Table 1 indicates the maximum chlorine levels allowed during normal system operation. Disinfectant residual levels for chlorine or chloramines shall not exceed those listed in Table 1 unless, under the direction of the Department of Health Services (DHS), higher levels of disinfectant are necessary to protect the public health or address a specific contamination issue. Table 2 indicates the sampling sites and their respective location to the source of supply. Figure 3 graphically shows the locations of the various distribution system-sampling points and sources of supply.

TABLE 1 *Maximum Residual Disinfectant Levels*	
Chlorine	1.0 mg/L
Chloramines	0.0 mg/L

TABLE 2 *Monitoring Sites for Groundwater*		
SITE NUMBER	**SITE ADDRESS**	**LOCATION**
1	8739 Gallatin Road Plant # 1	North part of the system
2		
3	8316 Washington Blvd Plant # 2	Middle of the system
4		
5	8305 Slauson Ave	Southwest part of system
6	8231 Elmont Ave	South part of the system
7	8523 Ceylon Ave	South of the system
8	9623 Telegraph Rd	South part of the system
11	9732 Lundahl Ave Plant # 3	Southeast part of the system
12		

Samples are tested by Clinical Laboratories of City of Riverside for E.coli, fecal coli and coliform. The lab will immediately notify (within 24 hours) the Cities and the DHS of any positive samples. If a routine sample is total coliform-positive, a repeat sample must be taken within 24 hours of notification. The repeat samples shall be taken within the same 24-hour period and shall consist of at least three samples for every total coliform-positive routine sample. When collecting repeat samples, at least one sample must be from the same sampling tap that produced the original total coliform-positive sample. At least one sample shall be taken within five service connections upstream and downstream of the point of the original positive sample unless there is no upstream or downstream service connection. If a repeat sample returns total coliform-positive, the DHS is to be immediately notified.

Chlorination Equipment

Gas chlorine provides primary chlorination. These units are capable of producing 50 pounds per day, should additional chlorine be required, the chlorinators can be upgraded to a 100 pound per day chlorinator concentration of gas chlorine. Injection is at each of the groundwater wells discharge. Piping changes to the inlet/outlet piping have been made to enhance the contact time. Lighting and ventilation are provided at each injection site. Matt-Chlor Inc. provides chlorine system maintenance.

System Maintenance

Matt-Chlor Inc. provides maintenance of the chlorine system including calibration of the chlorine test equipment.

An annual flushing program is utilized to flush the distribution system. All fire hydrants and isolation valves are exercised and tested at this time.

Main breaks on the older shallower lines are repaired under pressure utilizing repair clamps to minimize the possibility of back siphoning and contamination of the distribution system.

Record Keeping

Sampling reports and test results shall be retained for at least five years at the City Yard office. Additionally, the laboratory shall submit copies of all required bacteriological monitoring results directly to the DHS.

Emergency Contamination Procedures

If repeat samples are total coliform-positive, City's Water Authority and the DHS must be immediately notified and the effected system must be flushed, disinfected and resample until the contamination is alleviated. The City Manager in conjunction with one or both of the City's' certified operators, under the direction of the DHS, will determine the need for and the oversight of all emergency events. The Director of Public Works and Senior Supervisor will have the responsibility to insure that proper procedures are followed protecting the Pico Rivera Water Authority system and its customers.

Well Contamination: Should sampling reveal possible contamination of one or more of our wells do the following:

- Samples of the reservoir and the distribution system should be taken to insure the contamination has not entered the system.
- Notify the Senior Supervisor. He shall be responsible, under the direction of the DHS, for determining the need for and the oversight of all emergency events. It shall be his responsibility to insure that proper procedures are followed protecting the Pico Rivera Water Authority system and its customers.
- Notify Water Well Supply for assistance in flushing and decontaminating the well(s).
- Return the system to normal operation only after it has been deemed safe to do so.

Reservoir Contamination: Should sampling reveal possible contamination of our reservoir, do the following:

- Samples of the distribution system should be taken to insure the contamination has not entered the system.
- Samples of the well(s) should be taken to determine if the contamination source is within the well(s).
- Notify the Senior Supervisor. He shall be responsible, under the direction of the DOHS, for determining the need for and the oversight of all emergency events. It

shall be his responsibility to insure that proper procedures are followed protecting the Pico Rivera Water Authority system and its customers.

- If deemed necessary, notify Matt-Chlor Inc. for assistance in flushing and chlorinating the reservoir(s).
- Return the system to normal operation only after it has been deemed safe to do so.

Distribution System Contamination: Should sampling reveal possible contamination of our reservoir, do the following:

- Samples of the wells and the reservoir should be taken to determine the source of the contamination.
- Utilizing fire hydrants flush the effected area and resample.
- Notify the Senior Supervisor. He shall be responsible, under the direction of the DHS, for determining the need for and the oversight of all emergency events. It shall be his responsibility to insure that proper procedures are followed protecting the Pico Rivera Water Authority system and its customers.
- Notify Matt-Chlor Inc. if portable or spot chlorination of the distribution system is required.
- Return the system to normal operation only after it has been deemed safe to do so.

Should emergency or portable chlorination equipment be needed, or spot chlorination be required in the distribution system, contact Matt-Chlor Inc. Chlorine injection points are provided at each well discharge piping, each reservoir and on the discharge piping of the distribution pumps. Likewise, should a failure occur in the chlorination system, contact Matt-Chlor Inc. for service.

Public Notification

Should a contamination event occur requiring public notification as directed by DHS, theCities will follow the dictates of Title 22, Sections 64463.1 – 664467 to the satisfaction of the DHS inspector. The following will be enacted based upon the direction of the DHS inspector:

- Electronic media notification via local radio and television as soon as possible but in no case more than 24 hours after being directed to do so by the DOHS.
- Print media via local daily newspapers of a Water Quality Failure given at least once within 14 days of the incident.
- If required, flyers containing information about the Water Quality Failure would be handed out door-to-door and posted in public places.
- Additionally, two vehicles equipped with loudspeakers could be utilized to notify the residents of the Water Quality Failure.
- In severe contamination cases, boil water notices would be handed out door-to-door, posted in public places and local media notified.

Chlorine Gas Safety and First Aid

Safety

Do Not Attempt to repair a leak with out proper equipment and supervision

1. For leaks, contain the material, close the doors to the chlorine room and call the fire department
2. Fumes from leaks can be very irritating and or deadly.
3. Gas chlorine is very corrosive and can cause severe chemical burns.
4. Wear proper clothing such as classA fully encapsulated suit equipped with an SCBA.
5. Segregate from acids, reducing agents, and combustibles.

First Aid

1. Eyes - Flush with water for at least 15 minutes.
2. Skin - Remove soaked clothes. Wash with plenty water for at least 15 minutes.
3. Inhalation - Remove to fresh air. Seek medical help immediately.
4. Ingestion - If conscious, drink large amounts of water. Do not induce vomiting. Seek prompt medical attention.
5. Refer to the Material Safety Data Sheets (MSDS) for further information.