

San Diego County Water Authority 2004 Annual Water Supply Report

Supply Reliability Through Diversification



**San Diego County
Water Authority**

June 2004

Prepared by the
Water Resources Department

Available on the Internet at
www.sdcwa.org

2004 Annual Water Supply Report

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Section 1 - Introduction

The San Diego County Water Authority Administrative Code (Section 8.00.050) requires the Water Authority to provide its member agencies, the County of San Diego, and each city in the County of San Diego an annual statement regarding the Water Authority's water supplies, implementation of Water Authority plans, and programs to meet the future water supply requirements of its member agencies. This Report satisfies the Administrative Code requirements.

Section 3.1 of this Report provides documentation on the existing and planned water supplies being developed by the Water Authority, including the Water Authority-Imperial Irrigation District water transfer, All American and Coachella Canal lining projects, and seawater desalination. This documentation may be used by the Water Authority's member agencies in preparation of the water supply assessments and written verifications required under state law [Reference Water Code Sections 10910 through 10914 and Government Code Sections 65867.5, 66455.3, and 66473.7 and (commonly referred to as SB 610 and SB 221)].

Section 3.2 of this Report contains information regarding imported water supplies from Metropolitan Water District of Southern California's (Metropolitan's) 2003 Water Supply Report. When preparing the assessments and verifications for projects within its respective service areas, the Water Authority member agencies should use this Report, Metropolitan's March 2003 Report, and additional information developed by the member agency on local demands and supplies.

The Water Authority's 2000 Urban Water Management Plan (2000 UWMP) and Regional Water Facilities Master Plan (Master Plan) identify development of a diverse mix of resources to meet water supply reliability needs within the San Diego region. Development of a diverse supply provides for flexibility and adaptability in the resource mix to handle potential risks associated with managing and developing supplies. These risks could include environmental constraints, lack of political will, water supply contamination, and/or lack of funding.

Development of local supplies by the Water Authority's member agencies is a critical element to securing reliability. Therefore, Section 2.3 of this Report provides a brief discussion on the management and development of local supplies within the San Diego region compared with the supply targets included in the 2000 UWMP.

Senate Bills 610 and 221 – Water Availability and Land Use Approval

Senate Bill (SB) 610 and SB 221 amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the environmental documentation of certain large proposed projects. SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are available for certain large residential subdivisions of property prior to approval of a tentative map.

Section 2 - Regional Water Demand and Supply Overview

The Water Authority is a regional water agency, serving 23 member agencies within its service area (Figure 1). The Water Authority serves approximately 97% of San Diego County’s population and provides 75-95% of the water utilized, depending upon the amount of local supply. The County Water Authority Act (Act), adopted by the California State Legislature, states that the Water Authority “as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs.”

2.1 Regional Water Demands

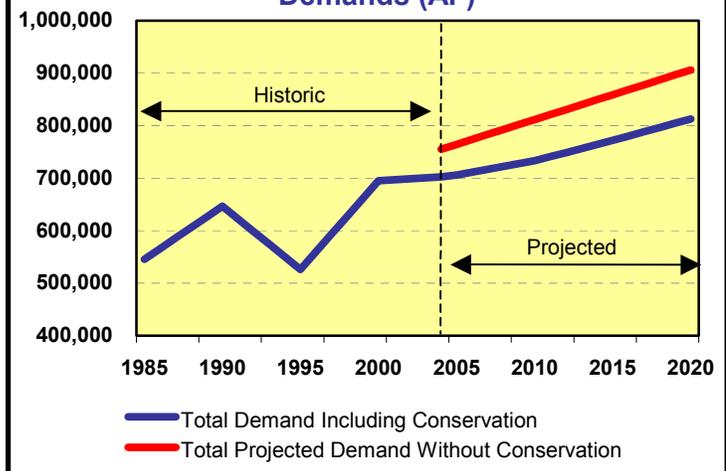
In fiscal year (FY) 2003, water demand within the Water Authority’s service area was about 649,600 acre-feet (AF). Imported supplies accounted for a significant percentage of the water used during the year. This considerable dependence on water sources from outside the region is attributable to low local surface and groundwater supplies, which resulted from several years (1999 – 2002) of below-normal local rainfall. In addition, projected development of additional member agency local supplies was not fully implemented by the end of FY 2003. Although imported water demands were above projected estimates, actual total use for FY 2003 tracked slightly below projected water demands.

**Figure 1
Water Authority Service Area**



Figure 2 shows historic regional water demand and total normal year water demand projections, with and without conservation. Under the current forecast, which is included in the Water Authority’s 2000 UWMP, water demands with conservation are projected to reach 813,000 AF by the year 2020. The Water Authority forecasts demands using its demand forecast model (CWA-MAIN), which utilizes demographic and economic data derived from the San Diego Association of Governments (SANDAG) regional growth forecast.

**Figure 2
Regional Historic and Projected Normal Demands (AF)**

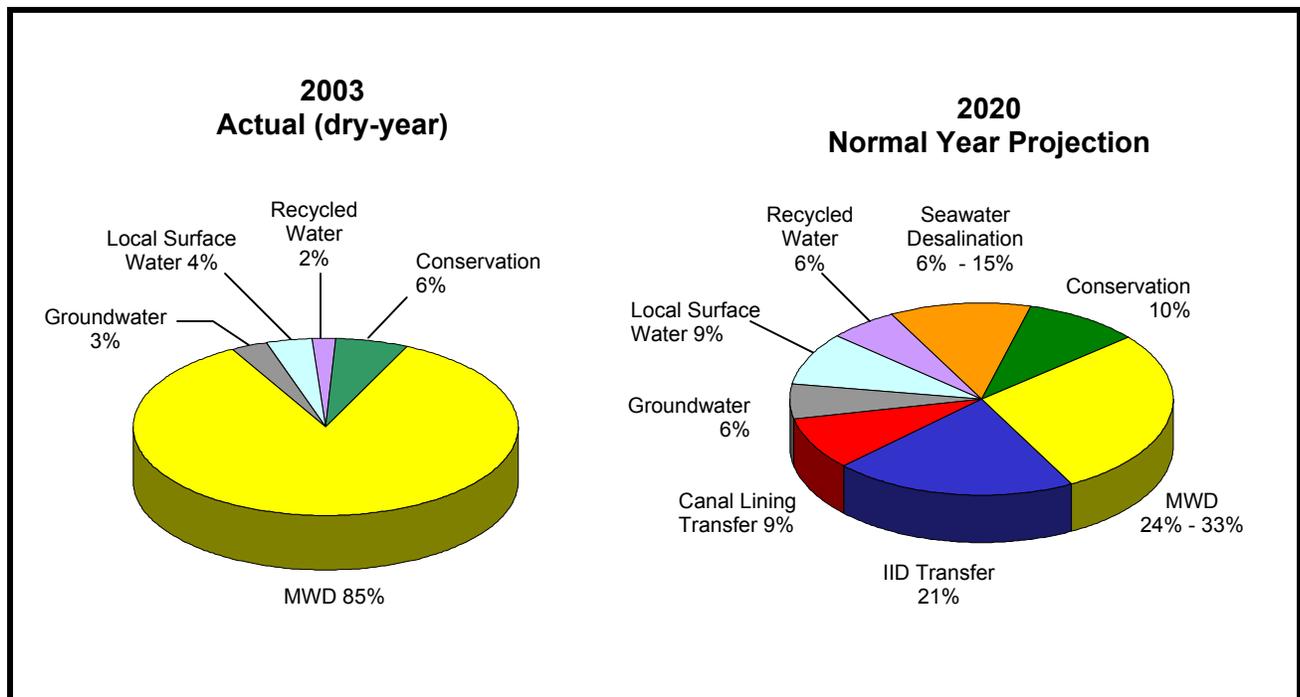


2.2 Regional Water Supply Diversification

For its first 57 years, the Water Authority purchased all its water from Metropolitan for distribution to its member agencies. Consistent with the Water Authority Act and 2000 UWMP, the Water Authority is now purchasing and delivering conserved agricultural water from the Imperial Irrigation District (IID). To further diversify the region’s supply sources, the Water Authority is also implementing the All American Canal and Coachella Canal lining projects that will provide conserved water for delivery to the member agencies for 110 years. Consistent with the supply targets in the 2000 UWMP, the Water Authority is also pursuing the development of a regional seawater desalination facility within San Diego County. These supplies are discussed in detail in Section 3.1 of this Report.

The San Diego region also relies on recycled water, groundwater, surface water, and conservation to meet the growing demand for water. These supplies are developed and managed by the local agencies and are a critical component of the overall reliability for the region. Figure 3 shows the Water Authority and its member agencies’ plan for diversifying supplies by 2020 to reliably meet future water demands. The Water Authority anticipates that through development of the diverse mix of resources identified in Figure 3, the region will have adequate and reliable supplies to meet the projected growth in the region.

Figure 3
Meeting the Region’s Water Needs in the Year 2020



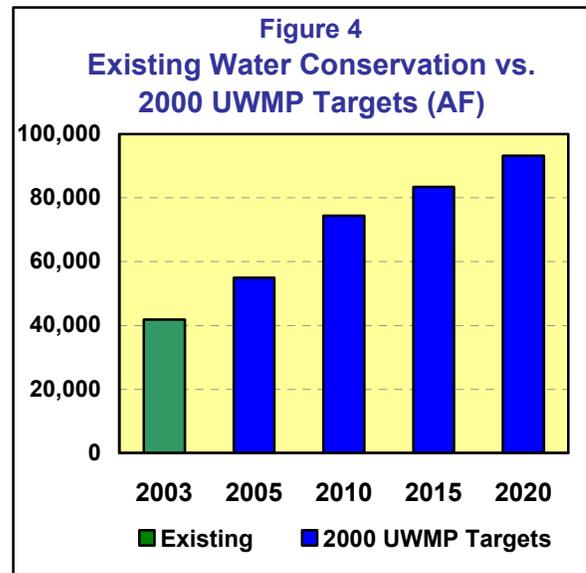
2.3 Local Water Supplies

A critical component of future reliability is development and management of local supplies and conservation programs by the Water Authority's member agencies. Development of a diverse and reliable water supply can only be obtained through a partnership between the Water Authority and its member agencies. In the Water Authority's 2000 UWMP, local supply targets were identified for water recycling, groundwater, and surface water, based on comments from member agencies. The following sections on water conservation and local supplies provide the status of the development and management of these supplies. Some of the member agencies have recently stated that the targets they provided for the 2000 UWMP are outdated and will most likely be revised downward in the 2005 UWMP.

2.3.1 Water Conservation

Water conservation, or demand management, is frequently the lowest-cost resource available to the Water Authority. Conservation reduces the amount of additional supplies the region will need to develop in the future. Between FY 1991 and FY 2003, consumers within the Water Authority's service area saved more than 280,000 AF of water through the Water Authority's and member agencies' water conservation programs. These savings have been accomplished through programs that target all customer classes (residential, agricultural, industrial, and commercial) and both outdoor and indoor water use. A complete discussion on the conservation programs is contained in the Water Authority's and member agencies' 2000 UWMPs.

The Water Authority's 2000 UWMP contained an annual conservation target of 93,200 AF of water savings by the year 2020. In FY 2003, approximately 41,816 AF of water was conserved. Figure 4 shows existing conservation savings compared with the targets included in the 2000 UWMP. Actual savings is tracking with the goals included in the plan.



To reach the water conservation targets, continued funding at the local, regional, state, and federal levels is critical, along with an increased effort to develop outdoor water conservation programs.

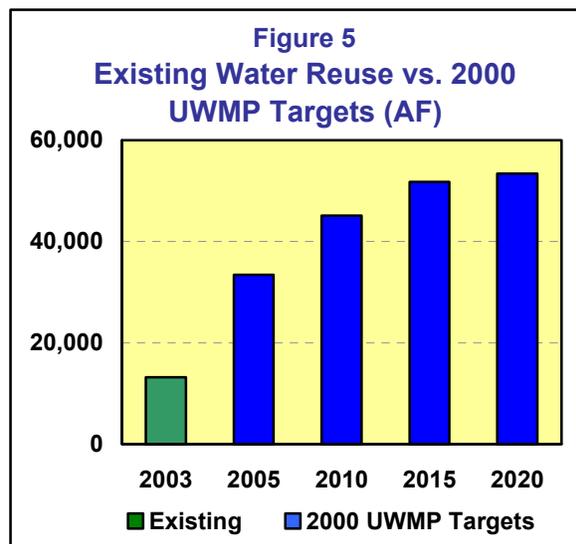
2.3.2 Recycled Water

In addition to water conservation, implementation of water recycling is essential to using the region's water supplies efficiently. Water recycling is defined as the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable reuse. A separate distribution system is required to deliver recycled water to uses such as the irrigation of golf

courses, parks and schools; and filling of lakes, ponds, and ornamental fountains. Recycled water is considered a drought-proof supply.

Based on input from the member agencies, a goal of 53,400 AF of recycled water by 2020 was identified in the Water Authority's 2000 UWMP. Currently, approximately 13,180 AF of recycled water is being used within the Water Authority's service area. Figure 5 shows the current supply development level and the water recycling targets for the region. As demonstrated by the graphic, an increased emphasis from the Water Authority and member agencies must be placed on developing this supply if the 2020 target is to be met.

Currently, local agencies are confronting obstacles that are making it difficult to meet the 2000 UWMP targets for development of recycled water. The primary obstacles that have been identified by the local agencies include market acceptance, distribution costs, high salinity levels, and lack of funding.



The Water Authority and its member agencies are taking steps to overcome the constraints associated with developing this supply. Recently, the Water Authority secured grant funding from both the State Water Resources Control Board and the Bureau of Reclamation to prepare a study that will provide specific recommendations for overcoming the obstacles that inhibit opportunities to maximize the beneficial use of recycled water. Grant funds will also be used to provide funding for local water recycling facilities planning and/or feasibility studies.

In addition, the City of San Diego is preparing a Water Reuse Master Plan 2005 to evaluate all aspects of a viable increased water reuse program, including but not limited to: 1) groundwater storage; 2) expansion of existing distribution system; 3) reservoirs for reclaimed water; 4) live stream discharge/wetlands development; and 5) reservoir augmentation.

2.3.3 Groundwater

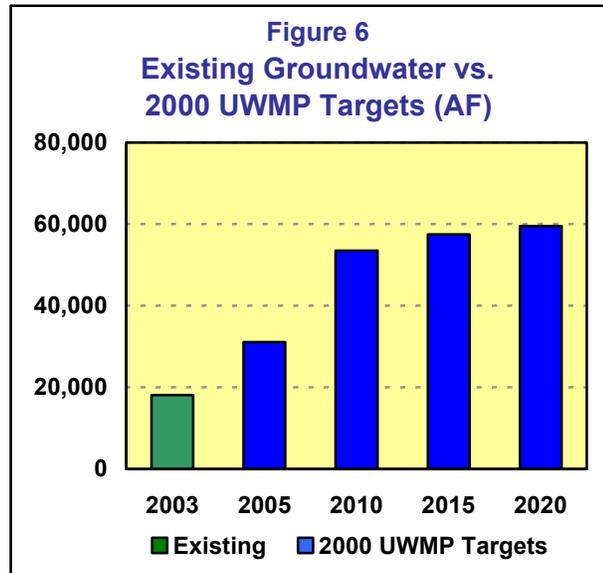
Management and development of groundwater supplies in the San Diego region is critical to the goal of diversifying the region's water resources. While supplies are limited due to geology and the semi-arid hydrologic conditions of the region, local agencies are taking actions to develop the supplies that are available. Once treated, groundwater is suitable for drinking and can be delivered directly into an agency's potable water distribution system.

Based on input from the member agencies, a goal of 59,500 AF of groundwater by 2020 was identified in the Water Authority's 2000 UWMP. Currently, approximately 18,144 AF of groundwater is being used within the Water Authority's service area. In addition, private well owners also draw on local basins, but the amount has not been accurately quantified for the

region. Figure 6 shows the current reported groundwater yield for the region and projected supply targets. As demonstrated by the graphic, a continuing emphasis from the Water Authority and member agencies must be placed on developing this supply to meet the 2020 target.

The challenges agencies face in implementing groundwater projects in the San Diego region include high saline water, resolution of water rights issues, lack of funding, and environmental and regulatory constraints.

The Water Authority, in close coordination with the City of Oceanside, is evaluating a potential groundwater storage and recovery project (conjunctive use) in the Lower San Luis Rey River Valley (Mission Basin). The feasibility study will identify project facilities, costs, and should be completed by mid-2004. Information from the study, and development of the project, will assist local agencies in developing similar projects in the coastal groundwater basins in San Diego County.



2.3.4 Local Surface Water

Surface water was the primary source of the region’s water supply until imported water was made available in 1947 and is still considered an essential supply for the San Diego region. Surface water is defined as the rainfall runoff water captured in local reservoirs, which is treated to provide a water supply suitable for potable use. Surface water yields are highly variable since they are linked to fluctuations in hydrological cycles.

In the Water Authority’s 2000 UWMP, a normal yield of 85,600 AF (based on a historic 24-year average) was used for planning purposes. Since 1980, annual surface water yields have ranged from a low of 21,000 AF to a high of 140,000 AF. Due to several years of below normal rainfall, the region used only 31,448 AF of surface water in FY 2003.

Maintaining water quality of the region’s local surface reservoirs is critical to the reliability of this supply. Source water protection is considered a key element in protecting water quality. Member agencies and the Water Authority are working together to ensure that the protection of drinking water quality is included in land use policies and plans, and watershed management programs within San Diego County.

Section 3 - Documentation for Senate Bills 610 and 221 Reporting

3.1 San Diego County Water Authority Regional Water Supplies

The Water Authority has adopted plans and taken specific actions to develop adequate water supplies to help meet existing and future water demands within the San Diego region. This section contains details on the supplies being developed by the Water Authority. A summary of recent actions pertaining to development of these supplies includes:

- In accordance with the Urban Water Management Planning Act, the Water Authority adopted an UWMP in December 2000 that identifies a diverse mix of local and imported water supplies to meet future demands.
- In December 2003, the Water Authority certified a program environmental impact report for its Master Plan that identified development of seawater desalination as the preferred alternative to assist in meeting future regional demands. Work on the environmental documentation for a facility at the Encina Power Station has been initiated.
- Deliveries of transfer water from IID to San Diego County began in 2003.
- As part of the October 2003 Quantification Settlement Agreement, the Water Authority was assigned Metropolitan's rights to 77,700 AF of conserved water from the All American Canal and Coachella Canal lining projects. The Water Authority has begun implementation of these projects.

Through implementation of the Water Authority and member agency planned supply projects, along with reliable imported water supplies from Metropolitan, the region anticipates having adequate supplies to meet existing and future water demands.

To ensure sufficient supplies to meet projected growth in the San Diego region, the Water Authority uses SANDAG's most recent regional growth forecast in calculating regional water demands. The existing and future demands of the member agencies are included in the Water Authority's projections.

3.1.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

The Water Authority currently obtains imported supplies from Metropolitan and an increasing amount of conserved agricultural water from IID. There are 27 member agencies that purchase supplies from Metropolitan; the Water Authority is Metropolitan's largest customer. The historical annual imported water deliveries from Metropolitan are contained in Section 2.3 of the Water Authority's 2000 UWMP.

Section 135 of Metropolitan's Act defines the preferential right to water for each of its member agencies. As calculated by Metropolitan, the Water Authority currently has a preferential right to about 15.54% of Metropolitan's supply, but accounts for approximately 28% of Metropolitan's water sales. Under preferential rights, Metropolitan could allocate water without

regard to historic water purchases or dependence on Metropolitan. The Water Authority and its member agencies are taking measures to reduce its dependence upon Metropolitan through development of additional supplies and a water supply portfolio that would not be jeopardized by a preferential rights allocation. Metropolitan has stated, consistent with Section 4202 of its Administrative Code, that it is prepared to provide the Water Authority's service area with adequate supplies of water to meet expanding and increasing needs in the years ahead. When and as additional water resources are required to meet increasing needs, Metropolitan says it will be prepared to deliver such supplies. To seek clarification regarding the current application and legality of Section 135, the Water Authority board of directors voted in April 2004, to appeal a recent appellate court ruling that preserves Metropolitan's preferential right process. The board of directors authorized staff to petition for review by the State Supreme Court. The petition was filed on May 4, 2004.

The Water Authority has made large investments in Metropolitan's facilities and will continue to include imported supplies from Metropolitan in the future resource mix. As discussed in the Water Authority's 2000 UWMP, the Water Authority is planning to diversify its supply portfolio and reduce purchases from Metropolitan.

Implementation of water conservation measures within the Water Authority's service area is one of the most cost-effective means of reducing demands. The Water Authority's plan for achieving conservation savings and the estimated amount of future savings is discussed in detail in the Water Authority's 2000 UWMP.

To meet future demands and diversify its supplies, the Water Authority is now taking delivery of conserved agricultural water from IID, implementing the All American Canal (AAC) and Coachella Canal (CC) lining projects, and planning for the desalination of seawater. Table 1 summarizes the planned yields from these supply projects. Deliveries from Metropolitan are also included in Table 1, and are further discussed in Section 3.2 of this Report. The local supply targets were originally provided by the member agencies and are included in the Water Authority's Master Plan and 2000 UWMP.

The Water Authority's existing and planned supplies from the IID transfer, canal lining projects and seawater desalination are considered "drought-proof" supplies and should be available at the yields shown in Table 1 in both single-dry and multi-dry year scenarios. For dry-year yields from Metropolitan supplies, refer to Metropolitan's March 2003 Water Supply Report, discussed in Section 3.2 of this Report. The member agency preparing the water assessment and/or written verification will provide information on the dry-year yield from its local supplies for inclusion in the documents.

Table 1
Projected Water Supplies – Water Authority Service Area²
Normal Year (AF/year)

Water Supply Sources	2005	2010	2015	2020	2025
Metropolitan Supplies	526,000	345,400	343,400	290,800	310,900
Water Authority/IID Transfer	30,000	70,000	100,000	190,000	200,000
AAC and CC Lining Projects	0	77,700	77,700	77,700	77,700
Seawater Desalination ¹	0	56,000	56,000	56,000	56,000
Local Surface Water	85,600	85,600	85,600	85,600	85,600
Recycled Water	33,400	45,100	51,800	53,400	53,400
Groundwater	31,100	53,500	57,500	59,500	59,500
Total Projected Supplies	706,100	733,300	772,000	813,000	843,123

¹ The Water Authority is currently preparing an environmental impact report for 50 million gallons per day (mgd) seawater desalination project at the Encina Power Plant in the City of Carlsbad that will yield approximately 56,000 AF per year. According to the Water Authority's Master Plan, which has been approved for planning purposes, the facility could be expanded to 80 – 100 mgd in the future and/or other facilities constructed to increase this supply source.

² The annual supply mixes in years 2005, 2010, 2015, and 2020 are based on the Water Authority's 2000 UWMP and subsequent actions by the Water Authority board of directors. The 2025 supply mix is based on the Water Authority's Master Plan and subsequent actions by the board of directors.

As part of preparation of a written verification, an agency's shortage contingency analysis should be considered in determining sufficiency of supply. Section 6 of the Water Authority's 2000 UWMP contains a detailed shortage contingency analysis, which addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan and Emergency Storage Project, are taking actions to prepare for and appropriately handle an interruption of water supplies. The analysis also describes actions being taken by the Water Authority to firm up its supplies from Metropolitan to provide increased reliability in a drought and reduce, if not eliminate, shortages. The Water Authority, in conjunction with its member agencies, plans to develop a new drought allocation methodology in connection with the Water Authority's next UWMP update in 2005.

3.1.1a Water Authority-Imperial Irrigation District Water Conservation and Transfer Agreement

The Quantification Settlement Agreement (QSA) was signed in October 2003, and resolves long-standing disputes regarding priority and use of Colorado River water and creates a baseline for implementing water transfers. Details on the QSA are contained in Section 3.2 of this Report. With approval of the QSA, the Water Authority and IID were able to implement their Water Conservation and Transfer Agreement. This agreement not only provides reliability for the San Diego region, but also assists California in reducing its use of Colorado River water to its legal allocation.

Implementation Status

On April 29, 1998, the Water Authority signed a historic agreement with IID for the long-term transfer of conserved Colorado River water to San Diego County. Under the Water Authority-IID Agreement, Colorado River water will be conserved by Imperial Valley farmers who voluntarily participate in the program, and then transferred to the Water Authority for use in San Diego County. The water to be conserved is part of IID's Colorado River rights, which are among the most senior in the Lower Colorado River Basin.

On October 10, 2003, the Water Authority and IID executed an amendment to the original 1998 Water Authority-IID Water Transfer Agreement. The purpose of the amendment was to modify certain aspects of the 1998 Agreement to be consistent with the terms and conditions of the QSA and related agreements and to modify other aspects to lessen the environmental impacts of the transfer of conserved water. The amendment was expressly conditioned upon approval and implementation of the QSA, which was also executed on October 10, 2003.

A restructuring of the IID transfer for the first 15 years of the agreement was needed to avoid potential impacts to the Salton Sea from reduced agricultural flows to the Salton Sea that would be caused by the agricultural conservation measures in the Imperial Valley. The QSA requires that the baseline salinity levels at the Sea be maintained for 15 years while a plan to restore the Sea is developed and implemented. The amendments contemplate that IID will conduct a combined temporary fallowing and system improvement program during the first 15 years of the transfer. In the 16th year of the agreement, all temporary fallowing would end and all water for transfer would be produced through on-farm and system conservation measures.

On November 5, 2003, IID filed a complaint in Imperial County Superior Court seeking validation of 13 contracts associated with the Water Authority-IID water transfer and the QSA. Imperial County and various private parties filed additional suits in Superior Court, alleging violations of the California Environmental Quality Act (CEQA), the California Water Code, and other laws in connection with approval of the QSA, the water transfer, and related agreements. The lawsuits have been coordinated for trial. The IID, Coachella Valley Water District, Metropolitan, Water Authority, and State are defending these suits and coordinating to seek validation of the contracts. Implementation of the transfer provisions is proceeding during the litigation. For further information regarding the litigation, please contact the Water Authority's General Counsel.

Expected Supply

With execution of the QSA and related agreements, delivery of 10,000 AF of transfer water into San Diego County occurred in calendar year 2003. In accordance with the water transfer agreement with IID, 20,000 AF will be conserved and delivered to the Water Authority in 2004. The quantities will increase annually to 200,000 AF by 2021, and remain fixed for the duration of the transfer agreement. The initial term of the agreement is 45 years, with a provision that the agreement may be extended for an additional 30-year term by mutual agreement.

Transportation

The Water Authority entered into a water exchange agreement with Metropolitan on October 10, 2003, to transport the Water Authority-IID transfer water from the Colorado River to San Diego County. Under the exchange agreement, Metropolitan will take delivery of the transfer water through its Colorado River Aqueduct. In exchange, Metropolitan will deliver to the Water Authority a like quantity and quality of water. The Water Authority will pay Metropolitan's applicable wheeling rate for each acre-foot of exchange water delivered. According to the water exchange agreement, Metropolitan will make delivery of the transfer water for 35 years, unless the Water Authority elects to extend the agreement another 10 years for a total of 45-years.

Cost/Financing

The costs associated with the transfer are proposed to be financed through the Water Authority's rates and charges. In the agreement between the Water Authority and IID, the price for the transfer water will start at \$258 per acre-foot and increase each year at a set price for the first five years. The 2004 price for transfer water is \$267 per acre-foot. Procedures are in place to evaluate and determine market-based rates following the first five-year period.

In accordance with the October 2003 amended exchange agreement between Metropolitan and the Water Authority, the initial cost to transport the conserved water was \$253 per acre-foot. Thereafter, the price shall be equal to the charge or charges set by Metropolitan's board of directors pursuant to applicable law and regulation, and generally applicable to the conveyance of water by Metropolitan on behalf of its member agencies.

The Water Authority will pay IID an up-front payment of \$10 million to help offset socioeconomic impacts associated with temporary land fallowing. IID will credit the Water Authority for this up-front payment during years 16 through 45. At the end of the fifth year of the agreement, the Water Authority will prepay IID an additional \$10 million for future deliveries of water. IID will credit the Water Authority for this up-front payment during years 16 through 30.

As part of implementation of the QSA and water transfer, the Water Authority also entered into an environmental cost sharing agreement. The agreement specifies that the Water Authority will contribute \$64 million for the purpose of funding environmental mitigation costs and contributing to the Salton Sea Restoration Fund.

Written Contracts or other Proof

The supply and costs associated with the transfer are based primarily on the following documents:

- **Agreement for Transfer of Conserved Water by and between IID and the Water Authority (April 29, 1998).** This Agreement provides for a market-based transaction in which the Water Authority would pay IID a unit price for agricultural water conserved by IID and transferred to the Water Authority.
- **Amendment to Agreement between IID and the Water Authority for Transfer of Conserved Water (October 10, 2003).** Consistent with the executed QSA and related agreements, the amendments restructure the agreement and modify it to minimize the environmental impacts of the transfer of conserved water to the Water Authority.
- **Amended and Restated Agreement between Metropolitan and Water Authority for the Exchange of Water (October 10, 2003).** This agreement was executed pursuant to the QSA and provides for delivery of the transfer water to the Water Authority.
- **Environmental Cost Sharing, Funding, and Habitat Conservation Plan Development Agreement among IID, CVWD, and Water Authority (October 10, 2003).** This Agreement provides for the specified allocation of QSA-related environmental review, mitigation, and litigation costs for the term of the QSA, and for development of a Habitat Conservation Plan.
- **Quantification Settlement Agreement Joint Powers Authority Creation and Funding Agreement (October 10, 2003).** The purpose of this agreement is to create and fund the QSA Joint Powers Authority and to establish the limits of the funding obligation of CVWD, IID, and Water Authority for environmental mitigation and Salton Sea restoration pursuant to SB 654 (Machado).

Federal, State, and Local Permits/Approvals

- **Environmental Impact Report (EIR) for Conservation and Transfer Agreement.** As lead agency, IID certified the Final EIR for the Conservation and Transfer Agreement on June 28, 2002.
- **Addendum to EIR for Conservation and Transfer Agreement.** IID as lead agency and Water Authority as responsible agency approved addendum to EIR in October 2003.
- **Environmental Impact Statement (EIS) for Conservation and Transfer Agreement.** Bureau of Reclamation issued a Record of Decision on the EIS in October 2003.
- **Federal Endangered Species Act Permit.** The U.S. Fish and Wildlife Service issued a Biological Opinion on January 12, 2001, that provides incidental take authorization and certain measures required to offset species impacts on the Colorado River regarding such actions.
- **California Endangered Species Act Permit.** Application for Section 2081 permit is pending with California Department of Fish and Game.

- **State Water Resources Control Board (SWRCB) Petition.** SWRCB adopted Water Rights Order 2002-0016 concerning IID and Water Authority's amended joint petition for approval of a long-term transfer of conserved water from IID to the Water Authority and to change the point of diversion, place of use, and purpose of use under Permit 7643.

3.1.1b All American Canal and Coachella Canal Lining Projects

As part of the QSA and related contracts, the Water Authority was assigned Metropolitan's rights to 77,700 AF per year of conserved water from projects that will line the All American Canal (AAC) and Coachella Canal (CC). These projects will reduce the loss of water that currently occurs through seepage and that conserved water will be delivered to the Water Authority. This will provide the San Diego region with an additional 8.5 million AF of water over the 110-year life of the agreement.

Implementation Status

The AAC lining project is in the pre-design phase. The lining project consists of constructing a concrete-lined canal parallel to 23 miles of the existing AAC from Pilot Knob to Drop 3. National Environmental Policy Act (NEPA) and CEQA documentation is complete, environmental mitigation measures have been identified and Endangered Species Act consultations are pending. Under the current schedule, the project is expected to be completed in 2008.

The final design for the CC lining project is complete. Compliance with CEQA and NEPA has also been completed, including an amended Record of Decision by the Bureau of Reclamation. The amendment was required after the project design was revised from lining the existing canal to construction of a parallel canal. It is expected that construction should start in mid-2004 and be complete within two years, with deliveries beginning in early 2007.

Expected Supply

The AAC lining project will yield 67,700 AF of Colorado River water per year and the CC lining project will yield 26,000 AF per year. Under the October 10, 2003, Allocation Agreement, 16,000 AF per year of conserved canal lining water will be allocated to the San Luis Rey Indian Water Rights Settlement Parties. The remaining amount, 77,700 AF per year, will be available to the Water Authority beginning in approximately 2008. According to the Allocation Agreement, IID has call rights to a portion (5,000 acre-feet per year) of the conserved water upon termination of the QSA for the final 35 years of the Allocation Agreement and upon satisfying certain conditions.

Transportation

The October 10, 2003, Exchange Agreement between Water Authority and Metropolitan also provides for the delivery of the conserved water from the canal lining projects. The Water Authority will pay Metropolitan's applicable wheeling rate for each acre-foot of exchange water delivered. In the Agreement, Metropolitan will deliver the canal lining water for the term of the Allocation Agreement (110 years).

Cost/Financing

Under California Water Code Section 12560 et seq., the Water Authority would receive \$200 million in state funds for construction of the projects. In addition, under California Water Code Section 79567, \$20 million from Proposition 50 could also be available for the lining projects. Additionally, the Water Authority will receive \$35 million for groundwater conjunctive use projects as part of the agreement. The Water Authority would be responsible for additional expenses above the grant funds provided by the state.

In accordance with the amended exchange agreement between Metropolitan and the Water Authority, the cost to transport the canal lining water is equal to the charge or charges set by Metropolitan's board of directors pursuant to applicable law and regulation and generally applicable to the conveyance of water by Metropolitan on behalf of its member agencies.

In accordance with the Allocation Agreement, the Water Authority will also be responsible for a portion of the net additional Operation, Maintenance, and Repair (OM&R) costs for the lined canals. The Secretary of Interior, working with the Canal Lining Projects OM&R Coordinating Committees, will determine the additional costs of operation, maintenance, and repair of the AAC and CC.

Any costs associated with the lining projects as proposed, are to be financed through the Water Authority's rates and charges.

Written Contracts or other Proof

The expected supply and costs associated with the lining projects are based primarily on the following documents:

- **U.S. Public Law 100-675 (1988)**. Authorized the Department of the Interior to reduce seepage from the existing earthen AAC and CC. The law provides that conserved water will be made available to specified California contracting water agencies according to established priorities.
- **Allocation Agreement among the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, the La Jolla, Pala, Pauma, Rincon, and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido, and Vista Irrigation District (October 10, 2003)**. This agreement includes assignment of Metropolitan's rights and interest in delivery of 77,700 AF of Colorado River water previously intended to be delivered to Metropolitan to the Water Authority. Allocates water from the AAC and CC lining projects for at least 110 years to the Water Authority, the San Luis Rey Indian Water Rights Settlement Parties, and IID, if it exercises its call rights.
- **Amended and Restated Agreement between Metropolitan and Water Authority for the Exchange of Water (October 10, 2003)**. This agreement was executed pursuant to the QSA and provides for delivery of the conserved canal lining water to the Water Authority.

- **California Water Code Section 12560 et seq.** This Water Code Section provides for \$200 million to be appropriated to the Department of Water Resources to help fund the canal lining projects in furtherance of implementing California's Colorado River Water Use Plan.
- **California Water Code Section 79567.** This Water Code Section identifies \$20 million as available for appropriation by the California Legislature from the Water Security, Clean Drinking Water, Coastal, and Beach Protection Fund of 2002 (Proposition 50) to DWR for grants for canal lining and related projects necessary to reduce Colorado River water use. According to the Allocation Agreement, it is the intention of the agencies that those funds will be available for use by the Water Authority, IID, or CVWD for the AAC and CC lining projects.
- **Agreement between Metropolitan and Water Authority regarding Assignment of Agreements related to the ACC and CC Lining Projects.** This agreement was executed in April 2004 and assigns rights to the Water Authority for the following agreements that had been executed to facilitate funding and construction of the ACC and CC lining projects:
 - * **California Department of Water Resources – Metropolitan Funding Agreement (2001).** Reimburse Metropolitan for project work necessary to construct the lining of the CC in an amount not to exceed \$74 million.
 - * **California Department of Water Resources – IID Funding Agreement (2001).** Reimburse IID for project work necessary to construct a lined AAC in an amount not to exceed \$126 million.
 - * **Metropolitan – CVWD Assignment and Delegation of Design Obligations Agreement (2002).** Assigns design of the CC lining project to CVWD.
 - * **Metropolitan – CVWD Financial Arrangements Agreement for Design Obligations (2002).** Obligates Metropolitan to advance funds to CVWD to cover costs for CC lining project design and CVWD to invoice Metropolitan to permit the Department of Water Resources to be billed for work completed.

Federal, State, and Local Permits/Approvals

- **AAC Lining Project Final EIS/EIR (March 1994).** A final EIR/EIS analyzing the potential impacts of lining the AAC was completed by the Bureau of Reclamation (Reclamation) in March 1994. A Record of Decision was signed by Reclamation in July 1994, implementing the preferred alternative for lining the AAC. A re-examination and analysis of these environmental compliance documents by Reclamation in November 1999 determined that these documents continued to meet the requirements of the NEPA and the CEQA and would be valid in the future.
- **CC Lining Project Final EIS/EIR (April 2001).** The final EIR/EIS for the CC lining project was completed in 2001. Reclamation signed the Record of Decision in April 2002.

An amended Record of Decision has also been signed to take into account revisions to the project description.

3.1.1c Proposed Seawater Desalination Project at Encina

A Seawater Desalination Project (Project) is being proposed that would consist of a 50 mgd reverse osmosis desalination plant sited at the Encina Power Station in the City of Carlsbad. The Project would also include the pipelines and ancillary facilities necessary to convey product water from the plant to local and regional water distribution systems.

Implementation Status

In June 2003, the Water Authority board of directors approved including the Project in the Water Authority's FY 04 and FY 05 Capital Improvement Program (CIP) Budget. Funds have been budgeted to support planning activities related to the desalination plant and distribution facilities necessary to connect the plant with the Water Authority's pipelines. A comprehensive engineering study on the distribution facilities was recently completed. The Water Authority is currently preparing an EIR and anticipates release of a public draft EIR by the end of 2005. Simultaneously with the Water Authority's efforts, Poseidon Resources LLC, of Stamford, Conn., is pursuing the implementation of a privately owned local supply project at the same location in the City of Carlsbad. The Poseidon project is also in the environmental review and planning stages.

Expected Supply

The Project is anticipated to produce 56,000 AF annually of new water supply generated from seawater drawn in by the Encina Power Station cooling water circulation system from the Pacific Ocean via the Agua Hedionda Lagoon. The Project would provide a new source of high quality water that would meet or exceed state and federal standards.

Cost/Financing

The total estimated capital cost of the Project was initially estimated at \$272 million in 2001 dollars. This cost estimate is currently being evaluated and will likely be higher based on results from the conveyance feasibility study. The Water Authority is pursuing external funding to offset the capital and operating cost of the Project, including funding through the Metropolitan's Seawater Desalination Program (SDP), state funding through the recently passed Proposition 50, as well as federal funding opportunities.

The Water Authority secured federal funding in the FY 2004 Omnibus Appropriations Act (Act) for seawater desalination development. The Act includes a provision under the VA/HUD State and Tribal Assistance Grants account program that provides \$750,000 for the Water Authority's seawater desalination program.

Federal, State, and Local Permits/Approvals

Table 2 provides a list of the major permits and discretionary actions required for the Project and the anticipated schedule for completion of the permitting process. Based on the estimated completion dates also shown in Table 2, the Water Authority anticipates the Project to be on-line in 2010.

**Table 2
List of Major Permits and Discretionary Actions**

Permit or Discretionary Action	Purpose	Scope	Scheduled Completion
Certification of Environmental Impact Report	Satisfy the requirements of the California Environmental Quality Act.	Those aspects of the proposed Project that may affect environmental quality.	2006
Endangered Species Act Compliance (ESA)	Satisfy ESA requirements.	Proposed distribution facilities.	2006
Domestic Water Supply Permit	Satisfy the requirements of the state and federal Safe Drinking Water Acts.	Source water and product water quality, treatment plant reliability, and monitoring program.	2006 (Conceptual approval)
National Pollutant Discharge Elimination System Permit	Satisfy the requirements of the federal Clean Water Act, California Water Code, Ocean Plan, and Comprehensive Water Quality Control Plan for the San Diego Region.	Proposed discharge of concentrated seawater to the Pacific ocean via existing cooling water discharge system.	2006
Coastal Development Permit	Satisfy the requirements of the California Coastal Act and the federal Coastal Zone Management Act.	Those aspects of the proposed Project that may affect coastal resources.	2007
Right-of-Way Acquisition for conveyance facilities	Acquire land necessary for construction of conveyance facilities.	Proposed distribution facilities.	2007

3.1.2 Water Authority's Capital Improvement Program and Financial Information

The Water Authority's annual CIP budget document includes a description of each of the projects and programs being implemented to ensure existing and future facilities are adequate to deliver water supplies throughout the region. The project costs, along with information on the activities that need to be completed, are included in the CIP document. A programmatic environmental impact report has been certified by the Water Authority board of directors for the Master Plan. The Master Plan identifies future facilities and other improvements to the Water Authority's system that are necessary to diversify supplies and maintain reliability throughout the region. Projects identified in the Master Plan will be included in the CIP based on Water Authority board of directors' approval.

One of the highest priority projects identified in the Master Plan is the development of additional treatment capacity within the region. During recent summers' the Water Authority has experienced peak-demand conditions that have slightly exceeded the regions rated treatment capacity. The Master Plan recommends development of an additional 50 million gallons per day (mgd) of treatment capacity immediately and another 50 mgd capacity by 2010. The Water Authority and its member agencies are evaluating alternatives to determine the most reliable and

cost-effective method of increasing regional treated water capacity. The Water Authority expects to select a preferred alternative by summer of 2004. In the near-term, the Water Authority and its member agencies are implementing short-term conservation programs and operational procedures to ensure adequate supplies during peak summer periods.

The Water Authority board of directors is provided a semi – annual and annual report on the status of development of the CIP projects. As described in the Water Authority’s budget, a combination of long- and short-term debt and cash (pay-as-you-go) will provide funding for capital improvements. Additional information is included in the Water Authority annual budget. The Water Authority’s annual report also contains selected financial information and summarizes the Water Authority’s investment policy.

3.2 Metropolitan Water District of Southern California 2003 Water Supply Report

In March 2003, Metropolitan produced a document entitled, *Report on Metropolitan’s Water Supplies, A Blueprint for Water Reliability* (March 2003 Report). The objective of the March 2003 Report is to provide the member agencies, retail water utilities, cities, and counties within its service area with water supply information for purposes of developing water supply assessments and written verifications. The March 2003 Report states the approach to evaluating water supplies and demands is consistent with Metropolitan’s 2000 Regional UWMP. As part of this process, Metropolitan utilizes SANDAG’s regional growth forecast in calculating regional water demands for the Water Authority’s service area.

3.2.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

Metropolitan is a wholesale supplier of water to its member public agencies and obtains its supplies from two primary sources: the Colorado River, via the Colorado River Aqueduct (CRA), which it owns and operates, and Northern California, via the State Water Project (SWP). The purpose of the March 2003 Report is to document the availability of these existing supplies and additional supplies necessary to meet future demands. Metropolitan has not yet updated the March 2003 Report. To ensure a thorough analysis of the water supplies available to serve existing and projected growth, supplemental information to the March 2003 Report is included in the following paragraphs.

Colorado River Aqueduct Deliveries

The March 2003 Report includes a description of Metropolitan’s 550,000 AF per year basic annual apportionment water (Priority 4) along with the Colorado River supply projects that are necessary to maintain a full CRA. One of the actions that were finalized following distribution of the March 2003 Report is approval of the QSA and other related agreements. Signing of the QSA and related agreements will now allow implementation of Colorado River supply projects identified in Metropolitan’s March 2003 Report. Information on these activities is discussed below.

The QSA is an integral part of California’s Colorado River Water Use Plan to reduce dependency on Colorado River supplies. The QSA resolves long-standing disputes regarding

priority and use of river water and creates a baseline for implementing water transfers. Implementation of the QSA also enables California to receive the benefit of special surplus criteria for Colorado River supplies to significantly increase the probability of surplus deliveries and provide a “soft-landing” for California while it reduces its take on the Colorado River.

Written Contracts or other Proof

The following is a list of major QSA-related agreements and actions pertinent to water supply reliability in San Diego County along with the date that each were executed:

- **Passage of SB 654 (Machado), SB 317 (Kuehl), and SB 277 (Ducheny) (September 2003).** In September 2003, California’s Governor signed three bills necessary to carry out the actions contained in the QSA and related agreements.
- **Quantification Settlement Agreement by and among Imperial Irrigation District, Metropolitan, and Coachella Valley Water District (October 10, 2003).** This Agreement and related agreements are intended to settle longstanding disputes regarding the priority, use, and transfer of Colorado River water, and to establish by agreement the terms for the further distribution of Colorado River water among agencies for up to 75 years. The agreement will also assist the agencies in meeting their water demands within California’s apportionment of Colorado River water by identifying the terms, conditions, and incentives for the conservation and distribution of Colorado River water within California.
- **Colorado River Delivery Agreement among the Department of the Interior, Coachella Valley Water District, Imperial Irrigation District, Metropolitan, and Water Authority (October 10, 2003).** This Agreement provides federal authorization for water deliveries pursuant to the QSA. With approval by the Secretary of Interior, the Interim Surplus Guidelines have been reinstated.
- **Allocation Agreement among the United States, Metropolitan, Coachella Valley Water District, Imperial Irrigation District, the Water Authority, and the San Luis Rey Indian Water Rights Settlement Parties (October 10, 2003.)** This Agreement allocates water from the lining of the AAC and CC and assigns the right to 77,700 AF of conserved water per year from Metropolitan to the Water Authority in accordance with the Agreement.

Federal, State, and Local Permits/Approvals

- **Final Program Environmental Impact Report (June 2002) for Implementation of the Colorado River Quantification Settlement Agreement.** In June 2002, the three California Colorado River agencies (Metropolitan, IID, and CVWD) certified the Program Environmental Impact Report (PEIR) for the QSA.
- **Addendum to Final PEIR for Implementation of the Colorado River Quantification Settlement Agreement (October 2003).** The Addendum to the Final PEIR was approved by the agencies during the months of September and October 2003. The modifications to

the QSA require only minor changes to the evaluation in the certified Final PEIR to make it adequate under CEQA and do not require preparation of a subsequent EIR pursuant to CEQA.

- **Conservation Agreement among the Bureau of Reclamation, Imperial Irrigation District, Coachella Valley Water District, and San Diego County Water Authority (October 10, 2003).** This agreement is for the purpose of establishing the rights and obligations of the parties to implement the provisions of the Species Conservation Program. IID has commenced development of a habitat conservation plan (HCP) in accordance with the Federal and California Endangered Species Act, related to implementation of water conservation projects identified in the QSA. The HCP is not expected to be completed for up to three years after the execution of the QSA and the parties desire to participate with the Bureau of Reclamation in the implementation of the Species Conservation Program for the purpose of obtaining incidental take authorization pending completion of the HCP.

Colorado River Supply Conditions

The Colorado River watershed is experiencing the fifth consecutive year of a drought that has impacts throughout western United States. The period since 1999 is now officially the driest in the 98 years of recorded history of the Colorado River. The basin states are having discussions with the Bureau of Reclamation on potential drought management programs to reduce the risk of shortages. Metropolitan staff is involved in these talks. Some of the programs being considered are re-operation of the system to minimize evaporation, system losses, and potential for a drought water bank in Lake Mead. It should be noted that according to the “law of the river,” California has a higher priority to supplies in times of shortages, but will need to take steps to ease the drought impacts on the other western states. Water Authority staff is evaluating imported water supply conditions to determine if the Water Authority needs to take additional steps to secure supplies to minimize risk of shortages.

Integrated Resources Plan

Metropolitan has released, for public review, a draft update to its 1996 Integrated Resources Plan (IRP). The update discusses supply reliability associated with execution of the QSA and includes a buffer supply to mitigate against the risks associated with implementation of local and imported supply programs. The planning buffer identifies an additional increment of water that could be potentially developed if other supplies are not implemented as planned. As part of implementation of the planning buffer, Metropolitan should evaluate supply development annually to ensure that the region is not over-developing supplies. If managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate supplies to meet future demands.

Future supply reliability relies not only upon actions by Metropolitan to secure reliable imported supplies, but local agencies developing local projects identified in the future resource mix. Table 3 demonstrates the diverse mix of resources and storage projects planned within Metropolitan’s service area, and include the planning buffer. The information contained in the table is from Metropolitan’s December 2003 draft IRP update.

Table 3
Summary of Metropolitan's IRP Update Dry-Year Targets (AF)

	2010	2020	2025
Conservation	865,200	1,027,600	1,106,900
Local Production ¹	1,808,966	1,911,193	1,922,608
Total Local Projects ²	410,000	750,000	750,000
Groundwater Conjunctive Use	275,000	300,000	300,000
State Water Project	463,000	650,000	650,000
Colorado River Aqueduct	1,001,000	985,000	1,005,000
CVP/SWP Storage and Transfers ²	300,000	550,000	550,000
MWD Surface Storage ³	620,000	620,000	620,000

Source: Draft IRP Update, Metropolitan Water District, December 2003.

¹ Includes groundwater and surface production and imported supplies from the LA Aqueduct.

² Target includes 250,000 acre-foot planning buffer in years 2020 through 2025. The amount of supplies shown are not necessary to meet demands in those years, but must be considered in order to be available to mitigate for risks associated with supplies not being development. Metropolitan should evaluate supply implementation annually and adjust the amount of planning buffer accordingly.

³ Represents annual production, not the total storage capacity.