CITY OF CORONA

URBAN WATER MANAGEMENT PLAN

2005 UPDATE

Prepared for

CITY OF CORONA

Department of Water and Power

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EXECUTIVE SUMMARY

The City of Corona Department of Water and Power considers the Urban Water Management Plan (UWMP) as a long-range planning tool to ensure the water service reliability for our customers into the future. The UWMP is also a guide for management of water resources with neighboring water agencies. The UWMP will serve as written verification of water supply for existing customers and future development, assist the City in defining effective water management strategies, document efficient use of available water supplies, and allow the City to maximize its resources.

Urban water suppliers are required by the Urban Water Management Planning Act (Water Code Sections 10610-10656), to update their UWMP and submit it to the California Department of Water Resources (DWR) every five years, in years ending in 0 and 5. An UWMP Update is required in order for a water supplier to be eligible for DWR administered State grants and loans, and drought assistance. The City of Corona prepared its first UWMP in 1997, with an update in 2000.

This 2005 plan update summarizes the City of Corona Department of Water and Power's evaluation of:

- Water supplies and demands
- Reliability of supplies during drought and emergency conditions
- Current demand management measures and implementation of Best Management Practices (BMPs)
- Water recycling
- Alternative water supply sources.

Water Supply and Demand

The City of Corona's water system obtains potable water from two (2) sources. The primary source is groundwater pumped from the Temescal Basin and the Bedford and Coldwater Sub-Basins. The secondary source is imported water from MWD Colorado River and State Project Water on the Mills Pipeline from MWD's Henry J. Mills filtration plant, which is delivered to the City through three turnouts. The City's current available total water supply is 79,056 acre feet per year (AF/Y).

For the past five years, the City's total water demand has averaged 42,462 AF/Y with 43.12 percent (18,311 AF/Y) being supplied from local groundwater wells, 40.02 percent (16,992 AF/Y) from Colorado River, and 16.86 percent (7,159 AF/Y) from the Mills Pipeline Connection. In 2004, the City produced over 50% of its demand from local groundwater. Total water demand is currently 45,000 AF/Y. The City's Water Master Plan estimates ultimate build-out demand at 49,408 AF/Y in the year 2020.

Reliability of Supplies During Drought and Emergency Conditions

Corona's diversification of water supplies has resulted in ample capacity to meet its customer's demands. This became evident in the past seven years by the development of the Temescal Basin Desalter and seven new wells in the Temescal Basin. As a result, Corona will be in a position to manage its water supplies to match specific basin responses to both wet and dry years. Operating costs will be minimized by utilizing lower cost supplies such as local ground water. The City is currently developing a Ground Water Management Plan to use as a guide for management of its ground water resources.

Corona recognized that while the cost of demand management and supply augmentation are high, it needed to develop additional supply capacity to offset supply interruption from maintenance, equipment failures, natural disasters, drought, etc. Correspondingly, Corona has gone to great lengths to improve the capacity of the local supply over the past decade with updating the water master plan, implementing capital improvement and replacement projects, updating the water utility rates and continued planning. These efforts have enabled the city to be adequately prepared to accommodate water demand in the years to come.

Current Conservation Program and Implementation of Best Management Practices

The City of Corona is a signatory to the Memorandum of Understanding regarding the Urban Water Conservation in California (MOU) and is therefore a member of the California Urban Water Conservation Council (CUWCC). The City became a signatory to the MOU on March 3, 1996 and must submit bi-annual reports to the CUWCC outlining progress towards implementing the 14 Best Management Practices (BMPs) in the MOU. BMPs are conservation practices that have been identified by the CUWWC: conferences, BMP workshops, free publications, research regarding water management practices, leadership on water legislation and networking with other agencies and special interest groups.

A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement, including, but not limited to, all of the following:

1. Water survey programs for single-family residential and multi-family residential customers.
2. Residential plumbing retrofit.
3. System water audits, leak protection and repair.
4. Metering with commodity rates for all new connections and retrofit of existing connections.
5. Large landscape conservation programs and incentives.
6. High efficiency washing machine rebate programs.
7. Public information programs.
8. School education programs.
9. Conservation programs for commercial, industrial, and institutional accounts.
10. Wholesale agency programs.
11. Conservation pricing.
12. Water conservation coordinator.
13. Water waste prohibition
14. Residential ultra-low-flush toilet replacement program.

The City has in good faith, tried to address and comply with all of the BMP targets listed in the CUWCC MOU where applicable. The UWMP discusses the water conservation programs and BMPs currently implemented and planned by the City. BMP Number 10 applies only to wholesale agencies and is not reported in this plan.

Water Recycling

The City currently has the capacity to supply 1,350 AF/Y of disinfected tertiary Title 22 water as recycled water to offset potable water demand where appropriate. The recycled water quality is excellent. The City adopted its Recycling Water Master Plan in 2001 and is still current. During the

preparation of the recycled water master plan, a marketing survey was conducted which identified potential future users to include, schools, landscape management districts, parks, golf courses etc. Use of recycled water was well received in the community. The survey also concluded that there are agricultural, commercial landscapes, and industrial customers that would like to convert a portion of their water use to recycled water when it becomes available.

Alternative Water Supply Sources

Even with Corona's current supply reliability the City has taken steps to further strengthen the integrity of their water supply. Two water supply projects are to be completed in the future to achieve this objective. The Rincon and El Sobrante Ground water treatment projects have be planned out adding almost 11,000 AF/Y to the current system.

The Rincon project is to be completed in the fiscal year of 2008-2009. The proposed location is in the vicinity of Rincon St. and Alcoa. The project will yield 4.7 MGD or 5,265 AF/Y to the current system. The specific components of the project are 3 new wells, a raw water pipeline, and a treatment process which will be selective resins or best available technology (BAT), a 6,500 sq. ft. building to house the process, a product pipeline, property acquisition, and a brine disposal pipeline.

The El Sobrante project is to be completed in the fiscal year of 2014-2015. The proposed location is in the vicinity of Sixth St. and El Sobrante. The project will yield 4.7 MGD or 5,265 AF/Y to the current system. The specific components of the project are 3 new wells, a raw water pipeline, and a treatment process which will be selective resins or best available technology (BAT), a 6,500 sq. ft. building to house the process, a product pipeline, property acquisition, and a brine disposal pipeline.

Recommendations

As previously mentioned, the City of Corona Department of Water and Power considers the UWMP as a long-range planning tool to ensure the water service reliability for our customers, and as a guide for management of its water resources. This update recommends:

- Implementation of a Ground Water Management Plan
- Implementation of alternative water supply projects as identified in the City's water master plan
- Continue to increase supply reliability through groundwater recharge at the City's percolation ponds
- Continue to offset appropriate potable water demands with recycled water, and
- Continue to support the water demand management measures established by the California Urban Water Conservation Council.

Section 1

PUBLIC PARTICIPATION

Law

> 10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published ... After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

The City of Corona has actively encouraged community participation in its urban water management planning efforts since the first plan was developed in 1985. Public meetings were held on the 1996 and 2000 plans.

For this update to the Urban Water Management Plan, several public notices were published and a public workshop held. These included (1) a public notice placed in the Press-Enterprise on October 28 & 30, 2005, noticing the public that work would begin on the plan, (2) A Public Workshop was conducted on November 1, 2005, to review the draft plan, and (3) A Public Hearing was held on November 16, 2005, to accept any final public comments before the Corona City Council resolved to adopt the plan.

Legal public notices for each meeting were published in the local newspapers, and posted at City facilities. A copy of the "Notice of Public Workshop" is included at the end of this section. A reasonable attempt was made to invite and encourage the public to participate in the development of the plan; however, no public comments were received. A copy of the workshop presentation is included at the end of this section.

The City of Corona has well established conservation programs in-place and interacts frequently with the public of all demographic sectors through the implementation of water-use efficiency programs. Some of these programs include an ultra-low-flush toilet program, free public landscape classes, water education programs, landscape evaluations, and commercial, institutional, and industrial programs.

Plan Adoption

The City of Corona prepared this update of its Urban Water Management Plan during the summer and fall of 2005. The updated plan was adopted by City Council in November 2005, and submitted to the California Department of Water Resources within 30 days of Council approval. Attached to the cover letter addressed to the Department of Water Resources and as Appendix B, are copies of the signed Resolution of Plan Adoption. This plan includes all information necessary to meet the requirements of the California Water Code Division 6, Part 2.6 (Urban Water Management Planning).

Agency Coordination

Law

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

Coordination within the City

The City of Corona Department of Water and Power staff coordinated the development of the original plan with the city planning, public works, and all other related departments. The Department of Water and Power, through the Water and Sewer Master Plans adopted in 1997 and most recently the 2005 updates to the Water and Sewer Master Plans, has been able to forecast water and sewer reliability through the year 2030. These plans illustrate and forecast water demands and sewer capacities and makes recommendations on capital improvements and capital replacements. This plan was a city-wide coordinated document.

Interagency Coordination

The City of Corona is within the service area of Western Municipal Water District, who in-turn is a member agency of the Metropolitan Water District of Southern California. Metropolitan Water District is the regional water purveyor for Southern California and sells water to Western Municipal Water District. The City of Corona purchases, 50 percent of its water supply from Western Municipal Water District. The City therefore coordinated the development of this plan with the following agencies:

- Western Municipal Water District (acts as a wholesaler)
- Elsinore Valley Municipal Water District
- Santa Ana Watershed Project Authority
- The City of Norco
- The City of Riverside
- Lee Lakes Water District
- SAWPA
- Riverside County Flood Control

Table 1 summarizes the efforts the City of Corona has taken to include various agencies and citizens in its planning process. Copies of the transmittal letters sent to the various agencies are included at the end of this section.

Table 1 Coordination With Appropriate Agencies							
Entities	**Participated in UWMP Development**	**Commented on the Draft**	**Attended Public Meetings**	**Contacted for Assistance**	**Received Copy of the Draft**	**Sent Notice of Intention to Adopt**	**Not Involved / No Information**
Wholesaler		x		x	x		
Retailers		x	x		x		
Wastewater Agencies	x				x		
Special Interest Groups			x				
Citizen Groups			x				
General Public			x			x	
Public Library					x	x	
Other							

Section 2

HISTORY, CLIMATE, DEMOGRAPHICS

Law

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

History of the City of Corona

The City of Corona is located in the northwestern portion of Riverside County. The City's regional location is depicted on Figure 3-1 from the City's Water Master Plan. A copy of Figure 3-1 is included at the end of this section. The City encompasses approximately 39 square miles of residential, commercial, and industrial land.

Neighboring cities include Riverside to the northeast and Norco to the north. The eastern portion of the City is generally bounded by unincorporated Riverside County territory. Home Gardens and El Cerrito are two communities located within this County land. The southern and western portions of the City are bounded by the Cleveland National Forest and unincorporated County territory. Prado Flood Control Basin is located adjacent the City's northwest corner. The unincorporated community of Coronita is located within Corona's boundaries in the western portion of the City. This community along with El Cerrito, although unincorporated, is included in Corona's existing service area.

The area is divided by several Southern California highways, providing access into the City from all directions. The Riverside Freeway (SR-91) runs east and west and the Corona Freeway (I–15) runs north and south through the City. Major local roads include Lincoln Avenue, Main Street, and Fullerton Avenue in the north-south direction; and Ontario Avenue, Sixth Street and Railroad Street in the east-west direction.

In the early 1700s, prior to the arrival of the Spanish, the Corona area was occupied by the Luiseño and Gabrieleño Indians. The arrival of the Spanish brought the Franciscan missionaries and agricultural development to the area. These early Spanish missionaries converted the Indians to Christianity and taught them agricultural husbandry.

In the early 1800's, the agricultural base developed in the mission era expanded as portions of the Corona area became part of the Mexican land grants (Rancho La Sierra Yorba, Rancho Jurupa, Rancho El Rincon, and Rancho El Sobrante de San Jacinto). These regions were dominated by cattle ranching and agriculture. In 1846, by the Treaty of Guadalupe Hidalgo, the Corona area, as

part of California, was ceded by Mexico to the United States. In 1849, the California gold rush brought prospectors, settlers and new development. This influx of people to Corona was aided greatly by the Butterfield Stagecoach, which traversed the Corona area through the Temescal Canyon. The land boom of the 1880's resulted in the formation of the township of South Riverside. In 1896, the township was incorporated and its name changed to Corona. The initial City municipal area included 19.14 square miles with approximately 1,400 people. The center of the City was a circular dirt road, 7/8 of a mile in diameter, known today as Grand Boulevard. This inspired the City~s secondary name, the "Circle City."

In the early 1800's, the planting of citrus groves and the mining of clay, gypsum, porphyry, and other mineral deposits necessitated the development of a regional water system. Water was initially obtained by surface diversions of stream flows and shallow windmill wells. Distribution was by animal-drawn water tanks, open ditches and furrows, and non-pressure irrigation pipe. In 1887, the Temescal Water Company (TWC) was formed to develop the local water supply sources and to distribute the waters in the Corona area for domestic, mining and agricultural uses. For this early water system, TWC constructed major concrete gravity pipelines in Temescal Canyon to convey surface waters and well waters to the City area. The surface waters were from the Coldwater Canyon, Mayhew Canyon and as far south as Lake Elsinore. The well water was from deep wells constructed in Coldwater Canyon and Temescal Canyon. Later, deep wells in the City area were also developed.

In 1920, the Corona City Water Company (CCWC), a TWC subsidiary, was formed to distribute potable water within the City. Deep wells were developed in the Coldwater and Temescal Basins. Pressure pipelines were constructed with supply from wells and an open reservoir on Chase Drive east of Main Street. One of the major gravity pipelines in Temescal Canyon was also converted to this CCWC system. This gravity pipeline provided additional supply from the Coldwater Canyon. TWG continued to serve non-potable water to agricultural, mining, and industrial customers from the remaining portion of its water system not converted to the potable CCWC system.

From 1900 to 1950, the Corona area became a major citrus producer and mining center. Up until 1950, nearly 50 percent of the marketed lemons from California and Arizona were processed by one of the City's largest employers, the Exchange Lemon Products Company. Thus, the City of Corona acquired the distinction as the ~Lemon Capital of the World." The Corona area, with its natural mineral resources, also developed mining enterprises and ancillary industries.

In 1954, the Corona area was included in the formation of Western Municipal Water District (WMWD), which was subsequently annexed to the Metropolitan Water District of Southern California (MWD). Therefore, the Corona area became eligible for supplemental imported water initially from the Colorado River, and later the northern California State Water Project (SWP).

In 1964, the City purchased the assets of CCWC with a portion of the proceeds from a $4.25 million revenue bond issue, thereby creating the City of Corona Water Department as a self-sustaining, non-profit municipal utility. In 1966, the City constructed the Lester Water Treatment Plant with an initial capacity of 5 mgd and began receiving imported Colorado River water. Within five years the facility was upgraded to10 mgd. In 1977, the City issued a $6 million general obligation bond to finance the construction of storage reservoirs, well water blending facilities, and transmission pipelines. The most notable of these facilities was the Glen Ivy transmission pipeline in Temescal Canyon that replaced an old CCWC gravity pipeline constructed by TWC in 1894.

In the 1980's, the City's water system expanded phenomenally with the development of the Sierra

del Oro project, the acquisition of the Green River System from WMWD, the development of Assessment District 79-2, and Corona Ranch in the northeasterly portion of the City of Corona. Development slowed in the early to mid- 1990's and then exploded again in 1995 through the present. The last growth spurt occurred in the industrial areas, fill in growth in the northeast and northwest portions of the City, South Corona, and Temescal Canyon lands that annexed into the City (Eagle Glen).

The City of Corona Department of Water and Power, which changed its name from the Corona Utilities Department in 2002, provides service within the City and its sphere of influence (SOI) (Coronita, El Cerrito and portions of Temescal Canyon). Some areas within Corona sphere are served by other agencies. In the East Sphere, the City of Riverside and the Home Gardens County Water District provide water to the Home Garden area; the Western Municipal Water District (WMWD) serves the Eagle Valley area; and in the South Sphere, portions of the Temescal Canyon area are served by the Lee Lake Water District.

The City presently provides municipal water service to nearly 146,700 (This includes the City's sphere of influence) people through 40,000 domestic service connections to an area approximately 39 square miles in size. This area includes approximately 32 square miles within the City's municipal area, and 7 square miles within the City's Sphere Of Influence (SOI) in Riverside County. The City of Corona's water service area population, number of housing units and persons per household as of year 2003 is presented in Table 4, which is adopted from The City of Corona's 2005 Water Master Plan.

Climate

The climate in the area is typical of Southern California with generally mild temperatures, virtually no days below freezing, and approximately 330 days of sunshine per year. The average annual rainfall in the City is approximately 12.6 inches (www.worldclimate.com). 87.62% of the rainfall occurs through the months of November and April. Table 2 provides a summary of climate data for Corona. Figure 2-1 depicts the average historic rainfall for Riverside County for a period 1927 through 2005.

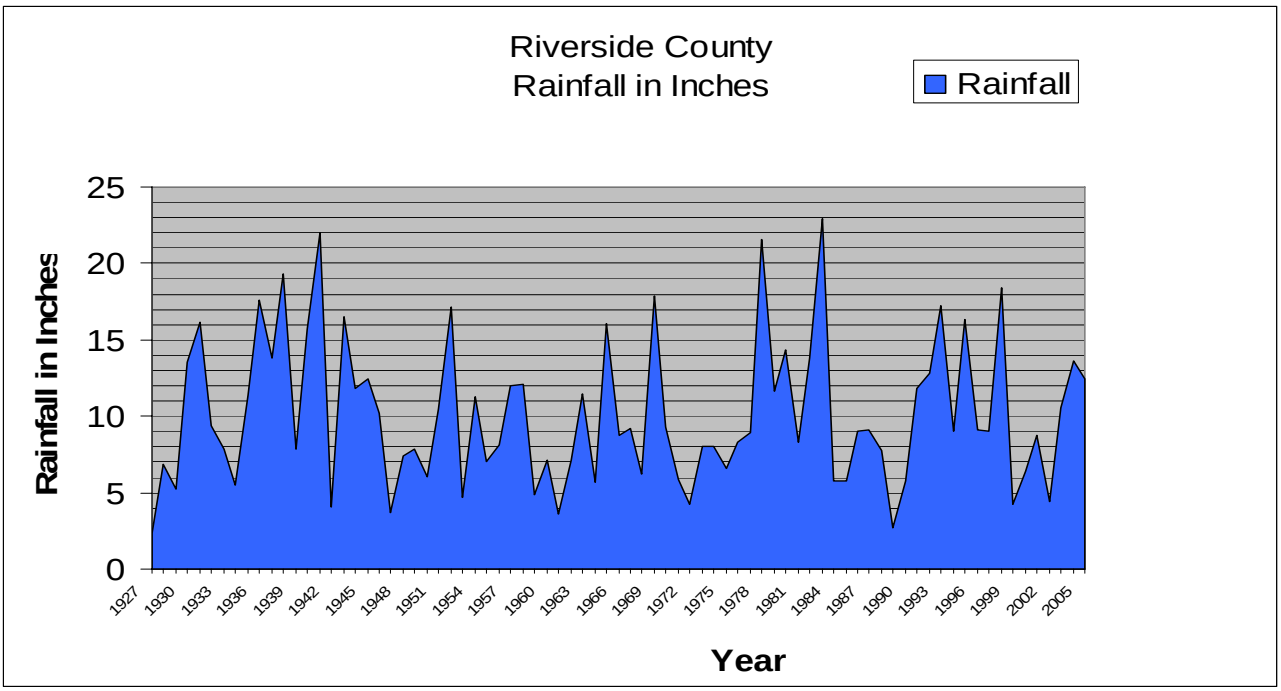
Table 2 Climate

	Jan	Feb	Mar	Apr	May	Jun
Standard Monthly Average Eto	2.94	2.91	4.16	5.27	5.94	6.56
Average Rain Fall (inches)	2.61	2.27	1.91	1.02	0.30	0.12
Average Temperature (Fahrenheit)	53.15	55.3	56.65	60.45	64.85	69.7

Table 2 Climate (Continued)

	July	Aug	Sep	Oct	Nov	Dec	Annual
Standard Monthly Average Eto	7.22	6.92	5.35	4.05	2.94	2.56	56.37
Average Rain Fall (inches)	0.12	0.20	0.39	0.40	1.47	1.76	12.6
Average Temperature (Fahrenheit)	75.1	75.45	72.85	66.45	58.85	53.75	63.55

Figure 2-1



Other Demographic Factors

[1]For generations, Southern California has grown outward along its transportation corridors. During each decade, the current outer ring of development has eventually become saturated. This has driven up its cost of living and level of congestion, pushing people and firms still farther out. At different times, this "spill over" process has made the San Fernando Valley and Orange County metaphors for Southern California's energy and growth.

Today, that mantle is falling on the Inland Empire with the City of Corona one of the prime beneficiaries. Thus, the city's demographic profile now shows a fast growing, relatively diverse place, where relatively young, well educated families are raising children, and succeeding economically.

From 1990-2005, Corona has added 68,331 people (90 %) to reach a population of 144,274 (not including the City's sphere of influence), a figure that tops all other comparable Inland Empire communities by 14,000 residents.

Corona's families benefit from better income and education. Corona's average household income exceeds $75,000 and 25% of all Corona Households have earnings in excess of $100,000. The 1990 Census showed that over half of Corona's residents have attended some college (52.6%), with 18.0% receiving bachelors or graduate degrees.

[1] City of Corona, Economic Development Department

Like most Southern California places, Corona is an ethnically diverse community. Its White population was estimated at 50% in 2004. Those who culturally consider themselves Hispanic represented 35.7%. Asian residents were approximately 8.1% of the population and the Black community constituted about 6.2%. The comparable estimates for Riverside County were: White (60%), Hispanics (30%), Asian (5%) and Black (5%).

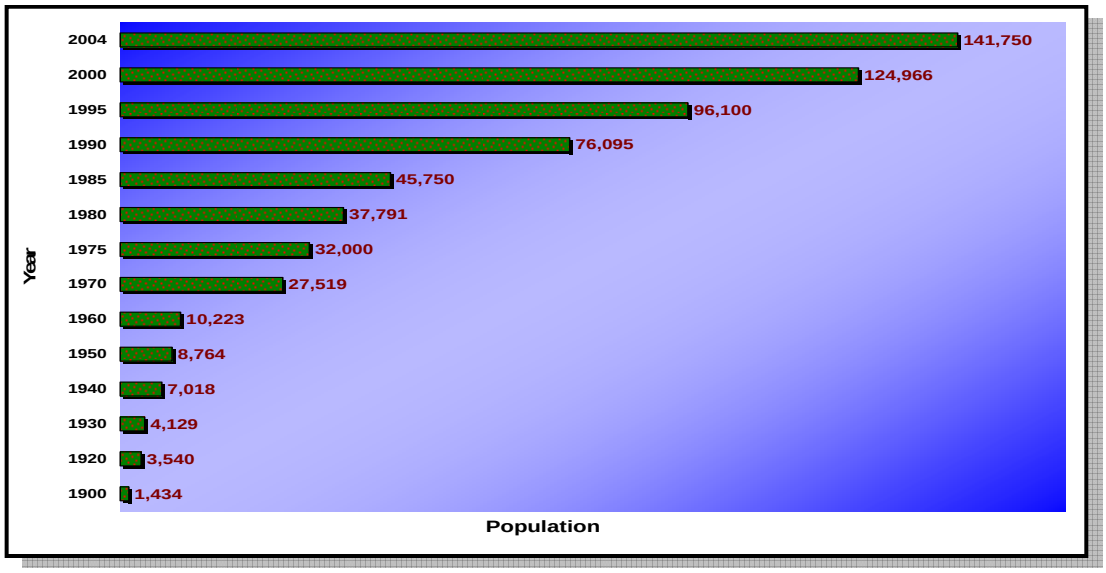
Recent changes in residential markets argue strongly that Corona's cycle of prosperity is shifting into a higher gear. The city's close proximity to Orange County and the extremely high price of residential real estate there are causing developers to undertake an increasing number of high-end projects in Corona. These developments are succeeding and can be expected to add families with higher incomes and educational levels into the city's demographic base.

Current and Projected Population

The City's population increased steadily from its inception in` 1896 until about 1960. This was followed by a sharp increase between 1960 and 1970, from a population of 10,223 to 27,519. From 1985 until the present, the population has more than tripled, increasing from 45,750 to 144,274. Figure 2-2 graphically depicts the population trends for the City of Corona dating back to the Cities inception.

Figure 2-2

City of Corona Population History

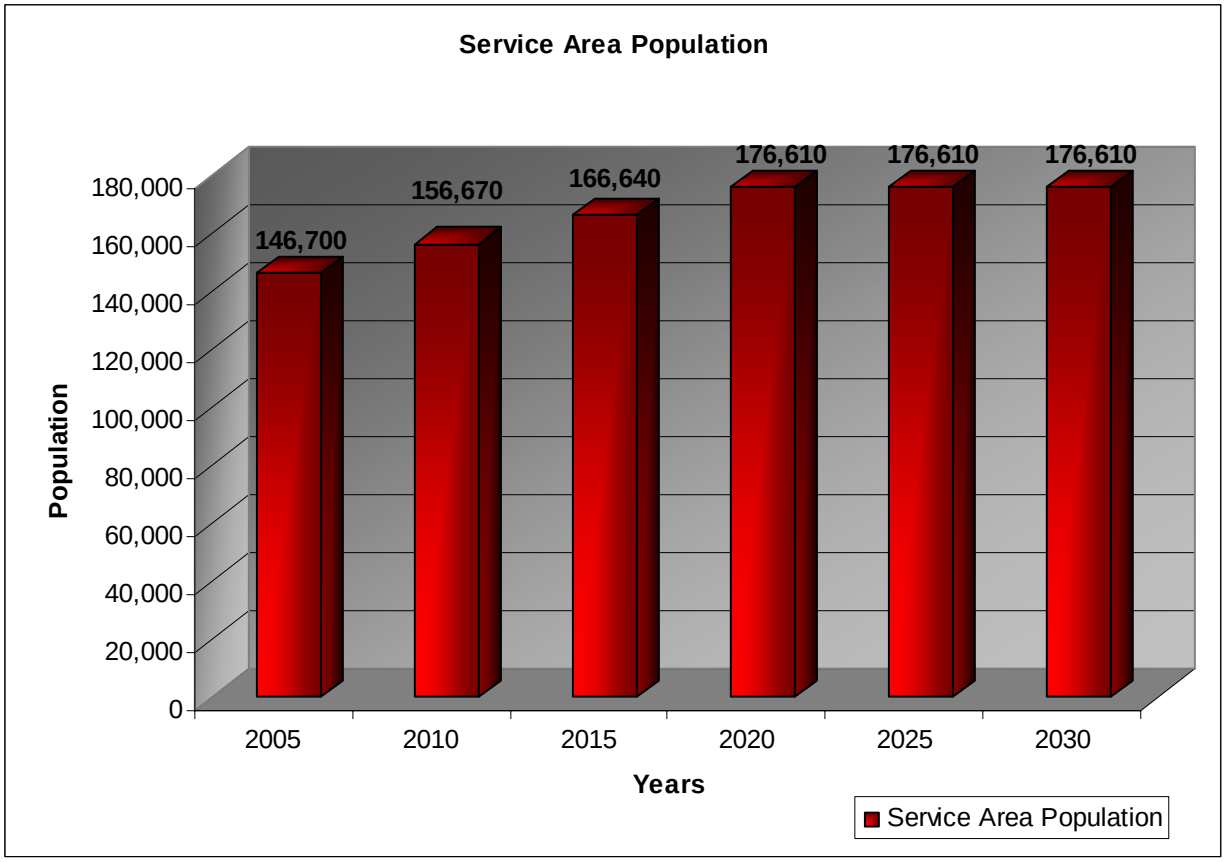


In January 2004, the California State Department of Finance estimated the total number of occupied housing units in Corona at 42,210. The estimated average number of persons per dwelling unit is 3.343 and the residential vacancy rate is 3.65 percent.

Table 3
Population - Current and Projected

	2005	2010	2015	2020	2025	2030
Service Area Population	146,700	156,670	166,640	176,610	176,610	176,610

Figure 2-3



The City's projected population within its service area, including its sphere of influence (SOI), is presented in Table 3 and graphically represented in Figure 2-3. The projected population within the water service area of the City of Corona is estimated to increase 20 percent until General Plan build-out in year 2020. Therefore, large increases in water demand for the City of Corona are anticipated in the future which are quantified and explained Section 3.

Table 4
City of Corona Water Service Area Population, Number of Housing Units, Persons Per Household, and City Area

Year	City Limits	County	Total Service Area-Population	No. Units	Population per Household[1]	Service Area
1900	1,434	_	_	_	_	19.14
1920	4,129	_	_	_	_	19.14
1940	8,756	_	_	_	_	19.14
1960	13,336	_	_	_	_	15.60
1970	27,519	2,800	30,319	_	_	23.20
1975	30,400	4,200	35,600	_	_	23.97
1980	37,400	7,010	44,410	14,638	3.15	23.91
1985	44,141	8,180	52,321	16,788	3.19	25.33
1990	76,095	9,400	85,495	29,365	3.13	28.01
1995	98,102	9,600	107,702	34,700	3.34	32.83
2000	122,989	9,700	132,689	42,352	3.38	35.00
2003	137,000[2]	9,700[2]	146,700[2]	46,147[2]	3.40[2]	39.00[2]

1. Adjusted for vacancy rate of occupied units.
2. Calculated values for 2003

Past Drought, Water Demand, and Conservation Information

The local region experienced a prolonged drought from 1987 through 1992. The City met its customers' needs through careful conjunctive management of groundwater and local reservoir supplies, and by investing in water conservation and water recycling. Community involvement made it possible to have voluntary rationing during 1987-89.

The citizens of Corona have a high commitment to quality of life and environmental issues and are active participants in resource and planning discussions held by City staff and the City Council. Water conservation is one of several high priority policies actively implemented in the City, and programs such as residential water audits, ultra-low flush toilet replacements, and landscape water audits are well accepted.

The character of residential developments changed in the early 1980s; community landscaping along with major roadways and common areas became prevalent as planners sought to create a community atmosphere with more open space. In 1986, with active community input and support, Corona adopted a General Plan Amendment for the then agricultural South Corona area that identified land use development standards and infrastructure needs. This change in the General Plan opened the door for the portion of the City called South Corona, the last large undeveloped area in Corona.

Section 3

Water Sources

SOURCES OF SUPPLY

The City of Corona's water system obtains potable water from two (2) sources. The primary source is groundwater pumped from the Temescal, Basin and the Bedford and Coldwater sub basins. The secondary source is imported water from MWD Colorado River and State Project Water on the Mills Pipeline from MWD's Henry J. Mills filtration plant, which is delivered to the City through three turnouts. The current and projected future supply is illustrated in Table 7 broken down by each supply source. For the past five years, the total supply has averaged 42,462 acre feet per year (AF/YR) with 43.12 percent (18,311 AF/YR) from the groundwater wells, 40.02 percent (16,992 AF/YR) from Colorado River, and 16.86 percent (7,159 AF/YR) from Mills Pipeline Connection. Table 5 and 7 illustrates City of Corona's Historic water production. The City's Master Plan Figure 4-2 depicts the existing water system's hydrolic profile and sources of supply. A copy of Figure 4-2 is included at the end of this section.

The City's municipal area and its Sphere of Influence overlie the Bedford, Coldwater, Temescal, Santa Ana Narrows, Lee Lake, Arlington and Chino groundwater basins. The City of Corona currently maintains and operates 21 groundwater production wells for its municipal potable water supply: 18 wells in the Temescal Basin, one, (currently inactive) well in the Bedford Sub Basin, and three wells in the Coldwater Sub Basin.

The groundwater basin and two sub basins from which the City extracts groundwater are not adjudicated. However, under a stipulated judgment entitled *Orange County Water District vs. City of Chino, et al.(1968),* the City, with other purveyors upstream of Prado Dam, have the right to use all surface and groundwater supplies originating above Prado Dam without interference from water purveyors downstream of Prado Dam, provided that the average adjusted base flow at Prado Dam is at least 42,000 acre-ft/yr. WMWD is one member of a watermaster panel that administers provisions of this judgment. To ensure provisions of the judgment, the City is required to provide a base flow of 1,625 acre-ft/yr (adjusted for water quality) from the City's WWTP.

Bedford Sub Basin

The Bedford Basin is located south of the Temescal Basin in Temescal Canyon between the Santa Ana Mountains and the El Sobrante Hills. The basin covers an area of approximately 10 square miles with an alluvial depth ranging from 30 to 200 feet. Groundwater within the basin tends to flow northwest into the Temescal Basin. The City has only one well (Well No. 4) in the Bedford Basin. Other major extractors from the basin have been Elsinore Valley Municipal Water District (EVMWD) and Foothill Properties. EVMWD extracted 616 acre-ft from four wells in 1993, and Foothill Properties extracted 887 acre-ft from three wells in 1993. Total extraction from the Bedford Basin has averaged approximately 2,255 acre-ft/yr since 1982 but has been inactive since the year 2000. The City of Corona has plans to redrill this source in 2006 for future use. Table 8 details the projected future amounts to be pumped.

Coldwater Sub Basin

The City acquired the rights to the surface flows of Coldwater Canyon in 1964 when it purchased

the assets of the Corona City Water Company (CCWC). To meet CDHS requirements, the surface flow is spread in percolation ponds and extracted by the City's three Glen Ivy area wells in the Coldwater Basin.

The Coldwater Basin is located southwest of the Bedford Basin and the Temescal Wash. The Basin encompasses an area of approximately 2.6 square miles and lies within the structural graben between the Santa Ana Mountains to the west and the El Sobrante Hills to the east. The Coldwater Basin is bound by the North Glen Ivy Fault to the northeast. The North Glen Ivy Fault behaves as an effective barrier to groundwater flow and prevents migration of groundwater from the Coldwater Basin into the Temescal Wash. Groundwater levels throughout the basin typically respond rapidly to precipitation and recharge because of the high permeability and limited groundwater storage within this Basin. Table 6 details the capacities, depth and location of the wells.

The City of Corona and EVMWD are the two major extractors of groundwater from the Coldwater Basin. The City currently operates three wells in the Coldwater Basin. In the past five years the city produced 3,999 AF/Y, 2,532 AF/Y, 2,579 AF/Y, 2,553 AF/Y and 2,780 AF/Y respectively. Historic groundwater production from each of these wells is summarized in Table 4 and table 7. Future production from the Coldwater basin is projected to remain static through the year 2030 which is detailed in Table 8.

Temescal Basin

The Temescal groundwater basin encompasses an area of approximately 26 square miles bound by the Santa Ana River, La Sierra Hills, El Sobrante Hills and the Santa Ana Mountains.

Typical depths for the City's wells in the Temescal Basin range from 180 to 480 feet. Groundwater quality of these wells typically does not meet the EPA and DHS MCL's for nitrate (45 mg/L). The shallow basin groundwater typically has high levels of nitrate (4.0 to 110 mg/L) which require treatment and/or blending to meet regulatory requirements. Table 6 details the capacities, depth and location of the wells.

Currently, 18 City of Corona wells with a combined capacity of approximately 23,405 gpm, extract groundwater from the Temescal Basin. In the past five years Corona has drilled and equipped Seven (7) new wells, 22, 23, 24, 25 and 26, 27, and 28 to supply water to the Temescal Basin Desalter. EVMWD, Corona has also produced from the Temescal Basin with combined extraction ranging from 3,275 to 5,259 AF/Y. Total Basin production for the past five years was 9,125 AF/Y, 10,568 AF/Y, 17,217 AF/Y, 17,463 AF/Y, 19,235 AF/Y respectively (Table 7). The City of corona plans to pump 29,765 AF/Y by year 2015 and will continue to pump that amount indefinitely (Table 8).

Santa Ana Narrows Basin

The Santa Ana Narrows Basin, bisected by the perennial Santa Ana River, lies south of the Chino Basin and west of the Temescal Basin. Wells drilled in the alluvium of the river are shallow, typically less than 100 feet. In the summer months, the river flow is primarily effluent discharge from the wastewater treatment plants located upstream. The water is characteristically high in nitrates and TDS. The City has one well (Well No. 18) in the Basin used solely for landscape irrigation. It has been shut down due to high operation and maintenance expense.

In the past five years the City of Corona has strived to increase the production of local water relative

to imported water. Table 8a details the percentage of total water supply that has been pumped over the last five years. In 2000 the local production of water from the all of the basins was 33.11%. Last year in 2004 groundwater accounted for 49.97% of total water supply, which is a 67.75% increase in local production. Looking forward, Corona plans to increase this figure to 59.22% in 2010 and ultimately pumping 65.87% of their water supply by year 2020 (Table 8b).

Figures 3-1 and 3-2 graphically depict the historic and future trends for groundwater and imported water respectively.

Table 5

Water Production and Purchases AF/Y

Source of Supply	Well #	1990	1995	2000	2001	2002	2003	2004
Coldwater Basin	1	1,062	1,685	-	0	0	0	0
	2	0	1,191	-	0	0	0	0
	3	1,024	1,391	506	4	0	256	380
	20	0	0	0	0	0	0	0
	21	-	-	3,493	2,528	2,579	2,297	2,400
	Subtotal	*2,086*	*4,267*	*3,999*	*2,532*	*2,579*	*2,553*	*2,780*
Temescal Basin	4	253	173	0	0	0	0	0
	6	535	588	436	314	27	0	0
	7	531	654	876	757	12	1,084	0
	7A	0	0	0	0	15	0	1,202
	8 & 8A	1,164	1,737	1,654	1,324	1,517	1,701	2,081
	9	650	467	554	602	14	1,779	2,480
	11	316	408	354	390	123	351	501
	12(A)	134	0	0	0	614	588	575
	13	886	0	0	0	0	170	231
	14	75	310	534	332	674	602	645
	15	761	1,150	1,633	849	870	769	1,480
	17(A)	1,059	1,349	959	68	954	1,413	454
	19	-	-	2,123	2,703	2,184	1,260	1,497
	22	0	0	0	1,248	4,465	3,404	2,885
	23				51		0	
	24	0	0	0	321	679	256	200
	25	0	0	0	897	3,686	1,982	2,386
	26	0	0	0	712	1,383	2,104	996
	27	0	0	0	0	0	0	253
	28	0	0	0	0	0	0	1,369
	Subtotal	*6,111*	*6,663*	*9,123*	*10,568*	*17,217*	*17,463*	*19,235*
MWD Colorado River	WR – 19	11,574	6,373	13,920	13,315	12,384	14,111	11,452
	WR – 29	451	463	0	0	0	0	0
	WR – 33	5,471	4,661	6,258	5,515	3,924	3,227	3,039
MWD State Water Project	WR – 24	-	3,797	6,334	6,771	7,593	6,685	7,549
MWD Combined	*Subtotal*	*17,496*	*15,294*	*26,512*	*25,601*	*23,901*	*24,023*	*22,040*
Total		**25,693**	**26,224**	**39,634**	**38,701**	**43,697**	**44,039**	**44,055**

Table 6
Maximum Water Production Capacity of Groundwater Wells

Well Identification				General Data						
Atlas Sheet	Facility Name	State Well No.	Service Address	Status	Well Head Elevation (ft)	Depth (ft)	Pump Depth (ft)	Well Basin	Year Drilled	Maximum Capacity (GPM)
S38	Well No. 3	T05S/R06W-03K01	9865 Glen Ivy Rd	Active	1138	543	370	Cold Water	1935	1060
Q26	Well No. 4	T04S/R06W-16C01	20310 Temescal Canyon Rd	Abandon	791	99	77	Bedford	1963	n/a
L18	Well No. 6	T03S/R06W-31D02	917 Circle City Dr	Abandon	681	217	167	Temescal	1950	n/a
L18	Well No. 7A	T03S/R06W-30N03S	907 Circle City Dr	Active	680	210	200	Temescal	2002	1000
L17	Well No. 8A	T03S/R07W-25J02S	219 S. Joy St	Active	647	210	200	Temescal	2002	1650
K17	Well No. 9A	T03S/R07W-25M03S	505 S. Vicentia	Active	691	250	240	Temescal	2002	1500
H16	Well No. 11	T03S/R07W-27G01	1865 W. Pomona Rd	Active	650	234	180	Temescal	1953	700
H16	Well No. 12A	T03S/R07W-27F02	519 Maple St	Active	661	250	180	Temescal	2002	1100
M19	Well No. 13	T03S/R06W-31K01	1018 Cottonwood Ct	Active	735	279	160	Temescal	1952	1000
I18	Well No. 14	T03S/R07W-35C01	1200 W. Tenth St	Active	728	515	210	Temescal	1936	1000
J16	Well No. 15	T03S/R07W-26G01	102 N. Lincoln Ave	Active	640	220	120	Temescal	1946 *(Rehab in 1998)*	1100
H16	Well No. 16	T03S/R07W-27A01	1865 Pomona Rd	Inactive	650	850	777	Temescal	1982	n/a
M17	Well No. 17A	T03S/R06W-25J03S	1052 Quarry St	Active	648	204	150	Temescal	2002	1400
B15	Well No. 18	T03S/R07W-30F01	34 Crestridge Lane	Inactive	435	77	65	Santa Ana Narr.	1984	n/a
K16	Well No. 19	T03S/R07W-25L01	219 W. Grand Blvd	Active	630	265	200	Temescal	1990	2100
T39	Well No. 20	T05S/R06W-11D01S	25225 Maitri Rd	Active	1150	660	460	Cold Water	1998	2500
S38	Well No. 21	T05S/R06W-03J05S	24650 Glen Ivy Rd	Active	1128	660	460	Cold Water	1998	2250
J17	Well No. 22	T03S/R07W-26J03S	405 Sierra Vista St	Active	660	410	370	Temescal	1998	3500
K17	Well No. 23	T03S/R07W-25L02S	315 Merrill St	Active	645	560	425	Temescal	1998	800
K16	Well No. 24	T03S/R07W-25K02S	204 Washburn Cir	Active	640	470	425	Temescal	1998	455
K16	Well No. 25	T03S/R07W-25E02S	310 Vicentia	Active	648	210	180	Temescal	1999	3500
K15	Well No. 26	T03S/R07W-25C03S	710 McGrath Cir	Active	578	452	410	Temescal	1999	1000
H21	Well No. 27	T04S/R07W-01A01S	2621 Mangular	Active	954	545	480	Temescal	1980	500
K16	Well No. 28	T03S/R07W-26K S	202 Buena Vista Ave	Active	610	190	170	Temescal	2003	2000

Table 7 Current and Planned Water Supplies -AF/Y						
Water Supply Sources	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Western Municipal Watet District						
Metropolitan Water District (Colorado River)	32,598	32,598	32,598	32,598	32,598	32,598
Metropolitan Water District (State Water Project)	7,281	7,281	7,281	7,281	7,281	7,281
Metropolitan Water District (Total)	39,879	39,879	39,879	39,879	39,879	39,879
Groundwater						
Coldwater Basin	2,780	2,780	2,780	2,780	2,780	2,780
Temescal Basin	39,208	44,473	49,737	49,737	49,737	49,737
Bedford Basin	0	0	0	0	0	0
Groundwater Total	41,988	47,253	52,517	52,517	52,517	52,517
Recycled Water						
Wastewater Treatment	1,120	7,842	12,322	12,322	12,322	12,322
Desalination						
Totals	82,987	94,974	104,718	104,718	104,718	104,718

Table 8a Amount of Groundwater Pumped (AF/Y)					
Basin	**2000**	**2001**	**2002**	**2003**	**2004**
Coldwater Basin	3,999	2,532	2,579	2,553	2,780
Temescal Basin	9,125	10,568	17,217	17,463	19,235
Bedford Basin	0	0	0	0	0
% of Total Water Supply	33.11%	33.85%	45.30%	45.45%	49.97%

Table 8b Amount of Groundwater Projected to Be Pumped (AF/Y)					
Basin	**2010**	**2015**	**2020**	**2025**	**2030**
Coldwater Basin	2,780	2,780	2,780	2,780	2,780
Temescal Basin	24,500	29,765	29,765	29,765	29,765
Bedford Basin	0	0	0	0	0
% of Total Water Supply	59.22%	68.18%	65.87%	65.87%	65.87%

Figure 3-1

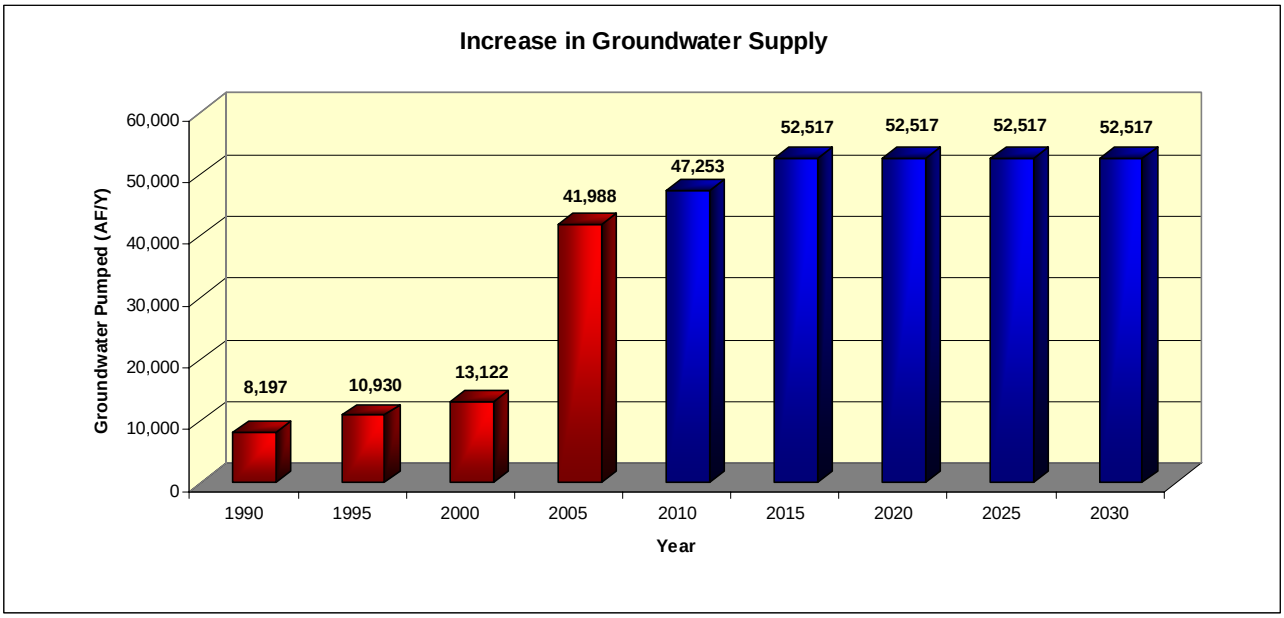
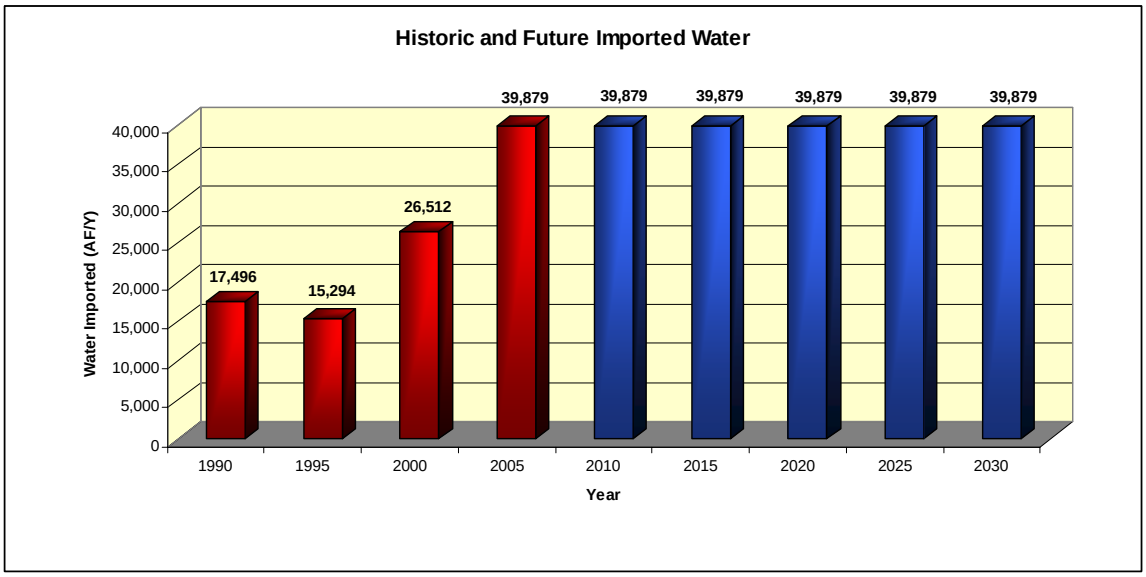


Figure 3-2



Section 4

Reliability

Law

Water Code section 10631: (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortages, to the extent practicable, and provide data for each of the following:

(1) An average dry water year.
(2) A single dry water year
(3) Multiple dry water years.

Normal Year is a year in the historical sequence that most closely represents median runoff levels and patterns.

Single Dry-Year is generally considered to be the lowest annual runoff for a watershed since the water-year beginning in 1903.

Multiple-dry-water years is generally considered to be the lowest average runoff for a consecutive multiple year period (usually three years or more) for a water shed since 1903.

Supply and Demand Comparison

Table 9 compares current and projected water supply and demand. It indicates that in average precipitation years, the City of Corona has sufficient water to meet its customer's needs through the year 2030. This was achieved through a commitment to conservation programs and additional development to utilize local groundwater.

Table 9
Projected and Current Supply and Demand Projections (AF/Y)

	2005	2010	2015	2020	2025	2030
Supply Totals	82,987	94,974	104,718	104,718	104,718	104,718
Demand Totals	44,055	46,470	47,939	49,408	49,408	49,408
Differential	38,932	48,504	56,779	55,310	55,310	55,310

Corona's diversification of water supplies has resulted in ample capacity to meet its customer's demands. This became evident in the past seven years by the development of the Temescal Basin Desalter, and (5) five new wells and (8) rehabilitated wells in the Temescal Basin. As a result, Corona will be in a position to manage its water supplies to match specific basin responses to both wet and dry years. Operating costs will be minimized by utilizing lower cost supplies such as local ground water.

Inconsistent Water Sources

The Coldwater Basin may be considered inconsistent. The Coldwater basin is quite small and easily filled in years of average and above average rainfall. When the basin fills, its high quality water overtops natural barriers causing water to flow out into the Temescal Basin where it combines with lower quality groundwater. Corona's new wells allow increased production to capture the

basin's high quality water before it is lost to the Temescal Basin. The size of the basin is such that Corona does have to moderate and reduce pumping to ensure safe production during drought years. It is not anticipated that Corona will have to completely cease production for the purpose of drought years in the future.

Four Year Minimum Water Supply

The diversity of Corona's water supply placed the city in an excellent position for the last four years and continues to do so into the future. Table 10 details the past four years of water supply. It is made evident here that even in the driest year of 2002, supply was only 97.37% of normal (2003). It was the addition of new wells in the Temescal Basin and Desalter that enabled Corona to maintain the integrity of their water supply even through very dry drought years of less than 5 inches of rain. Looking ahead to the future, the City of Corona has ample supply to meet all projected demands by more than a factor of 2, through year 2030. (Table 9)

Table 10
Supply Reliability (AF/Y)

		Multiple Dry Water Year			
Normal Water Year 2003	**Single Dry Water Year 2002**	**Year 1 2001**	**Year 2 2002**	**Year 3 2003**	**Year 4 2004**
72,143	70,249	68,355	70,249	72,143	81,867
% of Normal	97.37%	94.75%	97.37%	100.00%	113.48%

Reliability

Corona recognized that while the cost of demand management and supply augmentation are high, it needed to develop additional supply capacity to offset supply interruption from maintenance, equipment failures, natural disasters, drought, etc. Corona's local water is lower in cost compared to MWD Colorado River water and State Project Water, $100 to $200 per acre foot compared to $435 per acre foot. As a result, Corona has gone to great lengths to improve the capacity of the local supply over the past decade with updating the water master plan, implementing capital improvement and replacement projects, updating the water utility rates and continued planning. These efforts have enabled the city to be adequately prepared to accommodate a 100% raise in water demand in the years to come, (see Table 9 differential row).

Corona can provide adequate water supply during times of inconsistent supply from certain sources and is protected against factors resulting in inconsistency of supply. Table 11 shows many factors that affect a water agency's supply. The only factor effecting Corona is climatic factors. The City does not anticipate any of the other factors listed below having impact on their supply in the future.

Table 11
Factors Resulting in Inconsistency of Supply

Name of Supply	Legal	Environmental	Water Quality	Climate
Groundwater Wells				**x**
WMWD				**x**

Future Water System

Figure 7-2 from the City's Water Master Plan depicts the City's future water system's hydraulic profile and supply sources. A copy of Figure 7-2 is included at the end of this section.

Section 5

Transfer and Exchange Opportunities

Law

10631. A plan shall be adopted in accordance to this chapter and shall do all of the following.

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

The Water Code definition of short and long-term is that short-term is for a period of one year or less and long-term is for a period of one year or more.

Water Transfers

The City of Corona has three inter ties with other agencies: City of Riverside, City of Norco, and Lee Lake Water District. The inter tie with Riverside is for emergency use of up to 2 mgd from Riverside to Corona by gravity flow. Riverside's system hydraulic grade line is higher than Corona's and pumping will be required if Riverside need emergency flows from Corona. The inter tie with Norco is to wheel up to 4,000 gallons per minute (5.76 mgd) to Norco from Western Municipal Water District (WMWD). Norco's system does not have capacity to deliver any significant volume of water to Corona. The inter tie with Lake Lee Water District is used for normal delivery of water to a small number of homes and businesses near Wierick Road along the 15 freeway corridor about 5 miles south of the 91 freeway.

There are no long – term transfer or exchange opportunities at this time. Corona is working on two short term projects for transfer or exchange of water.

Corona has been working with Elsinore Valley Municipal Water District (EVMWD) to develop a program of water sales, transfers, and exchanges. The proposal provides transfer of water from EVMWDC to CCDWP from the Meeks & Daly well fields near the Colton and Bunker Hill Basins to Corona via the Riverside and Gage Canals. Corona would treat the water at the Lester Water Treatment Plant using a combination of membrane technology and activated carbon. Corona proposes to purchase up to 5,000 AF/Y of treated product water capacity; the balance of production would be used by Corona and EVMWD for recharge of the Coldwater Basin and potable water in EVMWD's domestic water system. This project would provide a long term offset of Corona and EVMWD's demand on potable water.

Corona has met with the Santa Ana Watershed Project Authority (SAWPA) on participating in the Integrated Chino – Arlington Desalter System Project (ICADSP) to purchase water when the project is implemented. SAWPA has hired RFB Consulting to develop the project and determine ultimate water costs. It is estimated that up to 2,500 AF/Y may be available for transfer once the ICADSP is completed.

In addition, Western Municipal Water District (WMWD) is working on developing the Riverside – Corona Feeder Project to capture and store new water in wet years in order to increase firm water supplies, reduce water costs, and improve water quality in the WMWD service area, which includes the City of Corona. The project will include about 20 wells and 28 miles of pipeline. It is estimated that approximately 18,000 AF/Y of stored groundwater from San Bernardino Valley groundwater basins may be available for transfer once the Riverside – Corona Feeder Project is completed.

Table 12 summarizes the type of opportunity, duration and proposed quantities for Corona's current transfer and exchange relationships and proposed relationships.

Table 12
Transfer and Exchange Opportunities

Agency	Transfer or Exchange	Short Term	Proposed Quanities (AF/Y)
The City of Riverside	Transfer	X	2,210
The City of Norco	Transfer	X	6,452
Lee Lake Water District	Transfer	X	N/A
EVMWD	Transfer	X	5,000
WMWD	Transfer	X	18,000
SAWPA	Transfer	X	2500
Totals:			**34,162**

Section 6

Water Use

Law

10631. (e) (1) Quantify to the extent records are available, past and current use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to the following uses:

- *(a) Single-family residential*
- *(b) Multifamily*
- *(c) Commercial*
- *(d) Industrial*
- *(e) Institutional/governmental*
- *(f) Landscape*
- *(g) Sales to other agencies*
- *(h) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof*

(2) Agricultural

(3) *The water use projections shall be in the same five year increments described in subdivision (a)*

Current and Projected Water Use

The City of Corona has a wide array of water users. Total current use is 44,055 AF/Y. This is up from 2000 usage figure of 39,634. Ultimately the city plans on having usage of 49,408 AF/Y by the year 2020 (projected city build out). Corona classifies their water users by sectors: residential single-family, residential multi-family, commercial, industrial, institutional/governmental, landscape and agricultural. Current and future water use as well as number of customers, is broken down by customer class identified in Table 13. The City's existing land use is depicted in Figure 3-2 from the City's Water Master Plan. A copy of Figure 3-2 is included at the end of this section.

Table 13
The City of Corona Water Use (AF/Y)

Year	Water Use Sectors	Single Family	Multi-family	Commercial	Industrial	Special Acct	Institutional/ Governmental	Landscape	Agricultural	Total
2000	# of accounts	33,616	1,355	792	792	3	99	583	35	37,275
	Deliveries AF/Y	22,863	3,405	4,122	4,122	666	817	3,230	480	39,637
	# of accounts									
	Deliveries AF/Y									
2005	# of accounts	38,164	1,538	899	899	3	112	662	40	42,319
	Deliveries AF/Y	25,956	3,866	4,680	4,680	756	927	3,668	545	45,000
	# of accounts									
	Deliveries AF/Y									
2010	# of accounts	42,593	3,213	339	631	3	10	485	34	47,308
	Deliveries AF/Y	28,968	8,072	1,766	3,282	740	79	2,686	468	46,062
	# of accounts									
	Deliveries AF/Y									
2015	# of accounts	44,140	3,329	352	654	3	10	502	35	49,026
	Deliveries AF/Y	30,020	8,366	1,831	3,401	767	82	2,783	485	47,735
	# of accounts									
	Deliveries AF/Y									
2020	# of accounts	47,743	3,601	380	707	4	11	543	38	53,028
	Deliveries AF/Y	32,471	9,048	1,980	3,679	830	89	3,010	524	51,631
	# of accounts									
	Deliveries AF/Y									
2025	# of accounts	47,743	3,601	380	707	4	11	543	38	53,028
	Deliveries AF/Y	32,471	9,048	1,980	3,679	830	89	3,010	524	51,631
	# of accounts									
	Deliveries AF/Y									
2030	# of accounts	47,743	3,601	380	707	4	11	543	38	53,027
	Deliveries AF/Y	32,471	9,048	1,980	3,679	830	89	3,010	524	51,631
	# of accounts									
	Deliveries AF/Y									

Residential – Single-Family

In the City of Corona, it is estimated that a single family residential customer averages 3.5 persons per connection. Corona is a suburban community with approximately 30% of its acreage comprised of residential use. Total system consumption for this sector was 22,863 in 2000. Current consumption levels are at 25,956 AF/Y and are expected to ultimately increase 25% by year 2020 to 32,471 AF/Y.

Although the Single-Family Residential sector is expected to experience growth over the next 15 years, the City of Corona has implemented a water use efficiency program to offset increasing water demands. The program strives to increase water use efficiency by supporting water use surveys for residential and public facilities, ultra low flush toilet replacement, and educational/informational programs. The Cities efforts will help to offset the increasing water demands over the next 15 years.

Residential – Multi-Family

Multi-family residential customers average 3.35 persons per household. Like the single-family residential sector multi-family will experience much growth over the next 15 years. Currently the sector has 1,538 connections and is expected to rise 134% to 3,601 connections at city build out in 2020. Currently the multi-family residential sector is using 3,866 AF/Y and is expected to increase to a total sector usage of 9,048 AF/Y by year 2020.

Commercial Sector

The City has a large mix of commercial customers. Corona further breaks this sector down into 3 sub-categories; general commercial, office professional, and downtown commercial. General commercial accommodates many commercial uses that service the community such as department stores, banks, supermarkets and retail stores. Office professional encompasses general business offices, finance, insurance, and real estate offices and medical offices. Downtown commercial is intended to create a pedestrian oriented street environment with such uses as retail shops, offices, services, cultural facilities, entertainment, and civic and public uses.

The current water use has grown 13.5% since the year 2000 to 4,680 AF/Y and will ultimately grow to 5,380 AF/Y in the year 2020. This growth is driven buy the demand for services with an increasing permanent population.

Industrial Sector

Corona has a large industrial base that is centered on high-tech and manufacturing uses. The industrial sector has seen much growth since 2000. The current usage for the sector is 4,680 which is a 13.5% increase from 2000 usage.

Institutional/Governmental

The City has a stable institutional and government sector, primarily local government, schools, visitor services, and a public hospital. This sector will keep pace with the growth of the city.

Landscape

Landscape sector is expected to grow with the growth of the city, fueled mainly by residential development. Increased efficiency and landscape conversions at existing parks, golf courses, and cemeteries should help offset new demand resulting from projected increases in this sector.

Agriculture

Agricultural water demand is projected to have no growth and is expected to decline over the next 20 years. The City's General Plan reflects local citizen interest in local space, quality of life, environmental values, and the long-term maintenance of a diverse economic base. Although the residents share these concerns, it is projected that most agricultural land will eventually be converted to urban use.

Section 7

Demand Management Measures

Law

10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement, including, but not limited to, all of the following:

(1) Water survey programs for single-family residential and multi-family residential customers.

(2) Residential plumbing retrofit.

(3) System water audits, leak protection and repair.

(4) Metering with commodity rates for all new connections and retrofit of existing connections.

(5) Large landscape conservation programs and incentives.

(6) High efficiency washing machine rebate programs.

(7) Public information programs.

(8) School education programs.

(9) Conservation programs for commercial, industrial, and institutional accounts.

(10) Wholesale agency programs.

(11) Conservation pricing.

(12) Water conservation coordinator.

(13) Water waste prohibition

(14) Residential ultra-low-flush toilet replacement program.

The City of Corona is committed to implementing water conservation and water recycling programs. This section discusses water conservation.

The City of Corona is a signatory to the Memorandum of Understanding regarding the Urban Water Conservation in California (MOU) and is therefore a member of the California Urban Water Council (CUWCC). The City became a signatory to the MOU on March 3, 1996 and must submit bi-annual reports to the CUWCC outlining progress towards implementing the 14 Best Management Practices (BMPs) in the MOU. BMPs are conservation practices that have been identified by the CUWWC: conferences, BMP workshops, free publications, research regarding water management practices, leadership on water legislation and networking with other agencies and special interest groups.

For the purpose of responding to the Urban Water Management Planning Act the city will address the 14 Best Management Practices. The City, has in good faith, tried to address and comply with all of the BMP targets listed in the CUWCC MOU except where mentioned below. BMP No, 10 applies only to wholesale agencies and is not reported in this plan.

See section 12 for DMM Implementation.

Agricultural Water Conservation

Due to the fact that the City of Corona has 35 agricultural water accounts, it participates in several regional agricultural water conservation programs. Corona works closely with the Riverside-Corona Resource Conservation District, the local mobile lab, to offer free landscape evaluations to encourage more water use efficiency. A portion of Corona's customers participate in Metropolitan Water District of Southern California's agricultural subsidy program where customers purchase water at reduced costs.

Section 8

Demand Management Measures Not Implemented

The City of Corona is currently implementing all relevant BMP's listed in section 7, except where noted. BMP No.10 is not implemented due to the fact it applies only to wholesale agencies and this BMP is not relevant to the City of Corona.

Section 9

Planned Water Supply Projects and Programs

The City of Corona existing supply capacity is adequate to satisfy current and future demands (See section 3). Even with Corona's current supply reliability the City has taken steps to further strengthen the integrity of their water supply. Two water supply projects are to be completed in the future to achieve this. The Rincon and El Sobrante Ground water treatment projects have been planned out adding almost 11,000 AF/Y to the current system.

The Rincon Ground Water Treatment Project

The Rincon project is to be completed in the fiscal year of 2008-2009 at a total cost of $12,330,000 in current dollars and $14,100,000 in future dollars. The proposed location is in the vicinity of Rincon St. and Alcoa. The project will yield 4.7 MGD or 5,265 AF/Y to the current system. The specific components of the project are 3 new wells, a raw water pipeline, a treatment process which will be selective resins or best available technology (BAT), a 6,500 sq. ft. building to house the process, a product pipeline, property acquisition, and a brine disposal pipeline.

The El Sobrante Ground Water Treatment Project

The El Sobrante project is to be completed in the fiscal year of 2014-2015 at a total cost of $9,700,000 in current dollars and $13,200,000 in future dollars. The proposed location is in the vicinity of Sixth St. and El Sobrante. The project will yield 4.7 MGD or 5,265 AF/Y to the current system. The specific components of the project are 3 new wells, a raw water pipeline, a treatment process which will be selective resins or best available technology (BAT), a 6,500 sq. ft. building to house the process, a product pipeline, property acquisition, and a brine disposal pipeline.

Table 17
Future Water Supply Projects

			Multiple-Dry AF years to Agency		
Project Name	**Normal -year AF to agency**	**Single-dry AF/Year to agency**	**Year 1**	**Year 2**	**Year 3**
Rincon Ground Water Treatment Project	5,265	5,265	5,265	5,265	5,265
El Sobrante Ground Water Treatment Project	5,265	5,265	5,265	5,265	5,265

The above table shows the contribution that the two projects individually make to the Cities system. In all scenarios the values are the same due to the fact that Corona does not anticipate any variations in the plants output. In addition, it is expected that the two plants will be continuously running and will only cease production for short periods of maintenance.

Section 10

Development of Desalinated Water

Temescal Desalter

Corona developed its Temescal Basin Desalter project to offset demand on MWD's imported water supplies. Construction on the desalter was completed in 2001. The Desalter has increased supply reliability, controlled costs and made better use of scarce resources. At first the Temescal Desalter was producing 11,202.20 AF/Y and served to reduce nitrate and TDS levels in local groundwater to meet drinking water quality standards (nitrate) and wastewater discharge standard (TDS). A second phase of the project Contributed an additional 5,600 AF/Y for a total of 16,803 AF/Y (see Table 18).

Table 18
Continuing Opportunities for Desalinated Water

Sources of Water	Yield AF/Y	Start Date	Type of Use
Temescal Desalter	16,803	2001	Potable Water

The Temescal Desalter was the City of Corona's only opportunity for desalinated water. The City does not have future opportunities or needs.

Section 11

Current or Projected Supply Include Whole Sale Water

The City of Corona receives water from the Western Municipal Water District (WMWD) who is a member of Metropolitan Water District. The City of Corona has been purchasing on average 25,000 AF/Y for the past several years and plans to continue to do so. WMWD provides the City of Corona water through two sources, the Mills Pipeline and raw water from the Sierra Del Oro and Lester Water Treatment Plants. The Mills pipeline is already treated water and is sent directly to the City's system. The Sierra Del Oro and Lester Plant Water is raw water and is sent to the City's plant for treatment. The City of Corona does not anticipate a change in the water quantities that they purchase from WMWD now or in the future.

Below is Table 19 which details the source of water and the future total quantities expected to be purchased by Corona. Table 20 details the break down of the water sources from WMWD to Corona with their relative prospective quantities.

Table 19
Agency demand projections of wholesale supply (AF/Y)

Wholesaler	2010	2015	2020	2025	2030
Metropolitan Water District	24,660	27,292	28,111	28,954	29,823

Table 20
Existing and Planned Sources of Water Available (AF/Y)

Wholesaler Sources	2010		2015		2020		2025		2030	
	Source Capacity	Planned Use	Source Capacity	Planned Use	Source Capacity	Planned Use	Source Capacity	Planned Use	Source Capacity	Planned Use
Mills Pipeline	7,278	1,120	7,278	1,120	7,278	1,120	7,278	1,120	7,278	1,120
Sierra Del Oro and Lester Water Treatment Plant	32,585	23,540	32,585	26,172	32,585	26,991	32,585	27,834	32,585	28,703

Section 12

Determination of DMM Implementation

The following pages are the City's 2004-1999 CUWCC BMP Reports

Section 13

Water Shortage Contingency Plan

Law

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

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

Water Shortage Emergency Response

The City of Corona has invested a considerable effort and capital in developing a diverse water supply to ensure redundancy and flexibility in dealing with interruption of its water supplies. However, the City's Multi-Function Hazard Plan needs to be revised to include a water supply and distribution element that is consistent with the guidelines of the California State Office of Emergency Services.

Supplemental Water Supplies

To offset future potential water shortages due to drought or disaster, the City has developed multiple water supplies.

Desalination

The City constructed its Temescal Basin Desalter as a cost effective water supply; it became operational in March 2001. An additional benefit is that the Desalter helps mitigate water shortage during times of drought and emergencies.

Water Transfers

See the Transfer or Exchange Opportunities, Section 5.

Long Term Additional Water Supply Options

See the Transfer or Exchange Opportunities, Section 5.

Water Shortage Contingency Ordinance/Resolution

Law

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

City of Corona Water Shortage Response

As mentioned earlier, the City adopted a resolution adopting a program of voluntary reduction of nonessential uses of water to reduce consumption by 15% in 1991 (Appendix C). The City also implemented penalty rates during a water shortage emergency. The City adopted these resolutions in 1995 and revised them in 1997 and should be applied during declared water shortages (Appendix D).

Stages of Action

Law

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

Rationing Stages and Reduction Goals

The City of Corona currently has voluntary reduction goals in place. However, the City relies on approximately 50% imported water from the Metropolitan Water District (MWD) and therefore refers to MWD's Water Surplus and Drought Management Plan.

This plan is a comprehensive drought and water management plan designed to protect Southern California from water shortages for the next 10 years. This plan was adopted by MWD on April 13, 1999. The Water Surplus and Drought Management Plan is the result of 18 months of intensive collaboration between Metropolitan, its 27 member agencies, and retail agencies, and demonstrates a commitment to regional supply reliability.

Developed as part of Metropolitan's Integrated Resources Plan (lRP), the new program establishes management principles ensuring water supplies to Southern California residents and businesses 100 percent of the time through 2025.

The plan describes shortage conditions in escalating intensity - shortage, severe shortage and extreme shortage. In the early stages of a drought, sufficient water supplies would allow Metropolitan to meet full service demands and make partial or full deliveries to interruptible programs, sometimes using stored water. A severe shortage condition would reflect insufficient supplies, obliging Metropolitan to make withdrawals from storage, call on its water transfers, and possibly invite voluntary conservation through public outreach.

Under extreme shortage conditions, Metropolitan would allocate imported water supplies to its member agencies based on the type of shortage, monthly delivery requirements, and availability of supplies. Although hydrology studies indicate Metropolitan will not need to allocate water over the next 10 years, it is MWD's responsibility to be prepared in the unlikely event of a drought more severe than what we've experienced in the past.

The new plan refrains from spelling out an exact allocation methodology, but rather provides principles for the development of a strategy should the need arise.

Prohibitions, Consumption Reduction Methods and Penalties

Law

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

The City of Corona currently has adopted penalty rates to be implemented during water shortages or times of drought. The City currently relies heavily on water use efficiency programs and the development of local resource programs to reduce the need for imported water and to offset the increase in demand due to growth. The City relies on MWD's Water Surplus Water Management Plan to secure water reliability during drought and water emergencies. The City also has a recycled water system to help offset demand due to growth.

Revenue and Expenditure Impacts and Measures of Outcome Impacts

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (1'), inclusive, on the revenues and expenditures of the urban water supplier...
>
> 10632 (g)
> n analysis of the impacts of each of the] proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

The City has developed a financial plan for its water utility that sets rates to fund operation, maintenance and depreciation. Funds are set aside for depreciation in the Water Capital Replacement Fund and used to replace and update equipment and technology to improve system redundancy, source of supply and reduce operating costs. The City's Department of Water & Power has set a goal of maintaining operating reserves, the Water Utility Fund balance, equal to seven months operating expense for the entire utility. The City has not created a formal rate-stabilization fund.

Reduction Measuring Mechanism

Law

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

Mechanism to Determine Reductions in Water Use

The City of Corona does not currently have a water shortage contingency analysis.

Section 14

Recycled Water Plan

Recycled Water

The City of Corona owns and operates three wastewater treatment facilities. Wastewater Treatment Plant # 1 was originally built in 1968 and was expanded and upgraded in 1998 to meet new stringent environmental standards. The plant currently has a total of 9 MGD or 10,082 AF/Y of Title 22 disinfected tertiary effluent, and 2.5 MGD of secondary effluent. Wastewater Treatment Plant # 2 discharges secondary effluent to percolation ponds and has not been upgraded at this time. The plant discharges 3 MGD or 3,360 AF/Y. The City may consider upgrading Wastewater Treatment Plant # 2 to Title 22 effluent standards in the future. Wastewater Treatment Plant # 3 has a total of 1 MGD or 1,120 AF/Y of Title 22 disinfected tertiary effluent water for irrigation purposes but will eventually add the capacity for three times that amount.

The City currently has the capacity to supply 1,350 AF/Y of disinfected tertiary Title 22 water as recycled waster for appropriate uses by customers and for use by the city it self. The recycled water quality is excellent. The city supplies Title 22 effluent to a 64-acre park north east of Wastewater Treatment Plant # 1. The City adopted their Recycling Water Master Plan in 2001 and is still current. The Recycled Water Master Plan is scheduled for updating in 2006. During the preparation of this master plan, a marketing survey was conducted which identified potential future users to include, schools, landscape management districts, parks, golf courses etc. Use of recycled water was well received in the community. The survey also concluded that there are agricultural, commercial landscapes, and industrial customers that would like to convert a portion of their water use to recycled water when it becomes available.

Furthermore, the City has also participated in the Southern California Comprehensive Water Reclamation and Reuse Study sponsored by the United States Bureau of Reclamation in conjunction with the Santa Ana Watershed Project Authority, which is examining region wide wastewater facilities, infrastructure and capacities.

Section 15

Water Quality Impacts on Reliability

General

The quality of water served by the City of Corona has to be in compliance with the Federal standards as well as the State of California Department of Health Services (CDHS) standards as set forth in Title 22 of the California Code of Regulations. These standards set the maximum contaminant levels (MCL) of constituents allowed in drinking water. In addition to the Federal and State standards, provisions of the California Health and Safety Code specify that larger (>10,000 service connections) water utilities identify water quality measurements that exceeded any state Public Health Goals (PHGs).

Constituents of Concern

The following constituents of concern have been detected in the City's water system:

Trichloroethylene (TCE). The PHG for TCE is 0.8 ppb. The Federal maximum contaminant level (MCL) or drinking water standard for TCE is 5 ppb. The City has detected TCE in 9 of 21 wells at a level of 2 ppb in Well #7A, 3 ppb in Well #8A, 1.2 ppb in Well #9A, 4.1 ppb in Well #15, 2.5 ppb in Well #17A, 3.3 ppb in Well #19, 2 ppb in Well #22, 0.95 ppb in Well #24 and 3.1 ppb in Well #25. The levels detected were below the MCLs at all times.

Tetrachloroethylene (PCE). The PHG for PCE is 0.06 ppb. The MCL or drinking water standard for PCE is 5 ppb. The City has detected PCE in 1 of 21 wells, Well #19, at a level of 1.4 ppb. The levels detected were below the MCLs at all times.

Dibromochloropropane (DBCP). The PHG for Dibromochloropropane is 1.7 ppt, and the MCL or drinking water standard for Dibromochloropropane is 200 ppt. The City has detected Dibromochloropropane in 2 of 21 wells, Well #13, at a level of 94 ppt and Well 17A at 12 ppt. The levels detected were below the MCLs at all times.

Lead and/or Copper. There is no MCL for Lead or Copper. Instead the 90th percentile value of all samples from household taps in the distribution system cannot exceed an Action Level of 0.015 mg/l for lead and 1.3 mg/l for copper. The PHG for lead is .002 mg/l. The PHG for copper is 0.17 mg/l. Lead and copper were not detected in any of the City's source water samples in 2004. Extensive sampling of the City's distribution system in 2003, found that the City's 90th percentile value for lead was 0.0019 mg/l and for copper was 0.31 mg/l. The City's water system is in full compliance with the Federal and State Lead and Copper Rule.

Nitrates. The PHG for Nitrates is 10 ppm as nitrate-nitrogen, or 45mg/l as Nitrate (NO3). The MCL or drinking water standard for Nitrates is 45 mg/l (as NO3). The City has detected nitrates in all of our 21 wells at an average level of 12 ppm in Well #3, 66.8 ppm in Well #7A, 67.1 ppm in Well #8A, 62 ppm in Well #9A, 73.3 ppm in Well #11, 68.7 ppm in Well 12A, 107.6 ppm in Well 13, 74.1 ppm in Well 14, 11 ppm in Well #15, 56.4 ppm in Well #17A, 75 ppm in Well #19, 13.7 ppm in Well 21, 52.2 ppm in Well 22, 10.1 ppm in Well 24, 76.9 ppm in Well 25, and 0.3

ppm in Well #26. The City lowers nitrate concentrations in these wells by operating multiple blending stations, which mix high nitrate well water with treated water. The system's water meets the above standards by at least a 10% margin of safety.

It is anticipated that the future Rincon and El Sobrante Well Fields may also contain nitrates. If nitrate concentrations at the proposed well fields surpass the MCL, then the City will treat the well water with the Best Available Technology. Currently, the Best Available Technology for removing nitrates at the anticipated levels is selective resin treatment.

Fluoride. The PHG for Fluoride is 1 ppm. The MCL or drinking water standard for Fluoride is 2 ppm. Fluoride is naturally present in most of the City's 21 wells. The average levels are 0.31 ppm in Well #3, 0.42 ppm in Well #7A, 0.43 ppm in Well #8A, 0.4 ppm in Well #9A, 0.37 ppm in Well #11, 0.32 ppm in Well 12A, 0.34 ppm in Well 13, 1.8 ppm in Well 14, 0.0 ppm in Well #15, 0.43 ppm in Well #17A, 0.38 ppm in Well #19, 0.31 ppm in Well 21, 0.42 ppm in Well 22, 1.7 ppm in Well 24, 0.26 ppm in Well 25, and 2.62 ppm in Well #26. The City lowers fluoride concentrations by operating multiple blending stations that mix well water with treated water. The system's water meets the CDHS standard for fluoride by at least a 10% margin of safety.

Cadmium. The PHG for Cadmium is 0.07 ppb. The MCL or drinking water standard for Cadmium is 5 ppb. The City has not detected Cadmium in any City wells. Colorado River Water, tested by Metropolitan Water District had an occasional sample detecting cadmium with a high of 1.4 ppm. Metropolitan Water District raw water is treated at the City's Lester and Sierra del Oro water Treatment Plants and mixed at blending stations with well water and water from the Temescal Desalter to lower the concentration of cadmium. The water that is delivered in the system meets the standard established by the CDHS by a safety margin of no less than 10%.

Corona Sanitary Landfill and Future Groundwater Concerns

In September 1999, the Riverside County Waste Management Department (RCWMD) reported their findings of a groundwater model aimed at determining the extent of a Trichloroethylene (TCE) plume stemming from the Corona Sanitary Landfill. Their model, based on the landfill as the lone contaminant source, could not reproduce the TCE concentrations found in surrounding wells. RCMWD concludes that there may be other contaminant sources or unknown geological influences affecting the TCE concentrations in the offsite wells. If TCE concentrations at the proposed El Sobrante Well Field surpass the Maximum Contaminant Level (5 µg/L), then the City will pre-treat the well water with the Best Available Technology, prior to selective resin treatment. Currently, the Best Available Technology for removing TCE is Granulated Activated Carbon.

Section 16

Water Service Reliability

Law

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

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

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or potential future customers.

Projected Normal Water Year Supply and Demand

See Tables 21 – 23 for projected normal water year supply and demand for years 2010 – 2030.

Table 21
Projected Normal Water Year Supply-AF/Y

	2010	2015	2020	2025	2030
Supply	94,974	104,718	104,718	104,718	104,718
% of Normal Year	132%	145%	145%	145%	145%

Table 22
Projected Normal Water Year Demand-AF/Y

	2010	2015	2020	2025	2030
Demand	46,470	47,939	49,408	49,408	49,408
% of year 2005	103%	107%	110%	110%	110%

Table 23
Projected Normal Year Supply and Demand Comparison

	2010	2015	2020	2025	2030
Supply Totals	94,974	104,718	104,718	104,718	104,718
Demand Totals	46,470	47,939	49,408	49,408	49,408
Difference	48,504	56,779	55,310	55,310	55,310
Difference as % of Supply	51%	54%	53%	53%	53%
Difference as % of Demand	104%	118%	112%	112%	112%

Projected Single Dry Water Year Supply and Demand

See Tables 24-26 for projected single dry water year supply and demand for years 2010 – 2030.

Table 24
Projected Single Dry Water Year Supply-AF/Y

	2010	2015	2020	2025	2030
Supply	92,481	101,969	101,969	101,969	101,969
% of Normal Year	97%	97%	97%	97%	97%

Table 25
Projected Single Dry Water Year Demand-AF/Y

	2010	2015	2020	2025	2030
Demand	41,823	43,145	44,467	44,467	44,467
% of year 2005	90%	90%	90%	90%	90%

Table 26
Projected Single Dry Year Supply and Demand Comparison

	2010	2015	2020	2025	2030
Supply Totals	92,481	101,969	101,969	101,969	101,969
Demand Totals	41,823	43,145	44,467	44,467	44,467
Difference	50,658	58,824	57,502	57,502	57,502
Difference as % of Supply	55%	58%	56%	56%	56%
Difference as % of Demand	121%	136%	129%	129%	129%

Projected Multiple Dry Water Year Supply and Demand 2006-2010

See tables 27 – 29 for projected multiple dry water year supply and demand for years 2006-2010.

Table 27
Projected Multiple Dry Water Year Supply-AF/Y

	2006	2007	2008	2009	2010
Supply	44,791	44,791	44,791	47,489	47,489
% of Normal Year	50%	50%	50%	50%	50%

Table 28
Projected Multiple Dry Water Year Demand-AF/Y

	2006	2007	2008	2009	2010
Demand	38,250	38,984	39,719	40,453	41,922
% of year 2005	85%	86%	89%	89%	93%

Table 29
Projected Multiple Dry Water Year Supply and Demand Comparison

	2006	2007	2008	2009	2010
Supply Totals	44,791	44,791	44,791	47,487	47,487
Demand Totals	38,250	38,984	39,719	40,453	41,922
Difference	6,541	5,807	5,072	7,034	5,565
Difference as % of Supply	15%	13%	11%	15%	12%
Difference as % of Demand	17%	15%	13%	17%	13%

Projected Multiple Dry Water Year Supply and Demand 2011-2015

See Tables 30 – 32 for projected multiple dry water year supply and demand for years 2011 – 2015.

Table 30
Projected Multiple Dry Water Year Supply-AF/Y

	2011	2012	2013	2014	2015
Supply	46,240	46,240	50,984	50,984	50,984
% of Normal Year	50%	50%	50%	50%	50%

Table 31
Projected Multiple Dry Water Year Demand-AF/Y

	2011	2012	2013	2014	2015
Demand	42,817	43,712	44,607	45,502	46,397
% of year 2005	95%	97%	99%	101%	103%

Table 32
Projected Multiple Dry Water Year Supply and Demand Comparison

	2011	2012	2013	2014	2015
Supply Totals	46,240	46,240	50,984	50,984	50,984
Demand Totals	42,817	43,712	44,607	45,502	46,397
Difference	3,423	2,528	6,377	5,482	4,587
Difference as % of Supply	7%	5%	13%	11%	9%
Difference as % of Demand	8%	6%	14%	12%	10%

Projected Multiple Dry Water Year Supply and Demand 2016-2020

See Tables 33 – 35 for projected multiple dry water year supply and demand for years 2016 – 2020.

Table 33
Projected Multiple Dry Water Year Supply-AF/Y

	2016	2017	2018	2019	2020
Supply	50,984	50,984	50,984	50,984	50,984
% of Normal Year	50%	50%	50%	50%	50%

Table 34
Projected Multiple Dry Water Year Demand-AF/Y

	2016	2017	2018	2019	2020
Demand	46,497	46,597	46,597	46,597	46,597
% of year 2005	103%	104%	104%	104%	104%

Table 35
Projected Multiple Dry Water Year Supply and Demand Comparison

	2016	2017	2018	2019	2020
Supply Totals	50,984	50,984	50,984	50,984	50,984
Demand Totals	46,497	46,597	46,697	46,797	46,897
Difference	4,487	4,387	4,287	4,187	4,087
Difference as % of Supply	9%	9%	8%	8%	8%
Difference as % of Demand	10%	9%	9%	9%	9%

Projected Multiple Dry Water Year Supply and Demand 2021-2025

See Tables 36 – 38 for projected multiple dry water year supply and demand for years 2021 – 2025.

Table 36
Projected Multiple Dry Water Year Supply-AF/Y

	2021	2022	2023	2024	2025
Supply	50,984	50,984	50,984	50,984	50,984
% of Normal Year	50%	50%	50%	50%	50%

Table 37
Projected Multiple Dry Water Year Demand-AF/Y

	2021	2022	2023	2024	2025
Demand	46,897	46,897	46,897	46,897	46,897
% of year 2005	104%	104%	104%	104%	104%

Table 38
Projected Multiple Dry Water Year Supply and Demand Comparison

	2021	2022	2023	2024	2025
Supply Totals	50,984	50,984	50,984	50,984	50,984
Demand Totals	46,897	46,897	46,897	46,897	46,897
Difference	4,087	4,087	4,087	4,087	4,087
Difference as % of Supply	8%	8%	8%	8%	8%
Difference as % of Demand	9%	9%	9%	9%	9%

Section 17

Adoption & Implementation of UWMP

(See attached Ordinance)