APPENDIX A

Water Supply Assessment

Water Supply Assessment for the RiverPark Specific Plan

24 April 2002

City of Oxnard
Water Division
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Section 1: Introduction

1.1 Background

The proposed RiverPark Project (RiverPark) is a new mixed-use community containing residential, commercial, open space, and public facilities on a 701-acre site located immediately north of the Ventura Freeway (U.S. 101) between the Santa Clara River and Vineyard Avenue. The southern portion of the proposed RiverPark Specific Plan Area is within the City of Oxnard (City). This portion of the site is within the existing adopted Oxnard Town Center Specific Plan Area. The City is developing a new specific plan (RiverPark Specific Plan) that would allow for the annexation of the remainder of the RiverPark site and permit the planned development of the proposed uses. The new RiverPark Specific Plan Area would include the existing Oxnard Town Center Specific Plan Area.

SB 610 requires cities and counties that determine a project is subject to California Environmental Quality Act to identify any public water system that may supply water for the project and to request those public water systems to prepare a specified water supply assessment to be included in any environmental document prepared for the project. The assessment includes, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts. If the assessment concludes that water supplies are or will be insufficient, the public water system would be asked to submit plans for acquiring additional water supplies.

SB 221 requires written verification, from the applicable public water system, that sufficient water supply is available for a subdivision of property of more than 500 dwelling units prior to approval of a tentative or parcel map.

1.2 Purpose

The purpose of this Water Supply Assessment is to demonstrate that the City's future water supplies are sufficient to meet the City's projected build out water demands, inclusive of the RiverPark Specific Plan. This assessment has been prepared in accordance with the requirements of both SB610 and SB 221.

1.3 Assessment Organization

The remainder of this Water Supply Assessment is organized as follows:

Section 2 - Existing Water Sources and Supplies

Section 3 - Past Water Use and Trends

Section 4 - Urban Water Management Plan

Section 5 - Projected Water Demands and Sources

Section 6 – Planned Water Facilities

Section 7 – Related Information on Water Use

Section 8 - Conclusions

Section 2: Existing Water Sources and Supplies

The City's current water supply consists of imported surface water and local groundwater sources. The City blends these two sources to achieve a balance between water quality, quantity, and cost. Although the blend ratio has varied historically, the City's current practice is a 1:1 blend ratio of surface water to groundwater. Each of these sources is described in the following paragraphs.

2.1 Surface Water

To provide for long-range improvement of its water quality, the City annexed to Calleguas Municipal Water District (CMWD) in February of 1961. CMWD is a member agency of the Metropolitan Water District (MWD) of Southern California from which it purchases State Project Water. Imported water supply originates in Northern California and is conveyed over 500 miles to Southern California through the State Water Project's (SWP) system of reservoirs, aqueducts and pump stations. Water is filtered and disinfected at MWD's Joseph Jensen Filtration Facility in Granada Hills. CMWD receives the treated water from MWD via the MWD West Valley Feeder and either stores the treated water in Lake Bard to be treated later or feeds the water directly to the Springville Reservoir near Camarillo. The City receives water from Springville Reservoir through the City's Oxnard and Del Norte Conduits that feed the City's four water blending stations. Figure 2-1 presents an overview of City and regional water facilities.

The City purchased approximately 13,215 acre-feet of water from CMWD in 2001. Existing agreements the City has with CMWD do not guarantee the quantity of water the City may purchase. As discussed in Section 5.2.1 below, both MWD and CMWD are undertaking a variety of programs to increase the reliability of imported water deliveries.

2.2 Groundwater

2.2.1 Groundwater Basins

Local groundwater is generally extracted from the aquifers of the Oxnard Plain Groundwater Basin. The Oxnard Plain Groundwater Basin is generally made up of two aquifer systems known as the Upper Aquifer System (UAS) and the Lower Aquifer System (LAS). The UAS consists of the semiperched zone, the Oxnard Aquifer, and the Mugu Aquifer. The LAS is comprised of the Hueneme, Fox Canyon, and Grimes Canyon Aquifers.

2.2.1.1 Semiperched Zone

The semiperched zone is the uppermost water-bearing unit in the area. It is composed of fine to medium-grained sand with interbedded silty clay lenses, with an average thickness of about 30 feet ranging to a maximum of 80 feet. Immediately below the semiperched zone and overlying the Oxnard Aquifer is a confining bed, or clay cap, consisting primarily of silty and sandy clays with a maximum thickness of 150 feet and an average thickness of approximately 35 feet.

2.2.1.2 Oxnard Aquifer

The Oxnard Aquifer, the most important water source in the Oxnard Basin, is composed of fine to coarse-grained sand, gravel, and boulder deposits. Within the areas, the aquifer is a single unit of high permeability with no prominent silt or clay lens interruptions and has an average and maximum thickness of about 91 and 150 feet, respectively, at an average depth of 100 to 180 feet below grade. Permeability, or the ability to transmit water, of this aquifer ranges from 1,700 to 2,000 gallons per day per square foot (gpd/ft^2). Transmissivity of this aquifer is significant, and typically ranges from 100,000 to over 400,000 gpd/ft^2.

2.2.1.3 Mugu Aquifer

Immediately below the Oxnard Aquifer, and separating it from the Mugu Aquifer, is an aquitard that is composed of silty clay with some interbedded sandy clay lenses. The average thickness of this aquitard in the project area is approximately 30 feet although the maximum thickness has been reported to be 150 feet. The material that forms the Mugu Aquifer is fine to coarse-grained sand and gravel with some interbedded silty clay. Within the project area, this aquifer attains a maximum thickness of 250 feet, although the average thickness of this water-bearing zone is approximately 110 feet. Permeability at the Mugu Aquifer ranges between 1,900 and 2,200 gpd/ft^2. In the forebay area where the Santa Clara River enters the Oxnard Plain near Saticoy and near the Mugu Lagoon, the Mugu Aquifer merges with the Oxnard Aquifer. The Mugu Aquifer is reported to be in hydraulic continuity with the ocean, although there is no evidence of seawater moving laterally within the zone.

2.2.1.4 Hueneme Aquifer

Underlying the Mugu Aquifer, is an aquitard composed of silty clay that reaches a maximum thickness of 80 feet within the Oxnard Basin. This aquitard is continuous except in the forebay area, where the Hueneme Aquifer merges with the other groundwaters. The Hueneme Aquifer is composed of irregularly interbedded sand, silt and clay, with some gravel, ranging in thickness from 100 feet within the City of Port Hueneme to about 300 feet north of City of Oxnard. Permeability for this water-bearing zone is estimated to be 400 to 600 gpd/ft^2. This aquifer is reported to be in hydraulic continuity with the ocean. The Hueneme aquifer is separated from the underlying Fox Canyon aquifer by an aquitard that is composed of silt and clay and which is absent only where the Fox Canyon Aquifer merges with the Hueneme Aquifer in the northern portion of the forebay area. Although the thickness of the aquitard in the project area is not known, the maximum thickness in the basin is approximately 170 feet.

2.2.1.5 Fox Canyon Aquifer

Composed of fine to coarse-grained sand with gravel stringers and interbedded silt and clay, the Fox Canyon Aquifer is the second most important water source in the project area. With a maximum thickness of approximately 550 feet in the Oxnard Basin, permeability of this water-bearing zone range from 200 to 400 gpd/ft^2.

2.2.1.6 Grimes Canyon Aquifer

The aquitard that separates the Fox Canyon and the underlying Grimes Canyon Aquifers is composed of silt and clay, attains a maximum thickness of about 40 feet in the Oxnard Basin. The Grimes Canyon Aquifer is composed of fine to coarse-grained materials, with a maximum thickness of more than 1,500 feet and corresponds in area to the Fox Canyon Aquifer.

2.2.2 Fox Canyon Groundwater Management Agency

The Fox Canyon Groundwater Management Agency (FCGMA) was established in Ventura County by special act of the State Legislature in 1982 to control groundwater overdraft and minimize the threat of seawater intrusion in the upper and lower aquifer systems of the Oxnard Plain. The purpose of the FCGMA is to control groundwater overdraft in the Upper and Lower Aquifer Systems. In 1985, a plan for management of the LAS and UAS within the FCGMA boundaries was adopted.

2.2.2.1 FCGMA Management Plans

Major elements of the UAS Plan included the following programs:

1. Ventura County Ordinance No. 3739 - This existing County ordinance prohibits the construction, repair or modification of UAS wells in areas where increased extractions would increase the overdraft and the rate of seawater intrusion in the Oxnard Plain.
2. Completion of the Seawater Intrusion Abatement Project through improvement of the Vern Freeman Diversion and operating the new project under criteria developed to ensure proper water allocation.
3. Annual monitoring to determine the effectiveness of the project.

Major elements of the LAS Plan include the following:

1. Monitoring for seawater intrusion in the LAS near the coastline by constructing four new monitoring wells.
2. Development of Contingency Plans in the event seawater intrudes the LAS. These plans call for conservation and reclamation efforts, increased monitoring and pumping restrictions.
3. Implementation of pumping restrictions in the North Las Posas Basin would prohibit expansion of all types of water use to land on or topographically above the LAS outcrop or to other nonwater-bearing areas. This outcrop more or less parallels the south flank of South Mountain. The restriction would regulate the drilling of new LAS water wells and use of groundwater in the North Las Posas Basin to ensure that adopted GMA groundwater pumping projections are not exceeded.
4. Pumpage will be accurately monitored throughout the GMA by requiring semiannual reporting of metered extractions. Results will be used to verify water use rates and to limit groundwater extractions in basins where adopted GMA extractions are exceeded after adjustment of the date to account for wet and dry years.

2.2.2.2 Ordinance 5.9

In order to eliminate groundwater overdraft and reduce extractions to within the safe yield by the year 2010, the FCGMA adopted Ordinance No. 5.0 in 1990. This ordinance has been updated nine times since then. The key element of FCGMA Ordinance 5.9 is the gradual reduction in groundwater extractions by all municipal pumpers. FCGMA assigned allocations to each groundwater pumper. The reduction schedule is based on the average "historical extraction" using the five calendar years of reported extractions from 1985 to 1989. Groundwater extraction allocations for each well are set according to the following formula:

- 1992-1994 extraction allocation = 95% of historical extraction, as adjusted.

- 1995-1999 extraction allocation = 90% of historical extraction, as adjusted.
- 2000-2004 extraction allocation = 85% of historical extraction, as adjusted.
- 2005-2009 extraction allocation = 80% of historical extraction, as adjusted.
- After 2009 extraction allocation = 75% of historical extraction, as adjusted.

Baseline allocations are not subject to the incremental reductions.

Unused groundwater allocation (or conservation credits) can be accumulated and used in future years if additional water supplies are needed without incurring a FCGMA monetary penalty as long as the aquifer system is not damaged. The City can also accrue groundwater storage credits by recharging water to the aquifers. These credits can also be used in the future without incurring the FCGMA penalty as long as the aquifer system is not damaged. In addition, adjustments and transfers of groundwater extraction allocations are allowed under Sections 2 and 3 of Ordinance 5.9. When irrigated agricultural land changes to a Municipal and Industrial (M&I) use, the groundwater extraction allocation is transferred to the provider of the M&I water supply. The amount of allocation available for transfer from agricultural land is based on the amount of land irrigated for agriculture during the 1985-1989 base period. Up to two acre-feet can be transferred to the M&I provider for each acre of land irrigated for agricultural uses during the base period. Any remaining amount of the historic extraction allocation is eliminated. The FCGMA also allows the assignment of an extraction allocation from one party to another.

The City has two existing allocations – one (a suballocation) held in trust through United Water Conservation District and one for the City's own wells. Each of these allocations is discussed below. The City will also receive additional transferred groundwater allocations as allowed by Ordinance 5,9 as agricultural land within the City's planning area is converted to municipal and industrial uses consistent with the City's General Plan and extraction allocations associated with existing groundwater wells are transferred to the City. Because the reductions in allocation are designed to bring the groundwater basins within their safe yields, these groundwater allocations are considered to be reliable future water sources

2.2.3 United Water Conservation District Wells

United Water Conservation District (UWCD) currently provides a portion of the City's groundwater supply. This arrangement is formalized in the 1996 Water Supply Agreement for Delivery of Water Through the Oxnard/Hueneme Pipeline (copy included in Appendix A). UWCD holds a pumping sub-allocation for all users of the Oxnard-Hueneme (O-H) Pipeline, which includes the City, the Port Hueneme Water Agency, and a number of small mutual water companies.

UWCD diverts Santa Clara River water at the Vern Freeman Diversion Dam northwest of Saticoy and delivers a portion of the water to the El Rio Spreading Grounds via a pipeline. Water is then used to recharge the underlying Montalvo Groundwater Basin. Eleven wells are then used to extract the water and deliver it to the O-H users. Of the eleven wells, three extract water from the LAS, and the remaining eight extract water from the UAS. The El Rio wellfield has sufficient active pumping capacity to supply the peak O-H pipeline capacity of 53.0 cfs.

Water extracted by these wells is delivered to the El Rio Pumping Station, disinfected, and pumped directly through the O-H Pipeline to each of the O-H customers. UWCD built the O-H system in 1954 to move municipal groundwater extraction away from the coastal areas subject to seawater intrusion. The O-H Delivery System consists of 12 miles of distribution pipeline.

The City's sub-allocation through UWCD totaled 5,302 acre-feet in 2000, but as a result of future scheduled FCGMA cutbacks, will only amount to 4,990 and 4,678 acre-feet per year in 2005 and 2010, respectively. The City purchased approximately 5,852 acre-feet of water from UWCD in 2001. This number exceeded the City's annual suballocation, but the difference was made up, without FCGMA imposed penalties, through the exchange of unused groundwater allocation/conservation credits.

UWCD and the O-H users are in the process of amending the Water Supply Agreement. The primary changes affecting the City are the combining of the City's and Ocean View Municipal Water District's (OVMWD) peak capacity in the O-H Pipeline and related suballocations. This was done to streamline the agreement because the City currently wheels O-H water through its water distribution system to supply OVMWD. All parties to the agreement have agreed to the amendment and final adoption is expected at the June 2002 UWCD Board Meeting.

2.2.4 City of Oxnard Wells

The City owns seven wells in the Oxnard Plain Basin, two in the UAS and five in the LAS. The UAS wells include Nos. 22 and 23 that are located at Blending Station No. 1 on Third Street. These wells pump groundwater from the Oxnard Aquifer into a 220,000-gallon clearwell reservoir. The reservoir acts as a suction forebay for the blending station. This station boosts the water above the system pressure for mixing with imported water prior to introducing the water into the distribution system. The UAS wells have a pumping capacity of 3,000 gpm each. It should be noted that pumping capacity is a function of aquifer condition as well as the condition of the well, pumping equipment, groundwater levels, and distribution system pressure.

The LAS wells include Nos. 19, 20, 21, 24, and 25. Well Nos. 19, 24, and 25 are not currently active, but are anticipated to be completed by the end of 2002. Well Nos. 20 and 21 are located at Blending Station No. 1 and pump groundwater from the Hueneme Aquifer. Groundwater from Well Nos. 20 and 21 (pumping capacity of 3,000 gpm each) is also pumped to the clearwell reservoir prior to blending. Well Nos. 19, 24, and 25 are located at Blending Station No. 3 at the intersection of Gonzalez Avenue and Rose Avenue. The LAS wells will have a total pumping capacity of 14,000 gpm when Well Nos. 19, 24, and 25 are completed.

Like UWCD's sub-allocation, the City also has a groundwater allocation from the FCGMA. A copy of the City's allocation through the FCGMA is contained in Appendix B. For 2001, the City's allocation was 5,975 acre-feet. Cutbacks in 2005 and 2010 will result in groundwater pumping allocation limitations of 5,658 and 5,341 acre-feet, respectively, if no additional allocation transfers are granted. The City pumped 7,021 acre-feet of groundwater from its wells in 2001, which exceeded their annual allocation, but the difference was made up with unused groundwater allocation/conservation credits.

Section 3: Past Water Use and Trends

Table 3-1 presents the City water supplies over the past twenty years. In general, Table 3-1 indicates a trend of increasing water demand. This trend is expected to continue as Oxnard further develops.

TABLE 3-1
CITY WATER SUPPLY SOURCES

Calendar Year	City Wells (acre-feet)	UWCD (acre-feet)	CMWD (acre-feet)	Total (acre-feet)
1982	361	5,859	12,417	18,637
1983	133	5,733	12,263	18,129
1984	161	6,414	14,116	20,691
1985	138	6,227	13,752	20,117
1986	35	6,419	13,873	20,327
1987	86	6,559	14,223	20,868
1988	479	6,477	14,519	21,475
1989	1,933	5,507	15,148	22,588
1990	1,206	5,585	15,338	22,129
1991	491	5,133	13,642	19,266
1992	445	5,452	13,528	19,425
1993	515	7,788	12,328	20,631
1994	3,303	5,697	12,609	21,609
1995	1,768	2,233	17,916	21,917
1996	0	32	23,195	23,227
1997	0	10,478	14,077	24,555
1998	51	7,861	12,198	20,110 (a)
1999	0	10,198	14,282	24,511
2000	5,319	6,417	14,752	26,488
2001	7,021	5,852	13,215	26,088

Note: (a) 1998 production is an acknowledged anomaly.
Source: City of Oxnard Water Division.

The table also shows the City's recent shift in blending strategy. Since 2000, the City has attempted to reduce its dependency on UWCD and CMWD by producing more groundwater from its own wells. Previously, the City had been expending unused groundwater allocation to cover exceedances of its suballocation through UWCD. The City is now intent on remaining within its own annual well allocation and within its annual UWCD suballocation, and maintaining any unused groundwater allocation credits for emergency conditions.

Section 4: Urban Water Management Plan

4.1 Service Area

The City's service area encompasses a wide range of land uses including agricultural, industrial, commercial, and residential uses. Although agriculture represents a significant portion of the local economy, it is almost entirely reliant on private sources external to the City (UWCD and/or private wells) for water supply. There are only three service connections in the City serving agricultural customers. Residential customers (single and multi-family users) represent the largest segment of the City's water demands from both a number of users (service connections) and volume used. Commercial users ranked second followed by industrial users.

4.2 Future Water Demand

The City's adopted Urban Water Management Plan indicates that water demand is anticipated to be nearly 44,600 acre-feet (68 percent increase compared with 2000 demand) by 2020. The City has established diverse plans to meeting future water demands including constructing City facility improvements (Blending Station No. 3), increasing deliveries of UWCD and City groundwater, implementing City seasonal storage programs, increasing deliveries of imported water, participation in CMWD's regional and local supply programs, implementing recycled water (through the GREAT Program), and supporting water demand management programs. These phased programs are expected to provide the City with sufficient guaranteed supplies to meet water demands.

4.3 Reliability Planning

The Urban Water Management Planning Act requires an assessment of water supply reliability and vulnerability to seasonal or climatic shortage. Reliability is a measure of a water service system's anticipated success in managing water shortages. This assessment must include a comparison of the total projected water demand with the supply available for the following conditions: 1) average water year, 2) single dry water year, and 3) three consecutive dry years. The average year assessment (2000 calendar year) indicated that no shortage was observed. The single dry-year assessment (2005 calendar year) resulted in a potential shortage of approximately 6,500 acre-feet. The multiple dry-year assessment (years 2001-2003) resulted in shortages of approximately 3,200 acre-feet, 4,400 acre-feet, and 5,500 acre-feet, respectively. However, the City will utilize several programs, previously identified in Section 4.2, to address any potential shortages identified in the reliability assessment.

4.4 Recycled Water

The City's Oxnard Wastewater Treatment Plant (OWTP) has a design capacity of 31.7 million gallons per day (MGD) (35,000 acre feet per year) and a planned ultimate capacity of 39.6 MGD (44,000 AFY). The plant currently produces approximately 20 MGD (22,400 AFY) of secondary treated wastewater and discharges the effluent via a 48-inch diameter one-mile long ocean outfall into the Pacific Ocean. The City does not currently operate a City-wide recycled water program. In an effort to identify a project that could take advantage of the water recycling

potential from the OWTP, the City completed a Water Reclamation Master Plan in 1993. In addition, the City has been meeting with regional agencies to promote the City's Groundwater Recovery Enhancement And Treatment (GREAT) Program. This Program involves construction of a new regional groundwater desalination facility to serve the City and Port Hueneme Water Agency (PHWA), and a recycled water system to serve agricultural water users in the Pleasant Valley area.

4.5 Water Shortage Contingency Plan

Water shortages can be triggered by a hydrologic limitation in supply (i.e., a prolonged period of below normal precipitation and runoff), limitations or failure of supply and treatment infrastructure, or both. As a result of severe drought conditions, the City adopted Water Shortage Emergency Procedures in April 1991 (City Code Chapter 33-98). This Ordinance established two major components. First, it expanded the existing water conservation/public information program to provide greater community awareness and response to concerns expressed by residents and business owners. Second, it provided for an eleven-stage (ranging from voluntary to mandatory 50 percent reduction) water regulation and allocation program.

4.6 Demand Management Program

As part of the UWMP, the City adopted a Demand Management Program. The goal of the program was to permanently reduce the level or change the pattern of water demand from the City's customers. This program consists of several diverse activities including the following:

- Residential audit program targeting the top 1,000 single-family residential users on an annual basis.
- Resumption of the Fixture Retrofit Program (in conjunction with the aforementioned audit program).
- Implementation of a Water Offset Program to fund water conservation activities.
- Continued integration of the Automated Meter Reading (AMR) Program.
- Expansion of the Landscape Audit Program.
- Expansion of the Public Information Program.
- Further evaluation of the water rate structure.
- Explore additional staffing needs including a Water Conservation Coordinator position.
- Continued participation in the ultra-low flush toilet program.
- Continued support of agricultural water conservation programs.

Section 5: Projected Water Demands and Sources

5.1 Projected Water Demands

The City's adopted 2020 General Plan indicates that the population projected for year 2020 is 164,936. However, the City's Planning Department acknowledged that this 2020 projection, which was prepared in 1998, is outdated as the 2000 Census determined the population of the City to be 170,358. Similarly, Southern California Association of Governments (SCAG) and the Greater Oxnard Chamber of Commerce projected 2010 populations of 165,988 and 167,027 respectively, which are also considered outdated based on the current population.

Since realistic projected population numbers for the years 2005 to 2020 were not available from local and/or regional sources, the City's adopted Urban Water Management Plan developed future population projections based on available land use data and average residential densities. Table 5-1 indicates that the City's 2010 and 2020 population is projected to increase to 186,000 and 209,000, respectively.

TABLE 5-1
ESTIMATED FUTURE POPULATION PROJECTIONS

	2005	2010	2015	2020
Population (a)	174,000	186,000	197,000	209,000

Note: (a) City of Oxnard, Urban Water Management Plan 2001.

Growth management was a key concept in Oxnard's 2020 General Plan, completed in 1990. Rather than establish building quotas based on arbitrary numerical limits, the Plan sought to establish a level of community growth where municipal service levels and infrastructure kept pace with the natural consequences of development, such as traffic, sewage, water consumption or school enrollment.

Water demand is a function of several factors. Geographic location, topography, land use, demography and water system characteristics (i.e. system pressures, water quality and metering of connections) all influence water usage. Water demand characteristics within the City will therefore differ from water demands of other areas in Southern California according to these factors of influence.

In developing projections for future water demands, a two-step approach was used. For single-family residential, multi-family residential, and commercial demands, a stepwise regression model was developed to project future unit consumption rates. This model attempted to correlate changes in unit consumption with a linear combination of explanatory variables such as price, climatic factors (rainfall and temperature), and seasonality. In the course of the analysis, combinations of explanatory variables are used to model water demand behavior and those of lesser statistical significance are systematically dropped until only those of statistical significance remain. The model displayed a high degree of correlation with historical demands (1992 – 1999 data) from these user segments.

For industrial, agricultural, and City (park and landscape irrigation typically) uses, monthly consumption factors from 1997 to 1999 were used to project future demands based on anticipated buildout.

Based on the preceding analysis, total water demand was projected on a land-use basis as the sum of the individual components. Since detailed buildout schedules were not available for all of the City's undeveloped parcels, uniform rates of growth were assumed for each land use type, with full buildout achieved in year 2020. Results of this approach are summarized in Table 5-2. Table 5-2 indicates that demand is anticipated to be nearly 44,600 acre-feet by 2020. There are no adopted plans or projections available addressing growth in Oxnard past the year 2020, which is the planning horizon year for the City's adopted General and Urban Water Management Plans. Recent planning trends, as reflected in the Urban Growth Boundary incorporated into the General Plan in 1998, encourage the slowing of the outward expansion of the City. For this reason, growth after the year 2020 is expected to occur at a lower rate than it has historically. A growth rate of 0.5 percent is assumed after 2020 consistent with this planning trend. This growth rate reflects an assumption that infill and redevelopment activity will primarily account for growth in the City after 2020.

TABLE 5-2

CITY WATER DEMAND PROJECTIONS UNDER THE CURRENT GENERAL PLAN

	2000	2005	2010	2015	2020	2025
Total Demand	26,488	31,081	35,730	40,380	44,565	45,679 (a)

Source: City of Oxnard, Urban Water Management Plan (2001).
Note: (a) 2025 water demand projection based on 0.5 percent annual rate increase beginning in 2020.
All values rounded up to nearest 1 AF.

Table 5-2 took into account demands from the areas inclusive of the RiverPark development, but using land use designations in the City's current General Plan. Removing those demands and replacing them with the land use designations under the proposed RiverPark Specific Plan results in the new demands presented in Table 5-3. The RiverPark water demands assume a linear growth pattern with demands reaching their ultimate levels in 2020.

TABLE 5-3

CITY WATER DEMANDS INCLUDING THE RIVERPARK SPECIFIC PLAN

	2000	2005	2010	2015	2020	2025
Existing Master Plan	26,488	31,081	35,730	40,380	44,565	45,679
Oxnard Town Center	0	(238)	(475)	(713)	(950)	(950)
RiverPark Specific Plan	0	466	932	1,398	1,864	1,864
Revised Totals	26,488	31,309	36,187	41,065	45,479	46,593

All values rounded up to nearest 1 AF.

5.2 Projected Water Sources

Except for periods of regional water shortages, which affect the entire Southern California area, CMWD and UWCD have met the City's purchased water demands. However, the existing agreements that the City has with CMWD and UWCD do not guarantee the quantity of water the City may purchase from these agencies, nor does the City own an entitlement to water from these agencies. In addition, variability of State Water Project deliveries, hydrologic conditions, and catastrophic outages may affect the ability of the City to reliably meet water demand estimates.

In response to the above reliability questions, the City has established diverse plans to meeting a projected water shortage including enhanced groundwater deliveries, continued imported water deliveries, implementing a recycled water program, and supporting water demand management programs. These phased programs are expected to provide the City with the assurance that there will be sufficient supplies to meet its water demands, including those of the RiverPark Specific Plan.

5.2.1 MWD/CMWD

Imported surface water from CMWD will continue to be a source of supply for the City. However, as part of its rate restructuring program, CMWD is developing a new two-tier rate system. Tier 1 rates would apply to allocations for each CMWD member agency in a take-or-pay arrangement. The amount of the allocation has not yet been determined, but initial discussions were based on using 85 percent of the maximum deliveries from 1991 to 2001. Tier 2 rates would apply to imported water purchases that exceed the Tier 1 allocation. Tier 2 water would be priced at a higher rate than Tier 1 water. Provisions that would allow the City or any of

CMWD's member agencies to increase their Tier 1 allocation are expected, but have also not been finalized.

Although there are no guarantees that Tier 1 or Tier 2 water will be available, it is assumed for this analysis that the Tier 1 allocation is reliable under average year conditions. Under drought conditions, it is assumed that even the Tier 1 allocation would be subject to cutbacks. The basis for this assumption is that both CMWD and MWD, CMWD's wholesaler, have undertaken a number of steps to provide for better water supply reliability.

MWD recently issued its *Report on Metropolitan's Water Supplies* with the objective of providing information that would assist member agencies in complying with SB 221 and SB 610. A copy of this report (excluding the appendices) is contained in Appendix C. As the sole source of water for CMWD, MWD's planning is vital to ensuring the City with a reliable source of imported surface water. As part of its Integrated Resource Plan (IRP), the MWD Board of Directors established a water supply reliability objective as follows:

> "Through the implementation of the IRP, Metropolitan [MWD] and its member agencies will have the full capability to meet full-service demands at the retail level at all times."

MWD has developed a water resource strategy to meet this objective. It includes a portfolio of diversified supplies in accordance with the IRP and MWD's Regional Urban Water Management Plan (RUWMP). The IRP established policy guidelines for investing in water conservation, water recycling, desalination, Colorado River deliveries, State Water Project deliveries, water transfers, and storage in groundwater basins and surface reservoirs.

Once the IRP is fully implemented, water shortages like those experienced in the late 1980's and early 1990's are expected to occur less than once every 50 years based on potential hydrologic and weather conditions.

As a result of investments made since 1991 in storage, supply, conservation, and water recycling, MWD expects to be 100 percent reliable over the next 10 years (CMWD, 2000). Resource and facility additions to the MWD system that make this level of reliability possible include the following:

- Local supply and conservation programs yielding approximately 160,000 AFY
- Colorado River storage and conservation programs yielding approximately 280,000 AF of dry year supply
- State Water Project storage programs yielding approximately 130,000 AF of dry year supply
- Diamond Valley Reservoir (800,000 acre-feet of storage) yielding 400,000 AF of dry year supply.

CMWD is also taking steps to ensure that it will be able to meet its member agency demands reliably. In response to the urgent need to "drought-proof" its service area and minimize the potentially debilitating effects associated with seismic activity, CMWD is implementing projects like the Aquifer Storage and Recovery Project and City Seasonal Storage that will enhance the reliability of its water supply. Each of these programs is described below.

In a cooperative effort with MWD, CMWD is developing a storage reservoir in the Las Posas Groundwater Basin. The Las Posas Basin Aquifer Storage and Recovery (ASR) project is designed to provide for subsurface storage of up to 300,000 acre-feet of imported water for use to meet emergency, drought, and peak demands.

ASR technology includes dual-purpose, injection/extraction groundwater wells that can store water and subsequently produce the stored water as needed. The project will enable pre-delivery and storage of large volumes of State water in the CMWD service area during periods of availability. The stored water will later be "recovered" or extracted by CMWD to meet seasonal, drought and emergency demands.

The project includes the installation of thirty ASR wells within an approximate nine-square mile area in the Lower Aquifer System of the Las Posas Basin, nearly thirty miles of large diameter pipeline to connect the wells with existing CMWD infrastructure in the cities of Simi Valley and Thousand Oaks, and a combined pump/hydroelectric generation station in the City of Moorpark to facilitate the flow of water to from the wells. The project will be constructed in phases and is anticipated to be fully operational in 2010. To date, five wells are operational and have injected 35,000 acre-feet of imported water into the Lower Aquifer System for storage. Fourteen additional ASR wells are currently under development and should be operational in late 2002 (personal communication with CMWD staff).

Project facilities will enable the conveyance of water between the well field and distribution system at a rate of 100 cubic feet per second (cfs). This rate is based on an extraction capacity of 3.33 cfs (1,500 gallons per minute) per ASR well. Injection rates are estimated to be slightly lower at 2.66 cfs (1,200 gallons per minute). Given the projected extraction capacity, and assuming twelve months of around-the-clock production, the maximum annual extraction capacity of the project would be on the order of 72,000 acre-feet.

The Las Posas ASR project will provide the following benefits to the City:

- Increases the reliability of CMWD's drinking water supply by storing large volumes of State water when available for later use.
- Increases the water storage capacity for the CMWD service area. The available storage capacity in the Las Posas Basin is 30 times the capacity of Lake Bard.
- Provides increased operational flexibility in the event of a severe drought or emergency. If the State water supply is either reduced or disrupted entirely, the stored water will be retrieved, treated and delivered to meet CMWD's service area demands.

5.2.2 UWCD

Groundwater from UWCD will continue to be a source of supply for the City in the future. To date, the City has not experienced any difficulty in receiving water from UWCD and given the efficiencies in UWCD's recharge operations, it is likely that the City would be able to receive its full suballocation in any given year in spite of climactic (drought) conditions. In addition, City staff have estimated that they can reliably utilize 600 acre-feet per year of unused groundwater allocation from the Ocean View Municipal Water District to whom the City wheels water.

Nevertheless, UWCD is in the planning stages of two projects that would enable it to achieve higher levels of reliability.

The first project is the Saticoy wellfield. UWCD has recharge facilities upstream of the El Rio Spreading Grounds, but the Saticoy Spreading Grounds do not have any associated extraction facilities. The Saticoy wellfield would enable UWCD to extract groundwater similar to their El Rio Spreading Grounds for the purpose of distribution. By extracting groundwater near the recharge location, UWCD will be able to reduce the impacts of localized groundwater mounding and should be able to recharge more Santa Clara River water than in the absence of the Saticoy wellfield. The capacity of this facility has not been determined at this time.

The second project that UWCD is pursuing is the long-term use of the RiverPark gravel pits as storage facilities. The gravel pits will enable UWCD to divert more Santa Clara River Water than they would normally. This additional water would increase the yield from the El Rio Spreading Grounds. This project is also in the planning stages so detailed information in not available, but it has been estimated that over the historical period used in the RiverPark Specific Plan DEIR that an additional 7,000 acre-feet per year could be diverted.

5.2.3 City Wells

5.2.3.1 Additional Capacity

The City is currently developing plans for improvements at Blending Station No. 3. These plans include an iron and manganese removal/treatment system and the completion of three wells (Wells 19, 24, and 25). Well No. 19 will have an approximate capacity of 3,000 gallons per minute. Well No. 24 (2,500 gpm) will be designed as an injection/extraction well. Well No. 25 will have a pumping capacity of approximately 2,500 gpm. Well No. 19 will pump groundwater from the Fox Canyon Groundwater Basin, Well No. 24 from the Oxnard Basin, and Well No. 25 from the Hueneme Basin. Groundwater from Well Nos. 19, 24, and 25 will be blended with imported water at the Blending Station No. 3.

Although completion of these wells (additional 8,000 gpm) will not secure additional groundwater rights for the City, they provide redundant extraction facilities should existing wells become inoperative and will allow for increased extraction capacity when additional groundwater rights become available (through the GREAT Program). Completion of Well 24 as an injection/extraction well will allow the City to take advantage of seasonal storage water from CMWD (excess water typically available during the winter months at lower cost) should such water become available. This will enable the City to develop groundwater storage credits from the FCGMA.

The Draft Water System Master Plan is also making recommendations for the development of additional injection/extraction wells to reduce peak imported water requirements. These wells will also benefit the City by reducing the amount of water distribution pipes that would need to be upsized to serve future development. Once implemented, the injection/extraction wells can serve as an additional source of supply in the event of a catastrophic failure to one of the other sources.

5.2.4 Accumulated Unused Groundwater Allocation

As shown in Table 3-1, the City has only recently begun to make use of its own groundwater wells. During the prior period, the City accumulated unused groundwater allocation credits when its annual pumping did not exceed its annual allocation when water demands were lower and CMWD purchases were higher. The unused groundwater allocation credits were then used to supplement those instances when the City exceeded its own allocation or its suballocation through UWCD. Based on past and current practices, the City has estimated that there is sufficient unused groundwater allocation to meet its needs for approximately the next three years.

5.2.5 Ocean View Municipal Water District

The Ocean View Municipal Water District (OVMWD) serves water from UWCD to residential and agricultural customers in the Oxnard Plain. This water is wheeled through City owned and operated infrastructure to OVMWD. Based on discussions with OVMWD, the City has determined that approximately 600 acre-feet per year of unused OVMWD groundwater allocation would be available to the City for use. Based on existing crop patterns, this amount of water would be available throughout the period of projection.

5.2.6 Groundwater Extraction Allocation Transfers

Article 3 of the FCGMA Ordinance 5.9 addresses adjustments to extraction allocations. Section 2 of Article 3 defines the types of adjustments allowed, while Section 3 outlines the procedures for adjustments. When irrigated agricultural land changes to Municipal and Industrial (M&I) use, the groundwater extraction allocation is transferred to the provider of the M&I water supply. The amount of allocation available for transfer from agricultural land is based on the amount of land irrigated for agriculture during the 1985-1989 base period. Up to two acre-feet of allocation can be transferred to the M&I provider for each acre of land irrigated for agricultural uses during the base period. Any remaining amount of historic extraction allocation is eliminated. The transferred allocation is subject to the same cutbacks that affect the City's existing allocation and suballocation.

Implementation of the RiverPark Specific Plan will result in the conversion of agricultural land to M&I use. Additionally, there are several groundwater wells with industrial allocations within the proposed RiverPark Specific Plan Area. As the City of Oxnard will be the M&I service provider, the groundwater extraction allocations associated with these existing wells and agricultural uses will be transferred to the City. Based in FCGMA records, 2,106 acre-feet of groundwater extraction allocations associated with eight wells in the proposed Specific Plan Area will be transferred to the City. Factoring in the FCGMA mandated reductions, 1,684 acre-feet of allocation would be available in 2005 and 1,580 acre-feet would be available in 2010 and beyond.

5.2.7 GREAT Program

In an effort to identify a project that could take advantage of the water recycling potential from the City of Oxnard Wastewater Treatment Plant (OWTP) and provide a drought-proof, reliable water supply, the City completed a Water Reclamation Master Plan in 1993 (Oxnard, 1993).

Since that time, representatives of the City, PHWA, UWCD, and CMWD have been meeting regularly to discuss regional water supply issues. Through these discussions, a regional water supply program has emerged. This program, entitled the Groundwater Recovery Enhancement And Treatment (GREAT) Program, will involve the construction of a new regional groundwater desalination facility to serve the City and PHWA, and a recycled water system to serve agricultural water users in the Pleasant Valley area.

The Oxnard Wastewater Treatment Plant is currently a secondary treatment facility that discharges its effluent to the Pacific Ocean. Under the GREAT Program, both tertiary treatment and advanced water treatment (demineralization) will be added to the treatment train in order to produce recycled water that met not only DHS mandated criteria (Title 22 standards), but also consumer acceptance standards. Recycled water will be delivered to agricultural users in the Pleasant Valley area. These include users of UWCD's Pumping-Trough-Pipeline, and customers of the Ocean View Municipal Water District and the Pleasant Valley County Water District. Groundwater currently used by these customers has elevated levels of total dissolved solids and chlorides as a result of seawater intrusion. By reducing their pumping demands, the GREAT Program helps address the regional seawater intrusion problem. Furthermore, during low recycled water demand periods, the recycled water will be directly injected into the aquifer to serve as a deterrent to seawater intrusion and generate groundwater storage credits for the City.

Since these users are also subject to the FCGMA ordinances, reduction in their pumping rates will result in unused groundwater allocations. These unused annual allocations would be transferred to the City and extracted at their own wells or extracted by UWCD and delivered to the City via the O-H Pipeline. Since the groundwater is higher in TDS than the current blended supply, some demineralization would be required prior to distribution. A groundwater desalter would be constructed to allow for the production of water suitable for delivery to Oxnard customers. The GREAT Program desalter will have the potential to produce 20,772 acre-feet of potable water per year. Sufficient unused groundwater allocations can be generated through the distribution of recycled water to agricultural users or direct injection of recycled water into the groundwater aquifer to allow the GREAT desalter to operate at a slightly higher rate during the winter months to serve as a source for the planned injection/extraction wells.

The City has invested heavily in the preparation of a feasibility study and has aggressively pursued grant monies to fund the program. The draft feasibility study indicates that the GREAT Program is a cost-effective and reliable water resource solution when compared with the City's current alternatives of paying Tier 2 rates (estimated at $100/acre-foot more than current rates) or paying the FCGMA penalty for exceeding the City's annual groundwater extraction allocation. Grant funding efforts have been fruitful and have already yielded the funding necessary to support the next phase of design and outreach activities. The City has established a goal of obtaining 50 percent of the estimated $55,000,000 initial construction costs and has identified several potential funding sources including the US Bureau of Reclamation, US Department of Agriculture, and the State Water Resources Control Board. The City would finance the remainder of the project through the issuance of general obligation bonds or similar financing mechanisms.

A number of federal, state, and local permits/approvals will be required. Based on the current project definition, the following permits/regulatory requirements are likely to be required:

- CEQA/NEPA documentation
- Domestic Water Permit (DHS)
- Title 22 Engineering Report (DHS)
- Waste Discharge Requirements/Water Recycling Requirements (RWQCB)
- National Pollutant Discharge Elimination System Permit (RWQCB)
- CALTRANS Encroachment Permit
- Utility Survey Agreements (Ventura County Railroad Company/Union Pacific Railroad)
- Hazardous Material Release Response Plan
- Well Permit (Ventura County Public Works Agency)
- California Accidental Release Program (City of Oxnard, Fire Department)

The first phase of the GREAT Program is planned to be operational in 2006.

The GREAT Program Advanced Planning Study Document will be completed by April 2002. The City Council is expected to adopt the Advanced Planning Study Document in May 2002. The City Council is scheduled to consider a resolution, also in May 2002, formally adopting the project description for the GREAT Program and directing staff to proceed with further study consistent with the GREAT Program Advanced Planning Study, and including all necessary environmental review and documentation.

5.3 Normal and Dry Year Supplies

Based on normal demands during drought years, the minimum three-year water supply is provided in Table 5-4. Groundwater supplies from the City and UWCD (including the unused OVMWD allocation) should be unaffected by a three-year drought condition. The supply values from CMWD could change depending on the severity of the supply deficiency. However, CMWD and MWD have significantly improved the reliability of their systems with the construction of Diamond Valley Reservoir (MWD), delivery contracts (MWD), and groundwater storage (CMWD). The supplies from the GREAT Program are considered to be drought-resistant because the recycled water element used to generate unused groundwater allocation is drought-resistant.

If there is a need for significant demand reduction efforts, various voluntary or mandatory conservation efforts will be implemented by the City. It is anticipated that during any three-year drought, the City will have a full supply to meet customer demands. The City will be maximizing use of local resources to reduce dependence on vulnerable imported water supplies.

TABLE 5-4
THREE YEAR ESTIMATED MINIMUM WATER SUPPLY (AF)

Source	Year 1	Year 2	Year 3
City wells (a)	5,341	5,341	5,341
UWCD wells (a)	4,678	4,678	4,678
Unused OVMWD groundwater allocation	600	600	600
RiverPark extraction allocation transfer (b)	1,579	1,579	1,579
CMWD (c)	12,577	11,915	11,253
GREAT Program (d)	20,772	20,772	20,772
TOTAL SUPPLY	45,547	44,885	44,223

Notes:
(a) City and UWCD well capacities assume the full FCGMA allocation is available in 2010 and beyond.
(b) RiverPark extraction allocation transfer assumes all FCGMA reductions have been applied (i.e., post-2010 values)
(c) CMWD supplies assume a cumulative five percent annual reduction from the Tier 1 capacity.
(d) GREAT Program facilities are assumed to be at the ultimate capacity.
Source: City of Oxnard, Urban Water Management Plan (2001).

A summary of the City's projected 20-year water needs for normal and dry conditions are provided in Tables 5-5 and 5-6, respectively.

TABLE 5-5

CITY WATER DEMANDS AND SOURCES OF SUPPLY DURING NORMAL YEAR FOR PERIOD 2000 TO 2025 (AF)

Source	2000	2005	2010	2015	2020	2025 (b)
City wells	5,319	5,658	5,341	5,341	5,341	5,341
UWCD wells	6,417	4,990	4,678	4,678	4,678	4,678
CMWD	14,752	13,239	13,239	13,239	13,239	13,239
Unused OVMWD Allocation	0	600	600	600	600	600
RiverPark extraction allocation transfer	0	1,684	1,579	1,579	1,579	1,579
GREAT Program	0	2,587	10,750	15,628	20,042	20,772
Other sources (a)	0	2,551	0	0	0	384
Total Demand	26,488	31,309	36,187	41,065	45,479	46,593

Notes:
(a) Other sources represent a variety of sources including unused groundwater allocation , Tier 2 CMWD water, and/or pumping in excess of FCGMA allocations.
(b) The Water Demand Projections conservatively assume that the City is built out in year 2020, so there is no difference in the year 2020 and 2025 numbers.
All values rounded up to nearest 1 AF.

The dry year demand in Table 5-6 is assumed to be 6 percent higher than the normal demand.

TABLE 5-6

CITY WATER DEMANDS AND SOURCES OF SUPPLY DURING DRY YEAR FOR PERIOD 2000 TO 2025 (AF)

Source	2000	2005	2010	2015	2020	2025 (b)
City Wells	5,319	5,658	5,341	5,341	5,341	5,341
UWCD Wells	6,417	4,990	4,678	4,678	4,678	4,678
CMWD (a)	14,752	11,100	11,100	11,100	11,100	11,100
Unused OVMWD Allocation	0	600	600	600	600	600
RiverPark extraction allocation transfer	0	1,684	1,579	1,579	1,579	1,579
GREAT Program	0	2,587	15,060	20,231	20,772	20,772
Other sources (c)	1,589	6,569	0	0	4,138	5,319
Total Demand	28,077	33,188	38,358	43,529	48,208	49,389

Note:
(a) CMWD supplies during a single year drought are projected to be equal to the CMWD Tier 1 level less historical average drought drop (i.e., 13,200 AFY- 2,100 AFY = 11,100 AFY)
(b) The Water Demand Projections conservatively assume that the City is built out in year 2020, so there is no difference in the year 2020 and 2025 numbers.
(c) Other sources represent a variety of sources including unused groundwater allocation, Tier 2 CMWD water, pumping in excess of FCGMA allocations, and/or unused OVMWD groundwater allocation.
All values rounded up to nearest 1 AF.

Section 6: Conclusions

The City utilizes three distinct water sources – imported surface water from CMWD, groundwater from UWCD, and groundwater from its own wells – to provide potable water service to its customers. CMWD (and its wholesaler, MWD), UWCD, and the City have all taken steps to diversify their existing water supply resources to enhance service reliability to the City's water customers. The City's programs will result in the projected growth in water demand being met primarily with local reliable groundwater resources.

Groundwater extraction allocation transfers associated with the implementation of the RiverPark Specific Plan will provide approximately 86 percent of its projected water demand at buildout of the Specific Plan. To meet the additional demand associated with the RiverPark Specific Plan and other development allowed by the City's 2020 General Plan, the City intends to design, construct and operate the GREAT Program facilities to facilitate the transfer of over 20,000 acre-feet of additional groundwater extraction allocations to the City.

In the short-term, the City will continue to rely on unused groundwater allocations (accumulated City unused groundwater allocation and/or OVMWD unused groundwater allocations), CMWD Tier 2 water, and groundwater in excess of the City's FCGMA allocation to meet its water demand needs and provide the City the time to design and build the GREAT Program facilities. In the long-term, the City will implement the GREAT Program as a new water supply to meet its water demand needs, inclusive of the RiverPark Specific Plan, and will also utilize unused groundwater allocations and CMWD Tier 2 water as necessary. Existing and planned future water sources currently under development will be sufficient to meet projected demands, including the RiverPark Specific Plan.

References

Calleguas Municipal Water District. 2000. Final Urban Water Management Plan.

City of Oxnard. 1993. Final Water Reclamation Plan. Prepared by Malcolm-Pirnie/James M. Montgomery Engineers.

City of Oxnard. 2001. Urban Water Management Plan, Final Report – Public Review Document. Prepared by Kennedy/Jenks Consultants.

Metropolitan Water District. 2000. Regional Urban Water Management Plan.

MWD. 2002. Report on Metropolitan's Water Supplies.

Appendix A

Water Supply Agreement for Delivery of Water Through the Oxnard/Hueneme Pipeline

ORIGINAL

WATER SUPPLY AGREEMENT FOR DELIVERY OF WATER THROUGH THE OXNARD/HUENEME PIPELINE

This WATER SUPPLY AGREEMENT ("Agreement") is effective the 1st day of July 1996, by and between the CITY OF OXNARD, a Contractor as defined below, and UNITED WATER CONSERVATION DISTRICT, a water conservation district organized under the Water Conservation District Act of 1931 of the State of California ("United") in Ventura County California, with reference to the following facts:

FACTUAL RECITALS

This Agreement is entered into with reference to the following facts:

A. Large underground reservoirs exist within the boundaries of United. These underground reservoirs are fed by natural percolation of water into the stream beds of the District. During early development of the area, water was not taken from the underground but was diverted from surface stream flow. As the area grew more highly developed, wells were drilled and this underground source of supply began to be tapped. As more wells were drilled to meet the growing needs, more water was removed from the underground reservoirs than was annually replaced by natural means.

B. Water levels in the area began subsiding and water use was increasing to the point where there was danger of destroying the local economy. Widespread and costly litigation over water rights appeared inevitable. The inhabitants of the district decided that it was better to spend their money to build facilities for the conservation of water instead of spending it in lawsuits and consequently, in 1950, United was formed.

C. After United was formed, it developed a plan for the maximum conservation of water resources of United for the benefit of all the lands and inhabitants of the United. United's plan involved the construction of dams, and the further conservation of these waters by enhancing the natural percolation in stream beds and establishing artificial spreading grounds, thereby replenishing the natural underground reservoirs. United's plan took advantage of the bountiful wet years by conserving the waters then available, which would otherwise be lost to the sea, for use during drought.

D. The Oxnard Plain area however has presented a special problem. The underground reservoir underlying the Oxnard Plain is side by side with the Ocean and on the ocean side of the aquifer, fresh water meets and mingles with salt water. When the

COPY

water level in the underground reservoir is lowered, sea water is forced inland into the reservoir by the pressure of the Ocean. There is documented evidence of saltwater intrusion in both the Upper Aquifer System and the Lower Aquifer System beneath the Oxnard Plain. The water problem on the Oxnard Plain, therefore, is not only one of increased supply, it is also one of quality. It is necessary to keep salt water out of the underground reservoir. Thus it is necessary to use additional water conservation measures to meet the special problem of the Oxnard Plain and provide supplementary water via pipeline to the area.

E. In 1953, a bond issue was presented to the electors within United to provide funds for the construction of one dam and the Lower River distribution system including a pipeline to the Oxnard-Port Hueneme area. Simultaneous with the bond issue, United adopted a policy to enter into appropriate contracts with water users on the Oxnard Plain area for the construction of a pipeline in furtherance of its plan of water conservation. The water contracts signed under this policy established a charge for the delivery of water which was believed to be sufficient to cover costs of operation, repairs and maintenance and to repay capital costs over a forty year period.

F. The voters authorized the bond-issue and thereafter, the Santa Felicia Dam on Piru Creek and the Lower River Distribution System authorized by the bond issue were completed. During construction of the facilities, there was close contact and cooperation between United and the City of Oxnard. Design of the pipeline and booster facilities was accomplished in consultation with the City of Oxnard. The lower river distribution system, often called the Oxnard/Hueneme Pipeline system, was constructed and fully amortized during the 40 year life of the original water delivery agreements reached with water users on the Oxnard Plain.

G. The construction of the Santa Felicia Dam and the O/H Pipeline System successfully alleviated much of the overdraft existing at the time of construction. However, pumping pressures intensified and seawater intrusion advanced beneath the Oxnard Plain. In an effort to avoid adjudication of the Oxnard Plain Basin, the Fox Canyon Groundwater Management Agency (GMA) was formed. The GMA adopted a number of ordinances, placing a moratorium on certain new wells and requiring a twenty five percent (25%) cutback in pumping from historical levels over a 20 year period between 1992 and 2012.

H. United also responded to address a pumping trough created by the intensified pumping by constructing the Pumping-Trough-Pipeline over the pumping trough beneath the Oxnard Plain. Surface water was diverted from the Santa Clara River and delivered by pipeline to agricultural users to alleviate the dependence on groundwater for agricultural irrigation. In addition, the Freeman Diversion was constructed by United to

establish a permanent high river flow diversion structure in the Santa Clara River and to increase the yield of diverted water from the river by 12,500 A/F per year. Finally, United developed a pilot project to determine the feasibility of using abandoned gravel basins along the Santa Clara River for additional off-stream storage.

I. Oxnard has also addressed the groundwater problems of the Oxnard Plain by reducing its reliance on local groundwater supplies by importing some or all of its water from the State Water Project. At the same time, Oxnard has undertaken a groundwater injection program in which the City of Oxnard banks surplus State Water Project water during wet months for use during the dry summer months. Both of these projects serve to retard the saltwater intrusion and stabilize water levels for the benefit of all groundwater users.

J. The City of Port Hueneme and the Channel Islands Beach Community Services District in 1994 created a Joint Powers Agency, known as the Port Hueneme Water Agency, which would assist in meeting the GMA twenty five percent (25%) cutback in pumping allocations, move the pumping from the seawater intrusion front inland to the Montalvo Forebay to reduce seawater intrusion in the Oxnard Plain Basin, finance and develop a water treatment plant, and provide for the importation of State Water Project water. The Port Hueneme Water Agency will serve the City of Port Hueneme, Channel Islands Beach Community Services District, NCBC Port Hueneme, and NWS Point Mugu and intends to provide a blend of treated United water and State Water Project water.

K. All the projects described above are designated to address the continuing need to provide supplemental water to the Oxnard Plain. The overdraft on the Oxnard Plain continues and seawater intrusion remains an ongoing threat to the aquifers beneath the Oxnard Plain. The need continues to minimize the pumping along the sea water intrusion front and it is in the best interests of everyone on the Oxnard Plain that United continue to deliver supplemental water via the Oxnard/Hueneme Pipeline system.

AGREEMENT

NOW, THEREFORE, IT IS HEREBY MUTUALLY AGREED by Contractor and United as follows:

SECTION 1. DEFINITIONS. The following terms shall, for all purposes of this Agreement, have the following meanings:

"All Contractors" shall mean all parties to this Agreement who are defined as a Contractor, a Future Contractor, or an Emergency Contractor.

"**Any Contractor**" shall mean a party to this Agreement who is otherwise defined as a Contractor, a Future Contractor or an Emergency Contractor.

"**Capital Improvement**" shall mean an improvement that: (1) increases the useful life of the asset, (2) increases the quantity of the units produced by the asset, (3) enhances the quality of the units produced, or (4) is so treated in generally accepted accounting principles for municipal accounting.

"**City Service Area (CSA)**" shall mean the area generally within the incorporated boundaries of the City of Oxnard and provided with retail water service by the City of Oxnard.

"**Common Benefit**" shall mean expenditures for improvement or maintenance projects which benefit two (2) or more Contractors or Future Contractors representing greater than twenty-five percent (25%) of the allocated peak capacity as defined in SECTION 4(a) of this Agreement and which include, but are not limited to, projects necessary to meet the requirements of SECTION 6 of this Agreement.

"**Contractor**" shall mean a party to this Agreement on its original date of execution, which is a recipient of Supplemental Water supplied by United and has Pipeline peak capacity as allocated in SECTION 4 of this Agreement, below. "Contractors" shall mean the plural of Contractor but shall not be synonymous with All Contractors.

"**Emergency Contractor**" shall mean a person who does not have pipeline peak capacity as allocated in SECTION 4 of this Agreement but who has an emergency need and has obtained United's approval for a connection to the pipeline for a short period (generally less than 12 months), until the emergency can be resolved.

"**Fit for Human Consumption**" shall mean water complying with the primary standards of the applicable federal water quality standards which are presently reflected in the regulations of Title 22 of the California Code of Regulations and 40 CFR Parts 141-143 or as they may be further modified by actions of the federal government pursuant to Congressional authorization.

"**Fixed Operations and Maintenance Costs**" shall mean the fixed costs incurred for operation of the pipeline, detailed in Exhibit "A", which shall be allocated and charged in proportion to peak capacity assigned to All Contractors.

"**Fox Canyon Groundwater Management Agency**" or "**GMA**" shall mean the agency created by the Fox Canyon Groundwater Management Agency Act (Act 2750 of the Water Code Uncodified Acts) to control groundwater overdraft in the aquifer systems.

"**Future Contractor**" shall mean a person, other than an Emergency Contractor, who enters into a water service Agreement with United, for delivery of water through the O/H Pipeline, after the effective date of this Agreement. Contractors who desire additional peak capacity, beyond that allocated by SECTION 4, shall be considered a Future Contractor with respect to additional peak capacity. "Future Contractors" shall mean the plural of Future Contractor.

"**GMA Conservation Credits**" shall mean earned water conservation credits as defined by GMA Ordinance No. 5, as amended.

"**GMA Storage Credits**" shall mean earned storage credits as defined by GMA Ordinance No. 5, as amended.

"**GMA Extraction Allocation**" shall mean water extraction allocations as defined by GMA Ordinance No. 5, as amended.

"**Marginal Rate**" shall mean the sum of the four following charges: (1) the utilities costs and the maintenance costs as defined in Exhibit A under the Variable Operation and Maintenance Costs Attributable to the O/H Pipeline; (2) twenty percent (20%) of all other variable costs, as defined in Exhibit A under the Variable Operation and Maintenance Costs Attributable to the O/H Pipeline; (3) any pump charges levied by United; and (4) any pump charges levied by the GMA. All of the above charges will be applied on an acre foot basis to the water delivered.

"**Montalvo Forebay**" shall mean the groundwater basin depicted in Exhibit C which is a portion of the Santa Clara River Valley as defined by California Department of Water Resources Bulletin 118.

"**Municipal and Industrial**", or "**M&I**", shall mean water used for domestic, industrial, commercial, urban, irrigation or fire protection purposes.

"**Oceanview Service Area (OSA)**" shall mean the area generally within the boundaries of the Oceanview Municipal Water District for which Oxnard retains the exclusive right of service of O/H Pipeline water under this Agreement although retail water service within the OSA is provided by the Oceanview Municipal Water District.

"**O/H Pipeline**" or "**Pipeline**" shall mean the water distribution system owned and operated by United, that provides Supplemental Water that is Fit for Human Consumption and that includes the El Rio Wellfield and supply manifold piping, clearwells and reservoirs, water treatment facilities, booster station, pipelines, turnouts, meters, appurtenant facilities and the underlying land.

"**OH Pipeline Enterprise Fund**" shall mean the fund used in the accounting records of United to track the assets, liabilities, revenues, expenses and equity of the O/H Pipeline.

"**Oxnard Plain Basin**" shall mean the groundwater basin established by the GMA and depicted in Exhibit B, which is a portion of the Santa Clara River Valley Basin as defined by California Department of Water Resources Bulletin 118.

"**Person**" shall mean any individual, partnership, association, firm, public or private corporation, public entity, investor-owned utility, mutual water company, city, county, district, trustee, receiver, the state of California or any sub-division, part or agency thereof, the United States government or a department or administrative agency thereof, to the extent authorized by law.

"**Port Hueneme Water Agency**" or "**PHWA**" shall mean the Joint Powers Agency, a separate legal entity created by the City of Port Hueneme and the Channel Islands Beach Community Services District.

"**Sole Benefit**" shall mean expenditures for improvement or maintenance projects which benefit: (1) a single Contractor or Future Contractor, or (2) a group of Contractors and Future Contractors representing less than twenty-five percent (25%) of the allocated peak capacity as defined in SECTION 4A of this agreement.

"**Suballocation**" shall mean that portion of the GMA Extraction Allocation assigned to United for its extraction of water from the Oxnard Plain Basin which is held in trust for Any or All Contractors.

"**Subcredit**" shall mean the GMA Conservation or Storage Credits accrued by United on the O/H Pipeline and held in trust for Any or All Contractors.

"**Supplemental Water**" shall mean surface water or groundwater imported from outside the Oxnard Plain Basin and flood waters that are conserved and saved within the watershed or watersheds which would otherwise have been lost or would not have reached the Oxnard Plain Basin.

"**United**" or "**UWCD**" shall mean the United Water Conservation District, Ventura County, California, organized pursuant to Division 21 of the California Water Code.

"**Variable Operations and Maintenance Costs**" shall mean the various variable costs incurred for operation of the pipeline detailed in Exhibit A, which shall be allocated and charged on a per unit basis for water delivered to All Contractors.

"**Variable Rate**" shall mean the rate, applied on an acre-foot basis, that will recover all of the variable operation and maintenance costs, as defined in Exhibit A under the Variable Operation and Maintenance Costs Attributable to the O/H Pipeline, upon delivery of seventy five percent (75%) of the Suballocation (equivalent to the 2010 Suballocation described in SECTION 7 of this Agreement. The Variable Rate shall be set prior to the beginning of the fiscal year, based on the Suballocations as they exist on April 1st in each fiscal year.

SECTION 2. PURPOSE. The purpose of this Agreement is to enable United to deliver Supplemental Water, extracted from the Montalvo Forebay, and made Fit for Human Consumption, as a source of water to All Contractors overlying the Oxnard Plain Basin. By delivering Supplemental Water through the O/H Pipeline and reducing groundwater extraction on the Oxnard Plain, overdraft in the Oxnard Plain Basin is minimized. Delivery of this Supplemental Water is intended to provide a reliable, cost-effective water supply while minimizing the adverse environmental impacts of pumping water nearer to the seawater intrusion front. The parties acknowledge that the delivery of water made by United under this Agreement is subject to the ongoing regulatory authority of the Fox Canyon Groundwater Management Agency.

SECTION 3. QUANTITY OFFERED FOR DELIVERY. United agrees to deliver to All Contractors, all of the Supplemental Water that United can deliver under its plan of operation. United is committed to providing a reliable supply of M&I water via the Pipeline which is subject to interruption only for maintenance, emergency repairs or under operation of law. All Contractors recognize, however, that during certain periods of drought, the quantity available for delivery may be temporarily reduced in proportion to their pipeline capacity from time to time. All Contractors agree to use reasonable efforts to maintain their existing alternate sources of supply, if available, for such periods when water may be unavailable from the Pipeline.

SECTION 4. DIVISION OF PIPELINE CAPACITY.

A. Division The peak capacity in the O/H Pipeline is 53.0 cubic feet per second (cfs), which United agrees to maintain as the minimum capacity as long as United determines it is feasible as supported by engineering data. However, this minimum capacity may be increased by United to meet operational demands, as permitted by the system and as supported by verifiable engineering data. The peak capacities, in cfs, presently allocated to each Contractor are as follows:

Agency		Capacity
City of Oxnard		26.75
City Service Area	21.75	
Oceanview Service Area	5.00	
Port Hueneme Water Agency		22.25
Dempsey Road Mutual WC		.85
Cypress Mutual WC		.40
Donlon Farms		.05
Saviers Road Mutual WC		.25
Ventura County Game Preserve		*(To be provided upon completion of negotiations*
DelNorte		
Kings Packing		*with these agencies)*
Rio School District		1.0 (Under negotiation)
Vineyard Avenue Estates		1.35

In the event the capacity of the Pipeline is increased, the Contractors' peak capacities shall be increased, respectively, in accordance with part C(6) of this SECTION.

B. **Use of Pipeline Capacity by All Contractors** Each Contractor and each Future Contractor shall have the right to use its peak capacity provided in SECTION 4A above. In the event of a shortage of water in the Pipeline, the available water will be apportioned according to the percentage of available peak capacity assigned to each Contractor. United may deliver water in excess of peak capacity assigned to Any Contractor provided the delivery will not infringe upon the use of peak capacity assigned to other Contractors and Future Contractors.

C. **Future Contractor Use of Pipeline Capacity** United, at its sole discretion, may provide water through the Pipeline to a Future Contractor that has not been provided with Pipeline capacity pursuant to SECTION 4A above under the following terms and conditions:

(1) The delivery of water to the Future Contractor will not materially injure the rights of Any Contractor.

(2) The Future Contractor shall pay all costs of connection to the Pipeline, and shall also pay all of the cost of increasing and maintaining peak capacity above 53 CFS.

(3) The Future Contractor shall pay to United a water rate which is fifteen dollars ($15.00) per acre foot higher than the then prevailing Variable Rate and/or Marginal Rate charged to Contractors with entitlements under this Agreement.

(4) The Future Contractor shall either transfer GMA Extraction Allocations or GMA Conservation or Storage Credits to United in an amount sufficient to cover the delivery of water through the Pipeline or, in the alternative, pay to United the maximum surcharge then imposed for water extraction under the then-applicable GMA ordinances, rules or regulations. Such transfer and any provisions for a return transfer shall be accomplished under a separate agreement between United and the Future Contractor, the terms of which shall be consistent with this Agreement. The failure of the GMA to assess United the maximum surcharge or penalty under then existing GMA ordinances shall not relieve the Future Contractor of this obligation.

(5) Revenues received by United from a Future Contractor shall be deposited into the O/H Enterprise Fund to be used to defray operating or capital expenses of the Pipeline.

(6) All peak capacity necessary to meet the needs of Future Contractors shall first be requested from Contractors. Notice of such a request shall be sent to United and forwarded to all Contractors in writing, who shall have 30 days from the date delivered to respond to such request. If more than one Contractor desires to relinquish capacity, it shall be taken from the Contractors, who wish to relinquish capacity, in proportion to their then assigned peak capacity. Each Contractor is required to retain, however, sufficient peak capacity to receive the volume of water represented by the then assigned Suballocation reserved for that Contractor and any additional GMA Extraction Allocation or GMA Conservation or Storage Credits transferred to the O/H Pipeline in accordance with SECTION 4C(4) above. If the Contractors are unwilling to transfer peak capacity to a Future Contractor, United may increase peak capacity as supported by verifiable engineering data. Any increase in peak capacity shall be divided as follows: fifty percent (50%) divided proportionally according to the then assigned proportion of peak capacity among Contractors and fifty percent (50%) apportioned to the Future Contractor. Any Contractor may decline to accept additional peak capacity, in which case, United shall either not increase the overall peak capacity by that amount or offer that amount to the other Contractors in proportion to their then assigned share of peak capacity.

(7) Future Contractors shall receive peak capacity upon their execution of this Agreement. Future Contractors shall be assigned sufficient peak capacity as determined necessary by United to provide the Future Contractor with the requested volume of water, consistent with the terms of this Agreement.

D. Transfer of Peak Capacity Allocations While recognizing that the purpose of the Pipeline is to displace pumping from the Oxnard Plain by transferring that pumping to the Montalvo Forebay region, a Contractor or Future Contractor shall have the right to transfer its

peak capacity in the Pipeline as set forth in this SECTION 4 subject to the following conditions:

(1) No other Contractor or Future Contractor shall be unreasonably subjected to increased financial risk or exposure as a result of the transfer.

(2) Once transferred, the water will be used solely within the boundaries of United, and shall not result in any detrimental effect to the Oxnard Plain Basin.

(3) Prior to any transfer, written approval of United must be obtained (except for the case outlined in this SECTION 4C(6) for the transfer itself and for all improvements or modifications to the Pipeline which may be necessary for the transferee to take delivery of water. The cost of any such improvements and modifications will be borne solely by the transferee. United will not unreasonably withhold or delay its approval if all other conditions of this SECTION are met.

E. Connection of an Emergency Contractor to the Pipeline shall be at the sole discretion of United, subject to the conditions of this Agreement. Continuation of service as an Emergency Contractor beyond a twelve (12) month period shall require approval of Contractors and Future Contractors with entitlement to at least seventy five percent (75%) of the allocated peak capacity. Peak Capacity will not be assigned to Emergency Contractors and, consequently, no allocation of Fixed Costs will occur.

SECTION 5. DELIVERY CHARGES

A. All Contractors, except Emergency Contractors, agree to pay to United their proportional share of the fixed operation and maintenance costs based on their share of the Pipeline capacity as provided in SECTION 4 above and as may be adjusted from time to time in accordance with the terms of SECTION 4C above.

B. All Contractors, including Emergency Contractors, shall pay to United the Variable Rate for the delivery of the first seventy five percent (75%) of the Suballocation (equivalent to the 2010 Suballocation described in SECTION 7 of this Agreement). Charges for deliveries in excess of seventy five percent (75%) of the Suballocation to each Contractor or Future Contractor shall be set at the Marginal Rate. If deliveries to each Contractor or Future Contractor on the O/H Pipeline fall below seventy five percent (75%) of the Suballocation in any single year the unrecovered variable costs shall be added to the fixed costs of that Contractor or Future Contractor in the next fiscal year. However, for the purpose of determining the City of Oxnard's Variable Rate and Marginal Rate for the OSA and CSA indicated in SECTION 4 above, United shall provide a separate accounting for the CSA and OSA. The City of Oxnard agrees to make payment to United for the combined billing of both service areas and shall bear the responsibility to bill for and collect all costs for water

delivered to its customers in each service area. In no event shall the separate accounting be construed to vest any rights in Oceanview MWD or to relieve the City of Oxnard from its obligations as a contractor under this Agreement.

C. If GMA allocation is transferred to the O/H Pipeline by a Future Contractor, the rate charged for delivery of this allocation shall be the Variable Rate for the first seventy five percent (75%) of the water delivered, and the Marginal Rate shall apply for the remainder of the water delivered.

D. Fixed and variable operation and maintenance costs shall be computed in accordance with the Provisions of SECTION 12 of this Agreement.

E. The Emergency Contractor shall, however, pay a rate equivalent to one hundred and fifty percent (150%) of the highest Variable or Marginal rate paid by any Contractor or Future Contractor plus fifteen dollars ($15.00) per acre foot of water delivered.

F. Annual fixed operation and maintenance costs shall be invoiced by United in twelve (12) equal installments. The Variable Rate and/or the Marginal Rate will be billed monthly based on metered deliveries. United shall provide a separate accounting to the City of Oxnard of the fixed and variable charges for the CSA and OSA. All Contractors agree to pay United on a monthly basis as provided in SECTION 12E of this Agreement.

SECTION 6. QUALITY OF WATER DELIVERED.

A. The O/H Pipeline shall be operated in a manner which ensures delivery of water Fit for Human Consumption. All signatories to this Agreement have the reasonable expectation that the Pipeline will continue to deliver water Fit for Human Consumption for the term of the Agreement.

B. Contractors and Future Contractors with cumulative entitlement in excess of seventy five percent (75%) of the allocated peak capacity may request United to increase its level of treatment for the water delivered under this Agreement so that the water supplied by United to All Contractors satisfies one or more of the then-applicable secondary standards as defined by the California Health and Safety Code section 4023 et seq. and Title 22 of the California Code of Regulations section 64471 et seq. Upon United's receipt of this written request, United shall promptly analyze, plan, and construct any improvements necessary to provide water to All Contractors which satisfy any or all secondary standards for maximum contaminant levels within a reasonable time. Any improvements constructed under this section shall be subject to the finance and accounting procedures set forth in SECTION 10 and 12 of this Agreement. Upon completion of required improvements, the obligation for delivery of water "Fit for Human

Consumption" shall be expanded to include compliance with any secondary standards requested by Contractors or Future Contractors under this section.

C. Contractors and Future Contractors with entitlement to seventy five percent (75%) of the allocated peak capacity may request in writing to United that the Pipeline no longer be operated in a manner which ensures delivery of water Fit for Human Consumption. United's Board shall consider such a request based upon its feasibility, its total impact upon All Contractors served by the O/H Pipeline, and existing laws and regulations. Signatories to this contract agree that those Contractors who desire to continue to receive water Fit for Human Consumption from the Pipeline shall not be unreasonably penalized by the conversion to a source which is no longer Fit for Human Consumption. Contractors and Future Contractors who desire to convert to water no longer Fit for Human Consumption agree to pay for their proportional costs, based on their assigned peak capacity, incurred to construct and make operational treatment facilities not otherwise required by those Contractors who wish to continue to receive water Fit for Human Consumption from the O/H Pipeline. This right to receive these treatment facilities shall apply only to Contractors who are assigned initial peak capacity by this Agreement and shall not apply to Future Contractors who receive peak capacity after the effective date of this Agreement. Such costs shall be the most cost effective and reasonable costs according to reliable engineering estimates and shall include, but not be limited to, additions of or improvements to treatment facilities and associated land, structures, control systems, piping and site improvements.

SECTION 7. DIVISION OF GMA EXTRACTION ALLOCATION.

A. Division The GMA Extraction Allocation provided to United for wells serving the Pipeline is 14,818.12 AF. This GMA Extraction Allocation is based upon actual pumping from the El Rio wellfield during the period from 1985 through 1989. Actual deliveries to Contractors through the Pipeline during the period 1985 through 1989 period as measured at each individual turnout meter, totaled 13,567.55 AF. The difference between the GMA Extraction Allocation and actual deliveries represents line loss. Any GMA conservation credits resulting from a reduction in line loss shall be divided among the Contractors as Subcredits based upon their proportion of total actual deliveries during the historical period. The GMA Allocation, expressed below in acre feet, has been reduced by five percent (5%) in 1992 and will be reduced by an additional five percent (5%) in the years 1995, 2000, 2005, and 2010. United agrees that each Contractor which received service through the Pipeline during the historical period (1985 through 1989) shall have a Suballocation, for purposes of this contract only, based on actual deliveries, as follows:

Agency	Sub-allocation	(95%) 1992	(90%) 1995	(85%) 2000	(80%) 2005	(75%) 2010
City of Oxnard	8,671.0	8,237.42	7,803.94	7,370.36	6,936.78	6,503.30
CSA	5,941.4	5,644.33	5,347.26	5,050.19	4,753.12	4,456.05
OSA	2,729.6	2,593.09	2,456.68	2,320.17	2,183.66	2,047.25
Port Hueneme Water Agency	4,612.6	4,381.97	4,151.26	3,920.71	3,690.08	3,459.45
Dempsey Mutual	194.5	184.78	175.05	165.33	155.6	145.88
Del Norte	7.2	6.84	6.48	6.12	5.76	5.40
Donlons Recharge	5.3	5.04	4.77	4.51	4.24	3.98
Kings Packing	2.3	2.19	2.07	1.96	1.84	1.73
V.C. Game Preserve	1.3	1.24	1.17	1.11	1.04	.98
Saviers Road Mutual	27.6	26.22	24.84	23.46	22.08	20.70
Cypress Mutual WD	45.90	43.61	41.31	39.02	36.72	34.43
Rio Del Valle School	*(To be provided upon completion of negotiations with these agencies)*					
Vineyard Avenue Estates Mutual	266.0	252.7	239.4	226.1	212.8	199.5

B. **Accounting for Suballocation Delivered.** United shall establish an accounting system which will accumulate water deliveries to All Contractors on the Pipeline and compare those deliveries with the Suballocation distributed in this SECTION 7A above. To the extent that deliveries to Any Contractor in any single calendar year are less than the Suballocation, that Contractor shall accrue Subcredits for use in years when deliveries are in excess of the Suballocation. If deliveries are in excess of the Suballocation and Any Contractor has no Subcredits to apply against excess deliveries, that Contractor shall be liable for any GMA Extraction Surcharge levied on the Pipeline as outlined in this SECTION 7.

C. Deliveries in Excess of Suballocation. Deliveries in excess of the Suballocation will be allowed to the extent water is available. All Contractors receiving excess deliveries will be responsible for paying any penalties and surcharges imposed by GMA or others.

D. Allocation of GMA Extraction Surcharges All Contractors agree that surcharges assessed by the GMA represent a cost of operation of the Pipeline and should be based upon the accounting performed in accordance with SECTION 7B above and on a "first to take excess deliveries, first to pay" basis as described in the hypothetical example provided in the attached Exhibit E.

E. Establishment of Contractors' GMA Suballocation Any Contractor may establish a Suballocation or increase its Suballocation on the Pipeline by transferring GMA Allocation from wellheads owned by that Contractor to United. Such transfers shall be made through a separate agreement, in accordance with GMA Ordinances, and delivery of such increased allocation shall be subject to Peak Capacity constraints set forth in SECTION 4 above.

SECTION 8. DIVISION OF GMA CONSERVATION OR STORAGE CREDITS.

A. United shall use its best efforts to maintain its entitlement to GMA credits which are attributable to the Pipeline for the benefit of Any or All Contractors. United shall use its best efforts to obtain the greatest allocation of credits possible to the Pipeline for the benefit of Any or All Contractors.

B. The Contractors shall receive a proportional division, in the form of Subcredits, of the GMA Conservation or Storage credits previously assigned to the Pipeline by the GMA.

C. The Contractors shall accrue subsequent Subcredits obtained by the Contractors' use of less water than their Suballocation provided in SECTION 7 above.

D. To the extent United accrues GMA Storage Credits, the Contractors shall be entitled to obtain a division of these credits, as Subcredits, in proportion to their financial contribution to the costs of the activity which created the GMA Storage Credits.

E. United shall provide an annual accounting of all subcredits to All Contractors at the beginning of the fiscal year.

SECTION 9. PRIORITY OF GROUNDWATER USAGE. In recognition of the continuing threat of seawater intrusion in the Oxnard Plain Basin, All Contractors recognize the benefit of prioritizing their use of groundwater in the following manner:

A. First, from water deliveries from the Pipeline up to the amount of Any Contractor's then existing distributed Suballocation as shown in SECTION 7 above net of any GMA mandated reductions; or from water stored in an injection / extraction facility; and

B. Second, from groundwater not previously injected but extracted from Any Contractor's own wells.

SECTION 10. BUDGETING OF REVENUES AND EXPENDITURES

A. **Budgeting.** Each fiscal year United shall prepare a budget for all revenues and expenditures related to operating the pipeline. This budget will include a summary of projected water deliveries, fixed and variable costs and the projected Fixed, Variable and Marginal Rates. A preliminary draft of the budget shall be submitted to the Contractors and Future Contractors for their review by May 1st of each year. United will hold one or more noticed Finance Committee meetings, in connection with the presentation of the preliminary budget at which Any Contractor can express comments, objections or concerns. It is intended that the final budget will be adopted by United in the June Board meeting at which time unresolved concerns can also be addressed to the entire United Board of Directors. If the objections or concerns of Any Contractor are not resolved to the satisfaction of the parties involved, the parties may take the matter to dispute resolution in accordance with the terms of SECTION 18.

B. Unbudgeted Expenditures.

(1) In the event of an emergency, United shall expend O/H Pipeline Enterprise Funds as it deems necessary to preserve life or property or to minimize financial loss to the Enterprise Fund. United will use its best efforts to immediately notice All Contractors concerning the actions taken or to be taken.

(2) United may make necessary non-emergency, unbudgeted expenditures to the pipeline provided the unbudgeted expenditures do not result in any of the following impacts:

(a) An expenditure of more than ten percent (10%) of the current year's budgeted operation and maintenance expenses for the pipeline; or

(b) An interruption in water service to Any Contractor for more than 7 calendar days; or

(c) An action which will temporarily render the water delivered to Any Contractor unfit for human consumption.

(3) In the event any of these impacts will result from an non-emergency unbudgeted expenditure, United shall obtain prior written permission of All Contractors with entitlement to seventy five percent (75%) of the allocated peak capacity.

C. Cost Allocation of Budgeted and Unbudgeted Expenditures

(1) Prior to adoption of the final budget, United shall determine whether each budgeted expenditure, in excess of $10,000, provides a Common Benefit or Sole Benefit. All budgeted expenditures shall be assumed to provide a Common Benefit unless otherwise noted.

(2) Prior to approval of non-emergency unbudgeted expenditures in excess of $10,000, by United's Board of Directors, United shall determine whether the non-emergency unbudgeted expenditure provides a Common Benefit or Sole Benefit and shall notify All Contractors of its determination at least seven (7) days prior to the anticipated approval date.

(3) For emergency, unbudgeted expenditures in excess of $10,000, United shall determine whether the emergency, unbudgeted expenditure provides a Common Benefit or Sole Benefit and shall notify All Contractors of its determination as soon as feasible.

(4) Cost for budgeted or unbudgeted expenditures that provide a Common Benefit shall be allocated to All Contractors, in accordance with the provisions of SECTION 5 of this Agreement.

(5) Except as provided for in SECTION 6C of this Agreement costs for budgeted or unbudgeted expenditures that provide a Sole Benefit shall be allocated only to the Contractors, Future Contractors, and Emergency Contractors that benefit from the expenditure in accordance with the provisions of SECTION 5 of this Agreement.

SECTION 11. SUBSEQUENT SALE OF WATER. All Contractors agree not to furnish any water delivered by United through the Pipeline for use outside of the boundaries of United Water Conservation District (as shown in exhibit F), except as approved in advance of any such delivery, in writing, by United.

SECTION 12. FINANCE AND ACCOUNTING.

A. United shall account for the operation of the Pipeline in an enterprise fund and all costs associated with operation and maintenance of the O/H Pipeline shall be charged to the fund.

B. Overhead is to be allocated to the fund based upon various operating criteria which are recalculated annually as part of the budgeting process. Questions about or objections to the allocation of overhead should be addressed in accordance with the procedures outlined in SECTION 10 of this Agreement. The criteria used to allocate general district overhead to the fund are: units of billing, direct labor hours, number of accounts payable transactions and fund revenue; all applied to an average overhead pool. See Exhibit D for an example of the formulas used to calculate overhead.

C. The delivery charge or rate to be paid by All Contractors for all water delivered hereunder shall be computed, determined and fixed by United in an amount reasonably estimated as sufficient to pay all costs which will accumulate to the Pipeline enterprise fund and which will then maintain agreed upon reserve levels in the ensuing fiscal year.

D. United will own, install, maintain and calibrate annually the necessary water meters to measure the amount of water delivered. All Contractors will make future connections to the Pipeline at their own expense and at locations acceptable to United. Any connection will be made and metered in an manner satisfactory to both parties.

E. United will bill, and All Contractors agree to pay, water charges on a monthly basis. In the event Any Contractor becomes delinquent in the payment of such charges, United may, at its option, refuse to make further deliveries until such amounts have been paid in full.

F. The level of cash reserves in the O/H Pipeline Enterprise Fund will be set at approximately fifty percent of the annual average of the prior three (3) years annual operations and maintenance expenditures as outlined in Exhibit A. The O/H Pipeline rates will be established on an annual basis in accordance with SECTION 5 of this Agreement to maintain reserves at this level. In the event that reserves are depleted by more than thirty percent (30%) in any fiscal year because of expenditures on an emergency or unbudgeted item, United and All Contractors agree to meet and confer about developing a plan, which may include but not be limited to temporary rate increases, surcharges, capital contributions or other reasonable methods, that will restore the reserves to the above described levels or some other level that United and Contractors or Future Contractors with cumulative entitlement of seventy five percent (75%) of the allocated peak capacity may determine. Interest income earned on the O/H Pipeline fund reserves shall remain in the fund.

(1) The City of Oxnard and the Agency accept and acknowledge that fifty percent of the annual average operations and maintenance expenditures may be insufficient to fund major improvements or to make repairs to the pipeline and facilities in the event of catastrophic emergencies.

(2) In the event that United, pursuant to SECTION 10B hereof, expends funds that completely deplete the cash reserves of the O/H Pipeline Enterprise Fund, then United shall have no further obligation to expend funds from any source for the O/H Pipeline. Upon the exhaustion or anticipated imminent exhaustion of the O/H Pipeline enterprise Fund, United shall notify the City of Oxnard and the Agency, in writing, requesting payment of the cost of unbudgeted expenses. The City of Oxnard and the Agency shall have five (5) days after delivery of the notice to respond with a written notice stating whether they will pay funds to the O/H Pipeline Enterprise Fund in their proportionate or some other greater or lesser amount of the cost of the unbudgeted expenses. The City of Oxnard and the Agency shall have thirty (30) days after delivery of the notice from United to pay the required funds to the O/H Pipeline Enterprise Fund. If the funds required to pay the unbudgeted expenses are not committed within the five (5) day period specified herein, the City of Oxnard and the Agency agree to indemnify United from and against all liabilities, expenses or damages of any kind, including, but not limited to, attorneys' fees and costs of defense, that may be incurred by United as a result of failing to expend funds, make the repairs and continue to operate the O/H Pipeline or supply water, if operation or supply is prevented, and all other matters resulting from the failure to expend funds pursuant to the provisions of SECTION 10C. If and when the full amount of the unbudgeted expenses are paid to the O/H Pipeline Enterprise Fund, United shall immediately resume its duties under this Agreement and the City of Oxnard and the Agency shall be relieved from the aforementioned indemnity obligation except to the extent that the obligation may have arisen or may later arise because of the failure of United to expend funds, make repairs, continue to operate or supply water as a result of the exhaustion or anticipated eminent exhaustion of the O/H Pipeline Enterprise fund. At the time, United, the City of Oxnard and the Agency agree to meet and confer pursuant to SECTION 18 of this Agreement to determine how and when the reserves of the O/H Pipeline Enterprise Fund are going to be restored to the level set pursuant to SECTION 12F of this Agreement.

(3) Nothing stated in this SECTION 10 or this Agreement shall be construed to obligate United to expend any funds from any source other than the O/H Pipeline Enterprise Fund.

(4) Nothing herein shall be construed as obligating the City or the Agency to provide funding as provided in SECTION 12F(2) unless Contractors and Future Contractors with cumulative entitlement in excess of seventy five percent (75%) of the allocated peak capacity determine that repairs or improvements are necessary.

(5) The City of Oxnard and the Agency acknowledge and accept that the enterprise reserve on July 1, 1996 may be less than the goal of fifty-percent annual operations and maintenance expenditures because of United's use of cash reserves which accrued under previous contracts and agreements related to the enterprise to replenish other related United financial accounts (Freeman Diversion Fund and General Fund) as a result of the City of Oxnard's failure to purchase water from United between July of 1995 and June 30, 1996. The City of Oxnard and the Agency consent to the use of the enterprise fund reserves for these purposes, provided that in years where the cumulative water purchases by All Contractors exceed their forecasted use based upon the annual, running average usage for the prior five years, the enterprise fund shall be entitled to a refund of the associated Freeman Diversion and District-wide pump charges equal to the amount created by the excess usage.

G. The rates may be changed from time to time by United in light of its experience in operating the system, determining overhead costs, maintaining adequate reserves and maintaining the water delivery system. All Contractors shall have the right to inspect United's computations in determining such charges, and upon request, United will re-compute same, provided that such request shall not be made until at least one year has passed since the latest re-computation. Disagreements in the rate setting process will be resolved per the terms of SECTION 18.

SECTION 13. NOTIFICATION FOR START OR STOP OF DELIVERIES. Under ordinary circumstances the parties will give each other forty-eight (48) hours notice in advance of the time when they wish to stop or start delivery of water. An event which may cause a material change in the quantity and quality of the water delivered under this Agreement will be immediately noticed to All Contractors.

SECTION 14. FUTURE ANNEXATIONS BY CONTRACTOR. If any area hereinafter is annexed by Any Contractor, the people or land area or industries covered by the annexation will automatically be bound by all of the terms of this contract.

SECTION 15. HOLD HARMLESS. Except in case of Any Contractor's negligence or misconduct, United agrees to hold Any Contractor harmless if United is involved in any litigation resulting from United's operations of the Pipeline to the point of delivery to that Contractor. Except in case of United's negligence or misconduct, as established by a written stipulation or agreement signed by United, or by judgment in a court of competent jurisdiction, All Contractors agree to hold United harmless if Any Contractor is involved in litigation resulting from that Contractor's operations after receiving water at said point of delivery.

SECTION 16. WATER RIGHTS AND EASEMENTS. Nothing in this Agreement shall be construed to grant, or shall confer upon Any Contractor, any rights, or easements in United's conduits, distribution systems, dams or other facilities or any right to water conserved or appropriated by means thereof except as provided herein. Nothing in this Agreement shall be construed to grant, or shall confer upon United, any rights, or easements in Any Contractor's conduits, distribution systems, dams or other facilities or appropriated by means thereof except as provided herein.

SECTION 17. TERM AND OPTION TO WITHDRAW.

A. Term The term of this Agreement shall begin on July 1, 1996 and shall automatically expire on June 30, 2036. The City of Oxnard and the Agency have the option to withdraw from the Agreement as more fully set forth in Section 17B hereof. All prior Agreements and/or amendments related to delivery of water through the O/H pipeline are superseded by this Agreement, as of July 1, 1996. The parties agree to review the terms of the contract every ten (10) years, beginning ten (10) years from the date of execution.

B. Option to Withdraw The City of Oxnard and the Agency each have the option to withdraw as a party to this Agreement effective June 30, 2016. This option is exercisable by giving written notice to United, in accordance with Section 19L, not less than twelve (12) months but not more than twenty-four (24) months prior to the effective date of withdrawal notifying United of its intention to withdraw. Failure to give notice within the permitted period of time shall cause the option to lapse. Upon exercise of the option any withdrawing party shall continue to be bound by this Agreement through the withdrawal effective date of June 30, 2016, and any withdrawing party shall remain liable, after the date of withdrawal, for all costs, charges, assessments or any other sums required to be paid by the withdrawing party that remain unpaid after the date of withdrawal. Any distribution of Suballocations or Subcredits shall be decided by the mutual agreement of United and the withdrawing party at the time of withdrawal consistent with the terms of this Agreement. The withdrawing party shall have the right to assign its peak capacity in the pipeline in accordance with the provisions of SECTION 4 of this Agreement.

SECTION 18. RESOLUTION OF DISPUTES.

A. Advisory Committee. The parties to this Agreement shall exercise best efforts to resolve disputes through the development of a consensus. An advisory committee shall be established comprised of one representative from United, one representative from Any Contractor who has more than twenty five percent (25%) of peak capacity and one additional representative who shall be selected by a vote of All Contractors with less than twenty five percent (25%) peak capacity. If such a representative cannot be selected by All Contractors with less than twenty five percent (25%) peak capacity, one shall be appointed by the other

members of the committee. This advisory committee shall be formed for the general purpose of ensuring this Agreement is being administered and implemented in accordance with the desires of United and All Contractors. The United representative shall be the Chair of the advisory committee. The Chair shall have the responsibility for scheduling all meetings required under this SECTION 18. A meeting of this committee can be requested by Any Contractor at any time.

B. **Annual Meeting**. The advisory committee shall meet annually, or as often as necessary, for the purpose of reviewing the administration and implementation of this Agreement. The advisory committee shall use best efforts to obtain consensus on the appropriate resolution of technical, administrative, financial, legal and operation issues that may arise from time to time.

C. **Dispute Resolution Procedure**. The parties to this Agreement shall submit any dispute, without limitation, related to or arising under this Agreement to the advisory committee for consideration. The party or parties raising the dispute shall be required to submit a description of the dispute in writing to the Chair. Within 14 calendar days of the Chair's receipt of the written notice, the Chair shall transmit the written notice to the other members of the advisory committee and any interested parties. The Chair shall schedule a meeting as soon a possible for the purpose of addressing the identified dispute. The Advisory committee shall convene a meeting within 30 calendar days of the Chair's receipt of the written notice of dispute and it shall use good faith and best efforts to resolve the dispute.

D. **Content of Written Notice of the Dispute**. The Notice shall provide a brief description of the nature of the dispute and any relevant background information that will assist the advisory committee in its attempt to equitably resolve the matter. The notice shall identify the party or parties that the dispute involves and the nature of the decision or relief requested.

E. **Failure of the Advisory Committee to Resolve the Dispute**. In the event that the advisory committee cannot resolve the dispute to the satisfaction of the parties to this Agreement, the parties agree that they will schedule a joint meeting of their designated elected representatives (or, if none are elected, then appointed representatives), who, after considering all of the facts, will attempt to reach consensus. Failing that, the parties may then freely pursue any remedy they may otherwise have under the law.

F. **Emergency Exception**. In cases where a dispute arising between the parties which, if unresolved, may result in imminent danger to the public, health, safety or welfare, the parties shall not be subject to the provisions of this SECTION 18.

SECTION 19. OTHER PROVISIONS.

A. Successors This Agreement is binding on and shall inure to the benefit of and be binding upon the parties hereto and their respective successors in interest as more fully set forth herein. A successor in interest shall not be entitled to receive any benefits under this Agreement until the successor agrees in writing to be bound by this Agreement. Nothing in this Agreement shall be construed to invalidate or otherwise require further approval of the prior assignment of Ocean View Municipal Water District's right, title and interest in pipeline capacity to the City of Oxnard under the Joint Powers Agreement between the City of Oxnard, the United Water Conservation District and the Ocean View Municipal Water District, dated June 14, 1967. Such assignment was complete on June 15, 1992 and the division of Pipeline capacity under Section 4 of this Agreement acknowledges the prior assignment and the City of Oxnard as the successor in interest to the rights once held by Ocean View Municipal Water District.

B. Authority The individuals executing this Agreement hereby represent and warrant that each of them has the authority to enter into this Agreement and to perform all acts required by this Agreement, and that the consent, approval or execution of or by any third party is not required to legally bind either party to the terms and conditions of this Agreement.

C. Governing Law This Agreement shall be governed by and interpreted in accordance with the laws of the State of California with venue proper only in the County of Ventura, State of California.

D. Attorneys Fees If any action, at law or in equity, including any action for declaratory relief, and including any arbitration or mediation, is brought to enforce or interpret the provisions of this Agreement, the prevailing party shall be entitled to recover from the non-prevailing party reasonable attorneys fees and costs of suit, which shall be determined by the court, the arbitrator of the mediator in the same or separate action brought for that purpose. This provision shall not apply to the dispute resolution procedure set forth in SECTION 18 above.

E. Interpretation The provisions and language of this Agreement shall be interpreted in accordance with the plain meaning thereof and shall not be construed for or against any of the parties hereto.

F. Good Faith The parties agree to exercise their best efforts and utmost good faith to effectuate all the terms and conditions of this Agreement and to execute such further instruments and documents as are necessary or appropriate to effectuate all of the terms and conditions of this Agreement.

G. **Headings** The headings used in this Agreement are for convenience and reference only and shall not be utilized in the construction of the terms or provisions of this Agreement.

H. **Severability** If any term, provision, covenant or condition of this Agreement shall be or become illegal, null, void or against public policy, or shall be held by any court of competent jurisdiction to be illegal, null or void or against public policy, the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected, impaired or invalidated. The term, provision, covenant or condition that is so invalidated, voided or held to be unenforceable, shall be modified or changed by the parties to the extent possible to carry out the intentions and directives set forth in this Agreement.

I. **Counterparts** This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, but all of which shall constitute one and the same instrument.

J. **Assignment** Except as expressly provided herein, no party shall have the right to assign its rights or delegate any of its obligations or duties hereunder without the express written consent of the other party which consent shall not be unreasonably withheld.

K. **Waiver** The waiver of any breach of any provision hereunder by any party to this Agreement shall not be deemed to be a waiver of any preceding or subsequent breach hereunder, nor shall any waiver constitute a continuing waiver. No waiver shall be binding unless executed in writing by the party making the waiver.

L. **Notices** All notices, approvals, acceptances, demands and other communications required or permitted hereunder, to be effective, shall be in writing and shall be delivered either in person or by mailing the same by United States mail (postage prepaid, registered or certified, return receipt requested) or by Federal Express or other similar overnight delivery service to the party to whom the notice is directed at the address of each such party as follows:

To:	CITY OF OXNARD	City Manager 305 West Third Street Oxnard, CA 93030
To:	PORT HUENEME WATER AGENCY	250 North Ventura Road Port Hueneme, CA 93041
To:	DEMPSEY ROAD MUTUAL WATER COMPANY	2265 Samuel Avenue Oxnard, CA 93033

E	To:	SAVIERS ROAD MUTUAL WATER COMPANY	PO Box 64 Oxnard, CA 93032
	To:	CYPRESS MUTUAL WATER COMPANY	135 Magnolia Avenue Oxnard, CA 93030
	To;	RIO SCHOOL DISTRICT	3300 Cortez Street Oxnard, CA 93030
	To:	DONLON FARMS	PO Box 839 Somis, CA 93066
	To:	VINEYARD AVENUE ESTATES MUTUAL WATER COMPANY	PO Box 5065 Oxnard, CA 93031
	To:	UNITED WATER CONSERVATION DISTRICT	725 East Main Street Santa Paula, California 93061

Any written communication given by mail shall be deemed delivered two (2) business days after such mailing date and any written communication given by overnight delivery service shall be deemed delivered one (1) business day after the dispatch date. Either party may change its address by giving the other party written notice of its new address as herein provided.

M. **Amendment** Adjustments and amendments to this Agreement and its terms and conditions shall only be made by written mutual agreement of the parties and signed by a duly authorized official representing each party.

N. **Entire Agreement** This Agreement constitutes the entire agreement between the parties and supersedes any prior negotiations, agreements and understandings of the parties, relating to the subject matter of this Agreement. This Agreement shall be executed by all persons who receive water from the O/H Pipeline, present and future, in identical form. This Agreement may not be modified in any way except in writing, signed by all parties.

O. **Conditions Precedent to Operation of Agreement** Although this Agreement may be executed by all parties, its provisions shall not be enforceable by or against any party unless or until there is strict performance of the following conditions precedent:

(1) **Execution of the Below Listed Agreements.** As a first, separate and independent condition precedent, the parties hereto shall each have executed the below-listed agreements:

a. Water Supply Agreement for Delivery of Water Through the Oxnard/Hueneme Pipeline (Parties: City of Oxnard, Port Hueneme Water Agency and United Water Conservation District).

b. Water Lease Agreement (Parties: United Water Conservation District and Port Hueneme Water Agency).

c. Imported Water Service Agreement (Parties: Port Hueneme Water Agency and Calleguas Municipal Water District)

d. Water Treatment, Plant Site Facilities and Land Lease Agreement (Parties: City of Oxnard and Port Hueneme Water Agency)

e. Navy Utility Service Contract (Parties: Port Hueneme Water Agency and Department of the Navy)

(2) **Metropolitan Water District and Calleguas Municipal Water District Approvals.** As a second, separate and independent condition precedent, Metropolitan Water District (MWD) shall have issued final written approval of any required annexation of the Port Hueneme Agency or its service areas to the boundaries of Metropolitan Water District and Calleguas Municipal Water District and the Agency has transferred the required annexation fees to MWD and the District and the annexation is completed in total.

(3) **Approval of Transfer or Assignment of Fox Canyon Groundwater Management Agency Credits.** As a third, separate and independent condition precedent to the enforcement of this Agreement, unless this condition is expressly waived in writing by the Port Hueneme Water Agency, the parties must obtain written authorization of the Fox Canyon Groundwater Management Agency approval of:

a. The transfer of pumping allocations and/or credits held by Port Hueneme Water Agency customers to Port Hueneme Water Agency;

b. The transfer of pumping allocations and/or credits held by Port Hueneme Water Agency or its customers to United Water Conservation District; and

c. The transfer or assignment of approximately 700 credits held by the Port Hueneme Water Agency or its members to Calleguas Municipal Water District.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year written below.

Dated this 7th day of June 1996.

CITY OF OXNARD

By: _____
Mayor

Approved as to form:

By: _____ 6-4-96
Counsel

UNITED WATER CONSERVATION DISTRICT

By: _____
President

By: _____
Secretary

Exhibit A

EXAMPLE OF FIXED AND VARIABLE OPERATION AND MAINTENANCE COSTS ATTRIBUTABLE TO THE O/H PIPELINE

Fixed operation and maintenance costs attributable to the O/H Pipeline

O/H Enterprise Fund Debt Service
Allocated Overhead
Permits / Licenses
Insurance
Water Quality Services
Basic Telephone Service
Ten Percent (10%) of Employee Salaries
Ten Percent (10%) of Employee Benefits
Ten Percent (10%) of Maintenance Costs

Variable operation and maintenance costs attributable to the O/H Pipeline

District-wide Pump Charge
Freeman Diversion Pump Charge
GMA Pump Charge
Ninety percent (90%) of Employee Salaries
Ninety percent (90%) of Employee Benefits
Ninety percent (90%) of Maintenance Costs
Clothing and Supplies
Utilities
Office Expense
Professional Fees
Rents and leases
Small Tools
Fuel
Travel
Miscellaneous
Depreciation
Capital Items

Oxnard Plain

Exhibit B

Montalvo Forebay

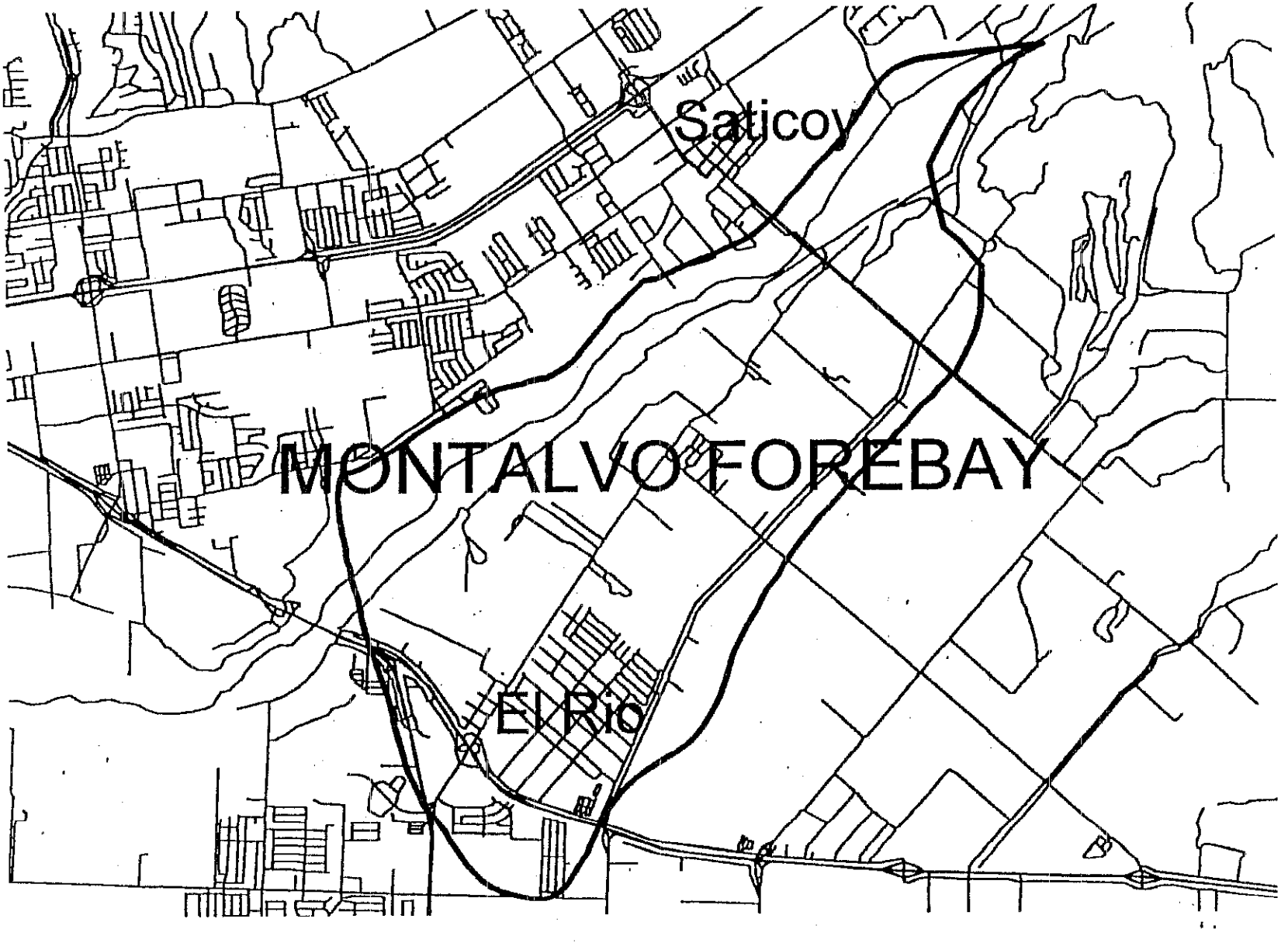

Exhibit C

SAMPLE OVERHEAD ALLOCATION WORKSHEET

	Total # of Billings	% of Total Billings	Allocated Overhead Pool	Total Labor Hours	% of Total Hours	Allocated Overhead Pool	A/P Transactions	% of Total A/P Trans	Allocated Overhead Pool	Revenue	% of Total	Allocated Overhead Pool	Average Overhead Pool	Propos Overhe Allocat Rate
General/GW	1,920	42.16%	436,487	22,860	38.05%	393,886	1,783	40.88%	423,184	1,766,103	25.19%	260,747	378,576	36.6
Freeman	960	21.08%	218,244	4,423	7.36%	76,210	362	8.30%	85,918	1,993,693	28.43%	294,348	168,680	16.2
Hydro	0	0.00%	0	659	1.10%	11,355	74	1.70%	17,563	186,760	2.61%	29,050	14,492	1.4
Recreation	160	3.51%	36,374	14,533	24.19%	250,415	546	12.52%	129,590	795,172	11.34%	117,399	133,444	12.8
OH Pipeline	828	18.18%	188,235	13,053	21.72%	224,908	992	22.74%	235,445	1,682,574	23.99%	248,415	224,251	21.6
PV Pipeline	38	0.83%	8,639	522	0.87%	8,994	99	2.27%	23,497	137,479	1.96%	20,297	15,357	1.4
PTP Pipeline	648	14.23%	147,314	4,035	6.72%	69,525	506	11.60%	120,098	440,509	6.28%	65,037	100,493	9.7
	4,554	100.00%	1,035,293	60,085	100.00%	1,035,293	4,362	100.00%	1,035,293	7,012,290	100.00%	1,035,293	1,035,293	100.0

Exhibit D

this year, penalties would be payable to the GMA because the aggregate amount of the deliveries exceeds the O/H Pipeline GMA Historical Allocation by 20 A/F. If penalties are paid by United on 20 A/F, then the penalty would be allocated to Consumer 1 for the pumping which occurred in Year 1. The accumulated Subcredits for Consumer 1 (-20) would be further decreased in Year 2 by 20 A/F (to -40 A/F) to reflect Year 2 pumping but then increased by 20 A/F (to -20 A/F) to reflect payments made to the GMA and the concurrent reduction in liability to pay future penalties assessed by GMA for past pumping.

In year 3, Consumers 1 and 3 take exactly the amount of their Suballocation while Consumer 2 takes 10 A/F in excess of its Suballocation. Since Consumer 2 has 20 Subcredits on account, the agency may apply 10 Subcredits to its over-pumping. In this year, penalties would be payable to the GMA because the aggregate amount of the deliveries exceeds the O/H pipeline GMA Historical Allocation by 10 A/F. If penalties are paid by United on 10 A/F, then the penalty would be allocated to Consumer 1 for the pumping which occurred in Year 2. The accumulated Subcredits for Consumer 1 (-20) would be increased by 10 A/F (to -10) to reflect payments made to the GMA and the concurrent reduction in liability to pay future penalties assessed by GMA for past pumping.

In year 4, all three Consumers take in excess of their Suballocation. Consumer 2 still holds 10 Subcredits which the agency may apply toward the over-pumping. This will use up all the Subcredits held by Consumer 2. In this year, penalties would be payable to the GMA because the aggregate amount of the deliveries exceeds the O/H pipeline GMA Historical Allocation by 30 A/F. Consumer 1 still has -10 A/F of Subcredits from year 2 pumping and, accordingly, has a liability to pay for the first 10 A/F of penalties assessed this year. In addition, Consumer 1 has incurred a new obligation to pay for the deliveries in excess of Suballocation for this year. Consumer 1 would pay for 20 A/F of over-pumping while Consumer 3 would pay for 10 A/F of over-pumping. None of the Consumers would have any Subcredits left, and none have any remaining liability to pay for future GMA penalties assessed.

Appendix B

City of Oxnard FCGMA Annual Groundwater Extraction Allocation

FOX CANYON GROUNDWATER MANAGEMENT AGENCY

Application for and Summary of
2001 Baseline Allocations and In-Lieu, Storage & Extraction (Conservation) Credits

Please provide the following information:

Owner/Operator's Name: CITY OF OXNARD * WATER PROGRAM
Address: 251 SOUTH HAYES AVENUE, OXNARD, CA 93030-6058
Phone #: (805) 385-8136 FAX: (805) 385-8137

☑ If you own/operate more than one well and want your well allocations combined, please check this box.

City No.	State Well No.	Historical Allocation	X	Reduction Factor		2001 Allocation		2001 Injections		2001 Extractions	
19	1N/22W-01D1	482.204	AF	x 0.85	=	409.873	AF	0.000	AF	0.000	AF
4	1N/22W-03F1	81.180	AF	x 0.85	=	69.003	AF	0.000	AF	0.000	AF
3	1N/22W-03F2	61.686	AF	x 0.85	=	52.433	AF	0.000	AF	0.000	AF
2	1N/22W-03F3	14.412	AF	x 0.85	=	12.250	AF	0.000	AF	0.000	AF
1	1N/22W-03F4	30.186	AF	x 0.85	=	25.658	AF	0.000	AF	0.000	AF
20	1N/22W-03F5	222.950	AF	x 0.85	=	189.508	AF	0.000	AF	827.321	AF
21	1N/22W-03F6	94.354	AF	x 0.85	=	80.201	AF	0.000	AF	3425.764	AF
22	1N/22W-03F7	0.000	AF	x 0.85	=	0.000	AF	0.000	AF	771.162	AF
23	1N/22W-03F8	0.000	AF	x 0.85	=	0.000	AF	0.000	AF	1996.631	AF
13	1N/22W-04F4	1.464	AF	x 0.85	=	1.244	AF	0.000	AF	0.000	AF
17	1N/22W-10B2	0.000	AF	x 0.85	=	0.000	AF	0.000	AF	0.000	AF
16	1N/22W-10B3	0.852	AF	x 0.85	=	0.724	AF	0.000	AF	0.000	AF
	1N/22W-11D1	56.974	AF	x 0.85	=	48.428	AF	0.000	AF	0.000	AF
ER	2N/22W-22Q2	11.868	AF	x 0.85	=	10.088	AF	0.000	AF	0.000	AF
ER	2N/22W-22Q3	28.638	AF	x 0.85	=	24.342	AF	0.000	AF	0.000	AF
	2N/22W-35C3	0.000	AF	x 0.85	=	0.000	AF	0.000	AF	0.000	AF
OHS	2N/22W-34A3	Incl in "Hist		Allocations		Transferred"	AF	0.000	AF	0.000	AF
	TOTALS	1,086.768	AF	x 0.85	=	923.752	AF	0.000	AF	7,020.878	AF

HISTORICAL ALLOCATIONS TRANSFERRED: 5,252.272 AF x 0.85 = **4,464.431 AF**

BASELINE ALLOCATIONS APPROVED: 586.650 AF **USED:** **586.650 AF**

STORAGE CREDITS = 0.000 AF (2001 Injections) - 0.000 AF (2001 Extractions) = **0.000 AF**

EXTRACTION CREDITS = 5,388.183 AF (2001 & Xfer'd Allocations) - 6,434.228 AF (Unaccᵗd Extractions - Baseline Used) = **-1,046.045 AF**

Applicant's Name: KEN ORTEGA (Please Print) — WATER SUPERINTENDENT (Title)

Applicant's Signature: [signature] — 4/24/2002 (Date)

Effective beginning with the 1999 calendar year, credits will be calculated by GMA staff as provided for in Ordinance No. 5

DISPOSITION OF GMA APPLICATION
(For office use only)

☒ Approved
☐ Denied

Conditions of Approval/
Reason(s) for Denial: _____

By: _____ Date _____

This application for credits is valid when signed by the GMA Agency Coordinator.

[signature]
Lowell Preston, Ph.D., GMA Agency Coordinator — Date 4/24/02

Appendix C

Report on Metropolitan's Water Supplies

Date: February 8, 2002 D R A F T

To: Member Agency Managers

From: Ronald R. Gastelum, Chief Executive Officer

Subject: Availability of Metropolitan's Water Supplies

Recent legislation authored by Senator Sheila Kuehl (SB 221) and Senator Jim Costa (SB 610) requires water retailers to demonstrate whether their water supplies are sufficient for certain proposed subdivisions and large development projects subject to the California Environmental Quality Act (CEQA). Although Metropolitan and other water wholesalers do not have verification responsibilities under this legislation, information provided by Metropolitan may be useful to retailers in complying with these responsibilities.

Metropolitan's current Regional Urban Water Management Plan (RUWMP)[1] may provide information to assist member agencies, retailers, cities and counties within Metropolitan's service area in their compliance. To further support this effort, Metropolitan has independently prepared the enclosed report on available water supply and projected demands. As described in these documents, Metropolitan has the capability to provide sufficient water supply, water delivery, and financing of planned facility and resources investments to meet the projected supplemental water demands of its member agencies. This finding is in accordance with Metropolitan's policy objective for water supply reliability. Metropolitan's policy objective for water supply reliability is:

> "*Through the implementation of the Integrated Resources Plan, Metropolitan and its member agencies will have the full capability to meet full-service demands at the retail level at all times.*"[2]

In order for Metropolitan to provide this level of reliability, coordinated and effective water supply development and demand management will be essential. Based on the urban water management plans submitted by the individual member agencies in December 2000,

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[1] The Metropolitan Board of Directors adopted the RUMWP on December 12, 2000 in accordance with its policy objective for water supply reliability for its service area.

[2] The RUWMP is based on the IRP. The contingency of a catastrophic event's impact on quality, quantity, and reliability temporarily interfering with this capability must of course be recognized.

Metropolitan's total regional water supply, as disclosed in its RUMWP, would be sufficient to allow each of the member agencies to meet their projected supplemental water demands for the foreseeable future. Consequently, Metropolitan is confident that the overall water supply reliability of the region can be maintained for the foreseeable future.

If you require additional information or assistance regarding availability of supplemental water supplies and assumptions as to regional demands and supplies, please write to Mr. Steve Arakawa, Group Manager of Water Resources Management, at the following address; and he will promptly respond in writing.

Metropolitan Water District of Southen California
P.O. Box 54153
Los Angeles, CA 90054-0153

Ronald R. Gastelum

s:\man\mam1.doc

Attachment: Report on Metropolitan's Water Supplies

Founder's Garden in Ontario, California – featured in Metropolitan's Liquid Art

Report on Metropolitan's Water Supplies

February 7, 2002

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Report on Metropolitan's Water Supplies

Dated February 7, 2002

MWD
Metropolitan Water District of Southern California

Report on Metropolitan's Water Supplies

TABLE OF CONTENTS

INTRODUCTION

OBJECTIVE OF THE REPORT

The objective of this document, *Report on Metropolitan's Water Supplies,* is to provide the member agencies, retail water utilities, cities and counties within the service area of The Metropolitan Water District of Southern California (Metropolitan), with information that may assist in their compliance with SB 221 (Kuehl) and SB 610 (Costa). Both SB 221 and SB 610 are recently enacted legislation requiring that new development meeting certain criteria provide "substantial evidence" of available water supplies in the event of drought. The report identifies actual and projected demands for water from Metropolitan, as well as the water supplies available to Metropolitan to meet those demands. This report will be updated as new information and circumstances warrant. It should be noted that the information presented in this report is consistent with that utilized in Metropolitan's Regional Urban Water Management Plan dated December 2000.

This report serves two primary purposes. These purposes are to:

- Demonstrate Metropolitan's ability to meet projected demands over the next 20 years and to provide additional resource reserves as a "margin-of-safety" that mitigates against uncertainties in demand projections and risks in implementing supply programs.

- Demonstrate that Metropolitan is implementing a comprehensive plan to secure reliable water supplies in accordance with policy principles and objectives established by Metropolitan's Board of Directors.

REGIONAL APPROACH TO WATER IN SOUTHERN CALIFORNIA

Southern California's challenge in managing its water resources is driven by one of the most fundamental realities of the West – it is an arid region subject to drought. And yet, fulfilling this responsibility of providing a safe and reliable water supply for beneficial uses by a growing population and economy is no easy task, especially given the many diverse interests for the region's water resources. In recent years, it has become clear that a regional approach that integrates the development of local and imported water supplies is needed to solve the problems of supply shortages and water quality. In addition, coordination amongst water providers is key to making cost-effective investments in local and imported water supplies and in infrastructure improvements.

Interaction with Local Entities. Water in Southern California is provided through a complex system of infrastructure operated by many different institutional entities. More than 300 public agencies and private companies provide water on a retail basis to approximately 17 million people living in a 5,200 square-mile area. Metropolitan is the primary wholesale provider of imported water for the region. Metropolitan serves 26 member agencies, comprising 14 cities, 11 municipal water districts, and 1 county authority. Metropolitan's member agencies, in turn, serve customers in more than 145 cities and 94 unincorporated communities.

Metropolitan was formed in 1928 under the Metropolitan Water District Act "for the purpose of developing, storing, and distributing water" to the residents of Southern California. Metropolitan's initial function was the construction and operation of the Colorado River Aqueduct to supplement local supplies. By the early 1970s Metropolitan was receiving delivery of imported water from the California Department of Water Resources using the newly constructed State Water Project facilities. The 1987-92 drought, and other regulatory and institutional changes that occurred before it, resulted in greater uncertainties in the imported supplies available to the region. For the first time, widespread water rationing had to be imposed in 1991.

Lesson Learned: Plan Ahead. In response to these circumstances, Metropolitan and its member agencies redefined Metropolitan's role and responsibilities and took important steps to secure and maintain water supply reliability.

- Metropolitan's Board of Directors established the policy objective for water supply reliability as part of its Integrated Resources Plan (IRP). The IRP was approved by the Board in January 1996. This policy objective is:

  Through the implementation of the Integrated Resources Plan, Metropolitan and its member agencies will have the full capability to meet full-service demands at the retail level at all times.

- The IRP calls for a coordinated regional approach to secure reliable supplies for Southern California over the long-term future. Coordinated efforts among Metropolitan, the member agencies, retailers, and other water providers are essential to realizing the benefit of a diversified program combining conservation with the development of all potential sources of supply – local surface runoff and groundwater, recycled water, desalinated seawater, and the imported supplies provided by Metropolitan.

- In order to meet the policy objective for water supply reliability, the IRP and Metropolitan's Strategic Plan Policy Principles established Metropolitan as a regional provider of water and redefined Metropolitan's responsibilities in this role. Metropolitan's responsibilities include:
  - Supporting the implementation of long-term conservation measures and development of additional local resources, such as recycling and reuse, groundwater clean-up, and ocean desalination.
  - Securing additional imported supplies through programs that increase the availability of water delivered through the Colorado River Aqueduct and the California Aqueduct.
  - Improving the region's water infrastructure needed to distribute, treat and store imported water.
  - Developing a comprehensive management plan for dealing with periodic surplus and shortage conditions.

Financial Strength: Key to Adaptability. The hallmark of Metropolitan's success in securing water supplies in anticipation of future demand is its strong financial history – with one of the highest public bond ratings in California. Most recently, Metropolitan has approved a new rate structure that provides added flexibility and adaptability for meeting an expanding range of uncertainties. These uncertainties include: (1) the difficulty in predicting changes in growth over the next several years, (2) the risks in implementing new local and regional supplies, (3) future water quality and environmental restrictions, and (4) climate change currently being studied as another factor that may effect water availability. Experts have cited Metropolitan's ability to invest in necessary supply and infrastructure projects as key to the region's adaptability to these uncertainties. For example, the $1 billion Inland Feeder pipeline will allow Southern California to import and store greater volumes of water from Northern California in the wintertime when it's available, thus minimizing supply deliveries in the summer, the potential adverse impacts to the environment and other users competing for supplies. In addition, Metropolitan's new rate structure permits agencies the flexibility to secure their supplies from Metropolitan's imported sources and through expanded development of conservation water recycling, desalination or water transfers.

CONTENTS OF THE REPORT

The sections of the report are as follows:

- **Background**. This section discusses key issues affecting water supply certainty, Metropolitan's policy objectives for water supply reliability, its resource strategy and the demonstration of progress in meeting objectives and implementing strategy.

- **Approach**. This section describes the major steps in forecasting water demands, assessing supply capabilities, and evaluating the sufficiency of the supplies to meet demands.

- **Findings**. This section presents the evaluation of the availability of Metropolitan's water supplies to meet projected supplemental demands and reserve supplies that provide a "margin of safety" to mitigate against uncertainties in demand projections and risks in implementing supply programs.

- **Appendix A**. This appendix documents Metropolitan's demand forecasts.

- **Appendix B**. This appendix presents an inventory of the resource programs that can be reasonably relied upon to deliver supplies through the Colorado River Aqueduct and documents the source of supply, expected supply capability, and supporting information for each program.

- **Appendix C**. This appendix presents an inventory of the resource programs that can be reasonably relied upon to deliver supplies through the California Aqueduct and documents the source of supply, expected supply capability, and supporting information for each program.

- **Appendix D**. This appendix presents an inventory of the resource programs that can be reasonably relied upon to deliver supplies from in-basin storage and documents the source of supply, expected supply capability, and supporting information for each program.

- **Disclosure Statement**. Statement of disclosure covering this report is provided.

BACKGROUND

The last five years have been a time of enormous change in the way in which California water is viewed and managed well into the future. For example,

- The passage of SB 221 and SB 610 has placed on retail water providers the responsibility of demonstrating sufficient and reliable water supplies.
- There is increasing need for freshwater supplies among urban, agricultural and environmental interests.
- Water agencies are required to adapt to more water quality and environmental regulations in the production of drinking water, including protections for critical habitat and endangered species.
- Conservation, recycling and seawater desalination are playing an increasing role in meeting water supply needs.
- There is greater focus on local watershed management for supply and quality enhancements.
- There is greater recognition of the strategic value of underground and surface storage to meet water supply needs during shortages and emergencies.
- Recent water transfers, which move water from willing sellers to willing buyers, demonstrate the value of water transfers as dependable annual and dry-year supplies.

These changes present new risks and opportunities for securing sufficient and reliable water supplies. As a result, the emerging issue of concern is whether sufficient water supplies are available to meet existing and projected demands over the long-term.

METROPOLITAN'S POLICY OBJECTIVES FOR WATER SUPPLIES

In response to the question of sufficient water supplies, the Metropolitan Board of Directors established policy objectives regarding water supply reliability and Metropolitan's role and responsibilities in providing water service on a wholesale basis.

Water Supply Reliability. Metropolitan's Board of Directors established the policy objective for water supply reliability as part of its Integrated Resources Plan (IRP). The IRP was approved by the Board in January 1996. This policy objective is:

> *Through the implementation of the IRP, Metropolitan and its member agencies will have the full capability to meet full-service demands at the retail level at all times.*

This policy objective calls for close coordination between Metropolitan, the member agencies, and retail providers in integrating the development of imported and local resources to meet retail demands in an efficient and affordable way. Wholesale and retail water providers, including Metropolitan had been independently planning investments in projects and programs within the service area to address water reliability needs. Without a coordinated and balanced regional response by water providers to growing demands, the

region could run the risk of failing to demonstrate the availability of sufficient water supplies and risk of overspending on its water supply and infrastructure.

Metropolitan's Role and Responsibilities. Recognizing the need for coordination with member agencies and retail water providers, the IRP and the Strategic Plan Policy Principles (adopted in December 1999) established Metropolitan's role as a regional provider and redefined its responsibilities. The successful accomplishment of the policy objective on water supply reliability places significant responsibility on Metropolitan to provide leadership in several areas. These areas include: (1) implementing water management programs that support the development of cost-effective local resources, (2) securing additional imported supplies through programs that increase the availability of water delivered through the Colorado River Aqueduct and the California Aqueduct, (3) providing the infrastructure needed to integrate imported and local sources of supply, (4) establishing a comprehensive management plan for dealing with periodic surplus and shortage conditions, and (5) developing a rate structure that strengthens Metropolitan's financial capabilities to implement water supply programs and build infrastructure improvements.

METROPOLITAN'S WATER RESOURCE STRATEGY

The challenge for Metropolitan is to develop and implement a comprehensive water resource strategy that can adapt to continuous change, safeguard against uncertainties, and benefit from new opportunities. The key elements of Metropolitan's strategy are:

Portfolio of Diversified Supplies. Metropolitan continues to develop a portfolio of diversified supplies in accordance with the IRP and Metropolitan's Regional Urban Water Management Plan (RUWMP). The IRP established policy guidelines for investing in water conservation, water recycling, desalination, Colorado River deliveries, State Water Project deliveries, water transfers, and storage in groundwater basins and surface reservoirs. The RUWMP was adopted by Metropolitan's Board in December 2000 consistent with the California Urban Water Management Planning Act (Water Code Sections 10610 through 10656) and presents Metropolitan's plans for reasonable and practical efficient water uses, recycling and conservation activities, and drought contingencies.

The diverse water project investments in these plans reduce the risk of failure in any single part of the portfolio. Risks stem from cost, quality, or supply availability. It also reduces the potential impact of a severe drought or an emergency such as a major earthquake. The portfolio of diversified supplies avoids the pitfalls of "putting all your eggs in one basket."

Supply Reserves to Mitigate Uncertainties. Metropolitan plans to mitigate for supply uncertainties by continuing to secure supplies and build infrastructure improvements that are available in advance of the time of need and can provide back up capabilities. This adaptive management approach creates supply reserves that maintain Metropolitan's flexibility in responding to changes in demand and supply conditions.

New Rate Structure. Metropolitan's Board of Directors approved a new rate structure in October 2001. The rate structure provides the necessary financing capabilities to support the IRP and strategic planning vision that Metropolitan is a regional provider of services, maintains the reliable delivery of imported water supplies, encourages the development of additional local supplies like recycling and conservation, and accommodates a water transfer market. Through its regional services, Metropolitan ensures a baseline of reliability and quality for imported water deliveries in its service area. By unbundling its full-service water rate, Metropolitan provides greater opportunity for member agencies to competitively manage their supplies and demand to meet future needs in a responsible, least-cost manner.

DEMONSTRATING THE AVAILABILITY OF SUFFICIENT SUPPLIES

In order to demonstrate the availability of sufficient water supplies for the region, Metropolitan must continue to fulfill its responsibilities as the regional provider under the IRP and Strategic Plan. Metropolitan's progress in these areas of responsibility is as follows:

Implementing water management programs that support the development of cost-effective local resources. Metropolitan has established and implemented programs to provide financial incentives to member agencies in the development of local resources. These programs include the Local Projects Program (water recycling and groundwater recovery), Conservation Program, and Request-for-Proposal process for ocean desalination projects. These programs are meeting the resource objectives in the IRP.

The status and progress of Metropolitan's efforts in implementing programs to support the development of conservation and local resources management programs are documented in Metropolitan's RUWMP and Metropolitan's Annual Progress Report to the California State Legislature on Achievements in Conservation, Recycling and Groundwater Recharge, dated February 1, 2002.

Securing additional imported supplies through programs that increase the availability of water delivered through the Colorado River Aqueduct and the California Aqueduct. Metropolitan has implemented several programs to continue the reliable deliveries of water supplies through the Colorado River Aqueduct, the California Aqueduct and the development of in-basin groundwater storage. These efforts include participating in federal and state initiatives such as the California Water Use Plan for the Colorado River, CALFED for the Bay-Delta, and the Sacramento Valley Water Management Agreement. Beyond these initiatives, Metropolitan has acquired additional supplies through cooperative agreements and business partnerships with entities in the Central Valley and within the Colorado River system to implement water transfers, storage, conservation and land management programs. Finally, in accordance with Metropolitan's IRP and Strategic Plans, Metropolitan and the member agencies have moved ahead in maximizing the use of available water supplies through in-basin groundwater conjunctive use programs.

The status and progress of Metropolitan's efforts in implementing programs to secure additional supplemental imported water supplies are documented in the Metropolitan's RUWMP and this document, *Report on Metropolitan's Water Supplies*.

Providing the infrastructure needed to integrate imported and local sources of supply. Metropolitan's Capital Investment Plan (CIP) includes projects that have been identified from its studies of projected water needs that are embodied in Board-approved documents such as the IRP, Distribution System Overview Study, and the Chief Executive Officer's Business Plan. The identification, assessment and prioritization of 155 reliability and rehabilitation projects have been completed in the CIP.

The status and progress of Metropolitan's infrastructure improvements are documented in Metropolitan's Capital Investment Plan. This plan is presented to Metropolitan's Board of Directors as part of the annual budget review.

Establishing a comprehensive management plan for dealing with periodic surplus and shortage conditions. In April 1999, Metropolitan's Board of Directors adopted the Water Surplus and Drought Management Plan (WSDM Plan). This plan will guide the management of Metropolitan's water supplies during surplus and shortage conditions to achieve the reliability goals of the IRP.

The establishment of a comprehensive management plan for dealing with periodic surplus and shortage conditions is documented in the RUWMP and Metropolitan Report No. 1150, *Water Surplus and Drought Management Plan*.

The new rate structure strengthens Metropolitan's financial capabilities to implement water supply programs and build infrastructure improvements.

The approval of the new rate structure is documented in the October 2001 Board Letter.

APPROACH

The approach to evaluating the availability of Metropolitan's supplies involves three basic steps: (1) forecast supplemental water demands, (2) assess Metropolitan's supply capabilities, and (3) compare the supplemental demand forecasts and supply capabilities.

DEMAND FORECASTS

Water demands on Metropolitan are projected according to four key parameters: retail demands, local replenishment demands, local supplies, and Metropolitan system storage requirements. The methodology and estimates of water demand projections are documented in Appendix A.

- **Retail Demands**. To forecast retail water demands, Metropolitan utilizes an econometric model, the MWD-MAIN Water Use Forecasting System that relates water use to independent variables such as population, housing, employment, income, price, weather, and conservation. This model has demonstrated performance as many water resource agencies across the country use similar versions of this model including the U.S. Army Corps of Engineers, the U.S. Geological Survey, the state of New York, the cities of Phoenix, Las Vegas, and Portland and some of Metropolitan's member agencies.

  The demographic and economic variables in the forecast are based on the Southern California Association of Governments (SCAG) Regional Transportation Plan (98RTP) and the San Diego Association of Government (SANDAG) 2020 Forecast. SCAG and SANDAG demographic projections are supported by environmental impact reports and based on city, county and regional general plans. If a development within Metropolitan's service area is included in the local general plans utilized in the SCAG and SANDAG projections then there should be a linkage between the water demands for that development and the supplies made available by Metropolitan and the member agencies.

- **Local Replenishment Demands**. Local replenishment demands refer to the member agencies' annual need for water to recharge groundwater basins and surface reservoirs. Some of this need is met by the member agencies' purchases of deliveries under Metropolitan's Long-Term Seasonal Storage Program. These demands include the water delivered by Metropolitan to member agencies and stored by member agencies for use in future years and not the current year.

- **Local Supplies**. Local supplies include local groundwater and surface water production, Los Angeles Aqueduct deliveries, water recycling, groundwater recovery, and ocean desalination. Member agencies and retail water providers produce these local supplies. Over the next 20 years, Metropolitan's member agencies have projected the production from local resources development will increase by 17% and meet up to 55% of the total retail demands in 2020. Changes in the timing and supply

yield of local resources projects would result in a corresponding change in supplemental water demands on Metropolitan.

- **Metropolitan System Replenishment Requirements**. As part of its resource strategy, imported water deliveries that are available during average and wet years would be stored in Metropolitan's surface reservoirs and groundwater storage accounts located within its service area and within the California Aqueduct and Colorado River Aqueduct systems. In addition to meeting consumptive and replenishment demands, Metropolitan would also require supplies in average and wet years to refill its surface reservoirs and groundwater conjunctive use accounts.

Water demands on Metropolitan are calculated as the retail demands plus local replenishment demands less local supplies. In average and wet years, Metropolitan's system replenishment requirements would be included. The Regional Urban Water Management Plan (RUWMP) prepared in December 2000 includes forecasts of demands on Metropolitan calculated in this manner. These demand projections are shown in the following table. A comparison of the supplemental demands projected according to Metropolitan's RUWMP and according to the member agencies' urban water management plans is also shown. The RUWMP projections are 7 to 11 percent higher than the projections of the member agencies. This difference indicates that Metropolitan's supplies developed in accordance with the RUWMP would provide a measure of "margin of safety" or flexibility to accommodate some delays in local resources development or adjustments in development plans.

Demands on Metropolitan
(in million acre-feet)

Demands on Metropolitan (Average Year)	2005	2010	2015	2020
MWD RUWMP[1]	1.90	1.95	2.08	2.30
Member Agencies Plans[2]	1.68	1.82	1.94	2.09
Difference	0.22 11%	0.13 7%	0.14 7%	0.21 9%

1 Based on Metropolitan's Regional Urban Water Management Plan adopted in December 2000.
2 Based on Metropolitan review of urban water management plans submitted by member agencies in December 2000.

SUPPLY CAPABILITIES

Metropolitan's supply capabilities are the expected quantities of water that can be provided by specific supply programs included in Metropolitan's resource plan. Supply capabilities presented in this report vary according to year types (wet, average, and dry hydrologic conditions). In order to determine Metropolitan's supply capabilities, available sources of

supply have been inventoried and the associated supply yields have been estimated. The supply inventory and yields are documented in Appendices A, B, and C.

- **Supply Inventory**. Metropolitan's available supplies have been inventoried in three basic categories: (1) Colorado River Aqueduct Deliveries, (2) California Aqueduct Deliveries, and (3) In-Basin Storage Deliveries.

  In addition, the supplies are further categorized according to their implementation status. Supplies that are currently available are considered to have a high degree of certainty and reliability as they have successfully completed the critical implementation requirements. The currently available supplies refer to those resource programs that have completed environmental review, have funds appropriated or budgeted for implementation or construction, have requested or received permits and regulatory approvals and are operationally on-line by a date certain. Supplies that are under development are well defined in terms of specific projects, but are subject to some uncertainties in timing and supply yield, as they have not yet completed the critical implementation requirements. The supplies under development refer to those resource programs that are undergoing technical feasibility studies, environmental review, and negotiations for final agreements to implement and operate. The inventory of Metropolitan's supplemental supplies is shown in the following table.

- **Supply Capabilities**. The maximum supply capability of each of the resource programs has been estimated for various hydrologic events that occur in years 2005, 2010, 2015, and 2020. The hydrologic events include a multiple year dry period (repeat of 1990-92 drought), a single dry year (repeat of 1977 below-normal conditions), average year (statistical average), and wet year (repeat of 1985 above-normal condition). The expected supply capability has been estimated according to two key considerations.

  (1) Simulations of deliveries from the Colorado River Aqueduct, California Aqueduct and in-basin storage. The historical sequence of 77 hydrologic years from 1922 to 1998 are repeated into the future in order to determine the Metropolitan's water delivery capabilities under the weather and system operating conditions for the year types.
  (2) Deliveries based on historical record, written contracts or other proof, financing, and federal, state, and local permits/approvals to the extent each is applicable.

- **Supply Sufficiency**. The demand forecasts and supply capabilities have been compared over the next 20 years and under varying hydrologic conditions. These comparisons determine the supplies that can be reasonably relied upon to meet projected supplemental demands and to provide resources reserves that can provide a "margin of safety" to mitigate against uncertainties in demand projections and risks in implementing supply programs.

Metropolitan's Water Supplies

Colorado River Aqueduct Deliveries

Currently Available:
- Base Apportionment (Priority 4)
- IID/MWD Conservation Program
- Interim Surplus Guidelines/Priority 5 Apportionment
- Off Aqueduct Storage
  - Hayfield Storage Program
  - Central Arizona Banking Demonstration

Under Development:
- Coachella & All-American Canal Lining Projects
- SDCWA/IID Transfer
- PVID Land Management Program
- Off-Aqueduct Storage/Transfer Programs
  - Cadiz Groundwater Storage and Dry-Year Supply Program
  - Lower Coachella Valley Groundwater Storage Program
  - Upper Chuckwalla Storage Program
  - Central Arizona Banking Program

California Aqueduct Deliveries

Currently Available:
- SWP Entitlement Deliveries
- San Luis Reservoir Carryover
- Advance Delivery with Coachella Valley WD and Desert WA
- Semitropic Water Banking and Exchange Program
- Arvin-Edison Program Water Management Program
- San Bernardino Valley MWD Program
- Spot Market Transfers

Under Development:
- Delta Improvements
- Kern Delta WD Program
- Additional Transfers/Storage (San Bernardino Conjunctive Use Program, Westside Valley transfers, and Eastside Valley Transfers)

In-Basin Storage Deliveries

Currently Available:
- Diamond Valley Lake
- Flexible Storage in Castaic Lake and Lake Perris
- Groundwater Conjunctive Use Programs
  - Long-Term Seasonal Storage Program
  - North Las Posas Storage Program

Under Development:
- Groundwater Conjunctive Use Programs
  - Raymond Basin Storage Program
  - Proposition 13 Storage Programs
  - Additional Programs

FINDINGS

In summary, this analysis finds that current practices allow Metropolitan to bring water supplies on-line at least ten years in anticipation of demand with a very high degree of reliability. If all imported water supply programs and local projects proceed as planned, with no change in demand projections, reliability could be assured beyond 20 years.

The availability of Metropolitan's water supplies is determined by comparing total projected water demand and the expected water supply over the next 20 years. These comparisons are shown in the following graphs and tables. They demonstrate that there are sufficient supplies that can be reasonably relied upon to meet projected supplemental demands and that there are additional reserve supplies that could provide a "margin of safety" to mitigate against uncertainties in demand projections and risks in fully implementing all supply programs under development.

In more detail, the findings of the *Report on Metropolitan's Water Supplies* are:

Metropolitan's current practice of implementing supply programs in advance of need has assured reliable supplemental water deliveries:

- **Measure of Certainty**. Consistent with current practice, Metropolitan has and will continue to develop supplies that are available at least 10 years in advance of need in order to ensure water supply reliability. This advance implementation recognizes that several years may be required for a program to become fully operational and reach ultimate production capability. In addition, the advance supply provides a reserve capability that safeguards against potential demand and supply uncertainties during the interim years, while being an investment that is fully utilized at the time of need. This practice provides reliability without wasted cost.

Metropolitan has a comprehensive plan to secure reliable water supplies:

- **Implementing a Comprehensive Supply Plan**. Metropolitan is implementing a comprehensive plan to secure water supplies without disrupting the current practice of bringing supply programs on-line in advance of need. As a result, there are supplies that are currently available at least 10 years in advance of need and those that are planned and under development.
- **Securing Reliability beyond 20 Years**. If all of Metropolitan's supply programs were implemented under this comprehensive resource plan and if current trends for retail demands and local supplies continue, Metropolitan would have the capability to reliably meet projected water demands through 2030.
- **Providing Flexibility in Demand Projections**. Based on a conservative approach, the supplemental demand projections presented in Metropolitan's RUWMP and this report are 7 to 11 percent higher than the projections presented in the member agencies' urban water management plans. This difference indicates that Metropolitan's water supplies developed in accordance with the RUWMP would provide a "margin of safety" or

measure of flexibility to accommodate some delays in local resources development or adjustment in development plans.

Metropolitan's existing supply capabilities provide long-term reliability:

Based on water supplies that are currently available, Metropolitan already has in place the existing capability to:

- Meet 100 percent of its member agencies' projected supplemental demands (consumptive and replenishment needs) over the next 20 years in average and wet years.
- Meet 100 percent of its member agencies' projected supplemental demands (consumptive and replenishment needs) over the next 15 years in multiple dry years. This existing capability also provides a 7 to 12 percent reserve supply. This reserve capacity and the purchase of spot market transfers would mitigate unexpected changes in demand or supply conditions over the next 15 years.
- Meet 100 percent of its member agencies' projected supplemental demands over the next 10 years in single dry years. This existing capability also provides a 7 24 percent reserve supply during the next 10 years. This reserve capacity and the purchase of spot market transfers would mitigate unexpected changes in demand or supply conditions over the next 10 years.

With the supplies under development, Metropolitan can reliably meet projected supplemental demands beyond the next 20 years:

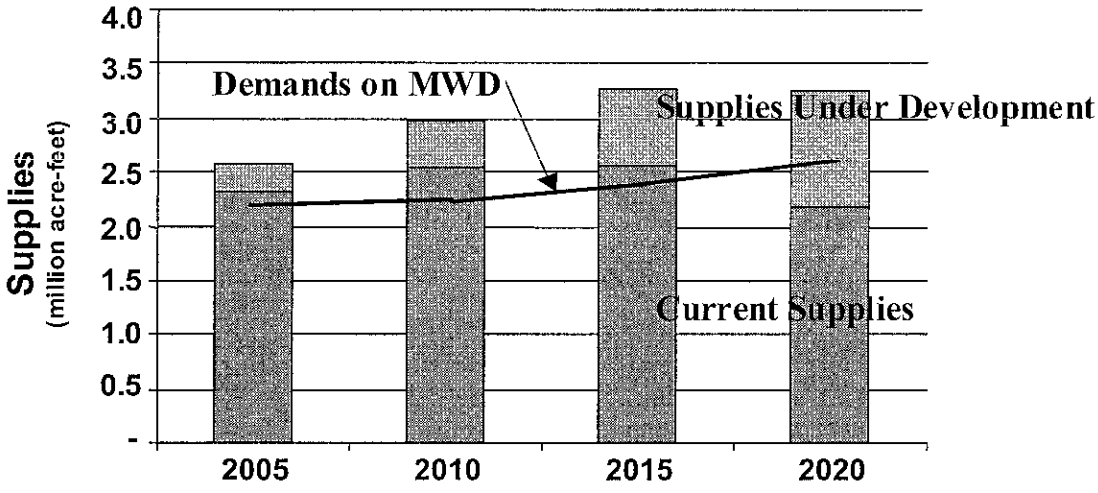
With the addition of all water supplies that are under development, Metropolitan will have the capability to:

- Meet 100 percent of its member agencies' projected supplemental demands over the next 20 years even under a repeat of the worst drought.
- Provide a 15 to 20 percent reserve supply (depending on hydrologic conditions) that could mitigate the risk of local or imported resource projects not performing up to expectations and provide greater assurances in meeting demands during dry hydrology.
- Make available sufficient deliveries for the replenishment of local and regional storage.

To further assure reliability, Metropolitan has established a comprehensive management plan for dealing with periodic surplus and shortage conditions:

- Metropolitan's Board of Director's adopted the Water Surplus and Drought Management Plan (WSDM Plan) to manage regional water supplies to minimize adverse impacts of water shortages to retail customers.

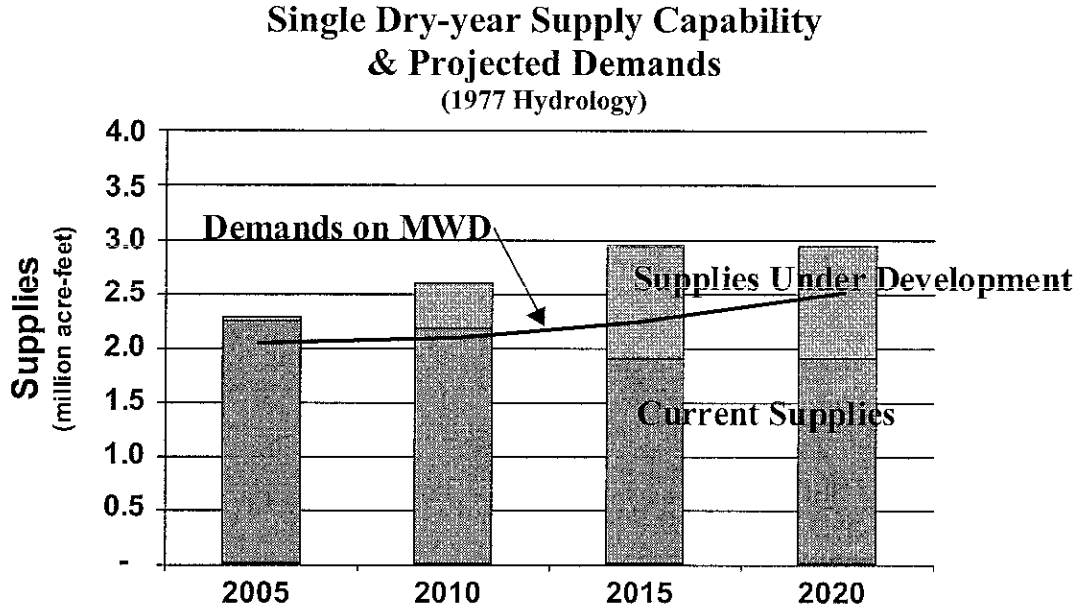
Multiple Dry-year Supply Capability & Projected Demands
(1990-92 Hydrology)



Supply Capability[1] & Potential Reserve or Replenishment

	2005	2010	2015	2020
		(acre-feet per year)		
Current Supplies				
Colorado River[2]	992,800	1,131,800	1,183,000	820,000
California Aqueduct	960,300	1,016,100	986,100	960,300
In-Basin Storage	336,700	390,000	390,000	390,000
Supplies Under Development				
Colorado River[2]	217,500	118,200	67,000	430,000
California Aqueduct	50,000	245,000	440,000	440,000
In-Basin Storage	-	99,100	200,000	200,000
Maximum Supply Capability[1]	**2,557,300**	**3,000,200**	**3,266,100**	**3,240,300**
Total Demands on Metropolitan[3] (Firm & Replenishment)	**2,199,300**	**2,251,700**	**2,360,700**	**2,572,500**
Potential Reserve & System Replenishment Supply	**358,000**	**748,500**	**905,400**	**667,800**

1 -- Represents expected supply capability for resource programs.
2 -- Total Colorado River Aqueduct Deliveries limited to CRA capacity (1,250,000 acre-feet per year).
3 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies.

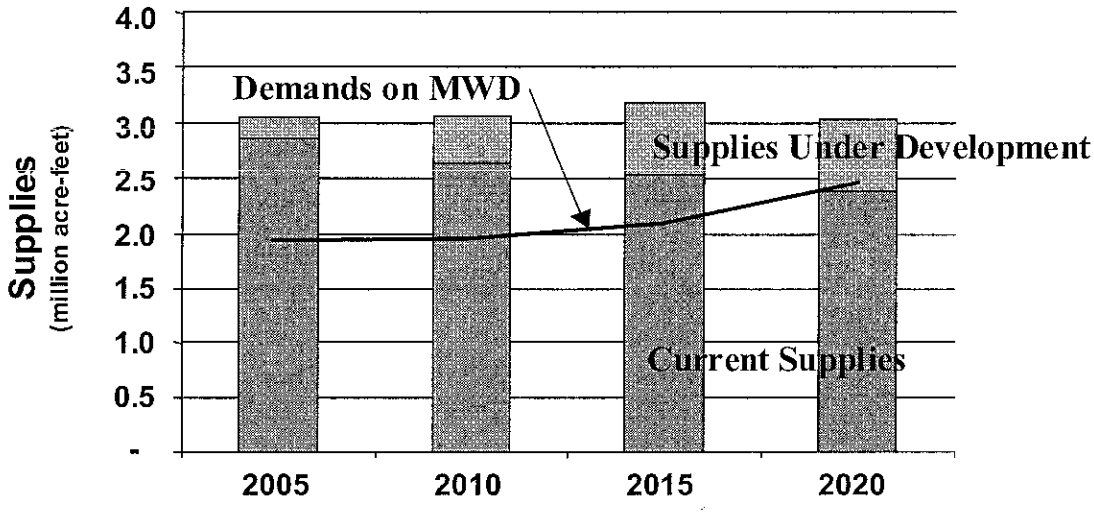


Supply Capability[1] & Potential Reserve or Replenishment

	2005	2010	2015	2020
		(acre-feet per year)		
Current Supplies				
Colorado River[2]	1,250,000	1,181,800	870,000	870,000
California Aqueduct	625,300	625,300	650,300	650,300
In-Basin Storage	370,000	390,000	390,000	390,000
Supplies Under Development				
Colorado River[2]	-	68,200	380,000	380,000
California Aqueduct	50,000	245,000	440,000	440,000
In-Basin Storage	-	99,100	200,000	200,000
Maximum Supply Capability[1]	**2,295,300**	**2,609,400**	**2,930,300**	**2,930,300**
Total Demands on Metropolitan[3] (Firm & Replenishment)	**2,093,100**	**2,145,000**	**2,270,900**	**2,494,900**
Potential Reserve & System Replenishment Supply	**202,200**	**464,400**	**659,400**	**435,400**

1 -- Represents expected supply capability for resource programs.
2 -- Total Colorado River Aqueduct Deliveries limited to CRA capacity (1,250,000 acre-feet per year).
3 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies.

Average-year Supply Capability & Projected Demands

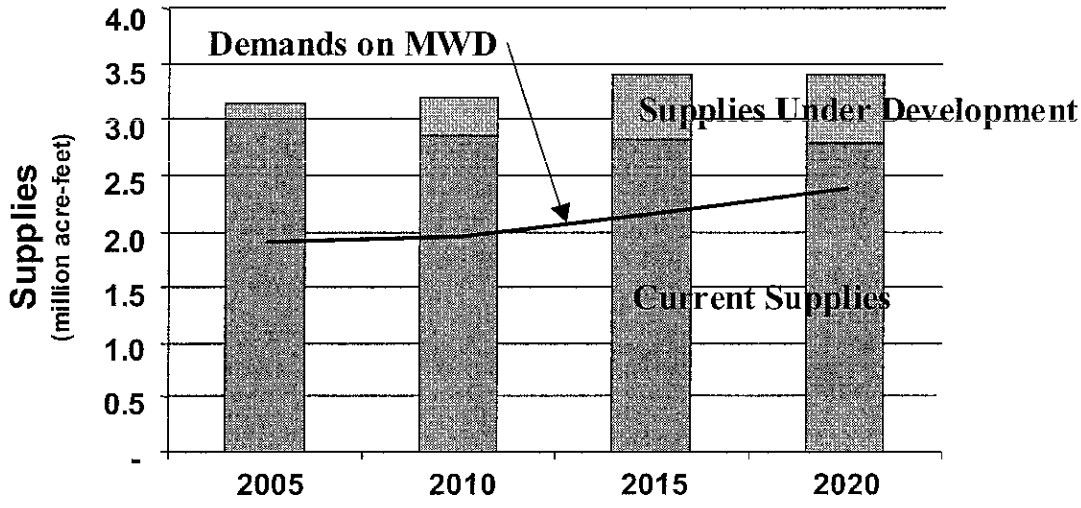


Supply Capability[1] & Potential Reserve or Replenishment

	2005	2010	2015	2020
		(in acre-feet per year)		
Current Supplies				
Colorado River[2]	1,089,300	850,900	819,500	673,000
California Aqueduct	1,780,800	1,783,200	1,723,900	1,714,900
In-Basin Storage	-	-	-	-
Supplies Under Development				
Colorado River[2]	160,700	368,700	388,700	388,700
California Aqueduct	20,000	65,000	220,000	220,000
In-Basin Storage	-	-	-	-
Maximum Supply Capability[1]	**3,050,800**	**3,067,800**	**3,152,100**	**2,996,600**
Total Demands on Metropolitan[3] (Firm & Replenishment)	**1,901,400**	**1,953,800**	**2,076,500**	**2,390,000**
Potential Reserve & System Replenishment Supply	**1,149,400**	**1,114,000**	**1,075,600**	**606,600**

1 -- Represents expected supply capability for resource programs.
2 -- Total Colorado River Aqueduct Deliveries limited to CRA capacity (1,250,000 acre-feet per year).
3 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies.

Wet-year Supply Capability & Projected Demands
(1985 Hydrology)



Supply Capability[1] & Potential Reserve or Replenishment

	2005	2010	2015	2020
		(acre-feet per year)		
Current Supplies				
Colorado River[2]	1,126,500	975,300	955,300	908,800
California Aqueduct	1,882,200	1,882,200	1,882,200	1,882,200
In-Basin Storage	-	-	-	-
Supplies Under Development				
Colorado River[2]	123,500	274,700	294,700	341,200
California Aqueduct	20,000	65,000	220,000	220,000
In-Basin Storage	-	-	-	-
Maximum Supply Capability[1]	**3,152,200**	**3,197,200**	**3,352,200**	**3,352,200**
Total Demands on Metropolitan[3] (Firm & Replenishment)	**1,917,700**	**1,973,300**	**2,102,600**	**2,329,600**
Potential Reserve & System Replenishment Supply	**1,234,500**	**1,223,900**	**1,249,600**	**1,022,600**

1 -- Represents expected supply capability for resource programs.
2 -- Total Colorado River Aqueduct Deliveries limited to CRA capacity (1,250,000 acre-feet per year).
3 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies.