



**Valencia Water Company Water Management Program
Approved November 29, 2001,
and Related CPUC Decisions**

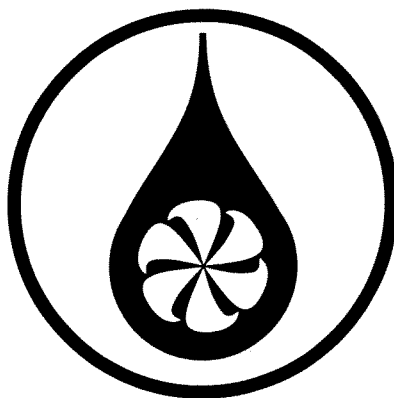
**VALENCIA WATER COMPANY
WATER MANAGEMENT PROGRAM**

DECEMBER 16, 1999

Revised April 10, 2000
Further Revised May 14, 2001

Approved by Commission Nov. 29, 2001
(D.01-11-048)

*Valencia Water
Company*



**VALENCIA WATER COMPANY
WATER MANAGEMENT PROGRAM**

DECEMBER 16, 1999

**Revised April 10, 2000
Further Revised May 14, 2001**

**Approved by Commission Nov. 29, 2001
(D.01-11-048)**

VALENCIA WATER COMPANY
WATER MANAGEMENT PROGRAM

At the direction of the Public Utilities Commission, Valencia Water Company filed Application 99-12-025 for Commission approval of an updated Water Management Program on December 14, 1999. The Water Management Program submitted on that date, which was later admitted into evidence in Application 99-12-025 as Exhibit 3, is provided under Tab A.

On April 10, 2000, Valencia Water Company served its prepared direct testimony in Application 99-12-025. The prepared direct testimony of Robert J. DiPrimio, President of Valencia, which was later admitted into evidence in Application 99-12-025 as Exhibit 1, included a review of recent water supply and demand information and revised Table III-1 and Figure III-2 of the Water Management Program to reflect the latest information as of that date. The updated Table III-1 and Figure III-2, as attached to Mr. DiPrimio's prepared direct testimony, are provided under Tab B.

On May 14, 2001, at the direction of the presiding Administrative Law Judge in Application 99-12-025, Valencia Water Company updated its Water Management Program through testimony and by submitting a further revision of Figure III-2. The revision of Figure III-2 was later admitted into evidence in Application 99-12-025 as Exhibit 51. This most recent update of Figure III-2 is provided under Tab C.

VALENCIA WATER COMPANY
WATER MANAGEMENT PROGRAM

DECEMBER 16, 1999

VALENCIA WATER COMPANY
WATER MANAGEMENT PROGRAM

DECEMBER 16, 1999

TABLE OF CONTENTS

	<u>Page #</u>
I. NARRATIVE DESCRIPTION OF UTILITY AND SERVICE AREA	
a) Geographic Location	1
b) Customer Description	2
c) Planned System Improvements Which will Affect Supply	2
d) Effects of Drought on System	3
e) Valencia Water Company Service Area	4
f) Valley Precipitation	4
II. PREVIOUS WATER MANAGEMENT PROGRAM	
a) Accomplishments of Previous Conservation Programs	5
b) 1995 Water Management Program	6
III. WATER SOURCES AND SUPPLY OUTLOOK	
a) Introduction	8
b) Summary of Available Water Supply	18
c) Water Demands	19
d) Water Supply Outlook	22
IV. WATER CONSERVATION PROGRAMS TO BE IMPLEMENTED	
a) CLWA Conservation Programs	24
b) Valencia Water Conservation Programs	30
c) Valencia Water Loss Reduction Techniques	32
APPENDICES	
Appendix A CLWA Landscape Education Program	33
Appendix B <i>Water Currents Summer 1999</i>	34
Appendix C Newspaper Article on Recycled Water, <i>The Signal</i> , November 1999	35
FIGURES	<u>Following Page #</u>
Valencia and CLWA Water Service Areas (Figure I-1)	1
Santa Clarita Valley Annual Rainfall (Figure I-2)	3
Santa Clarita Valley Water Supplies (Figure III-1)	18
Santa Clarita Valley Water Supplies and Demand (Figure III-2)	23

SECTION I

NARRATIVE DESCRIPTION OF UTILITY AND SERVICE AREA

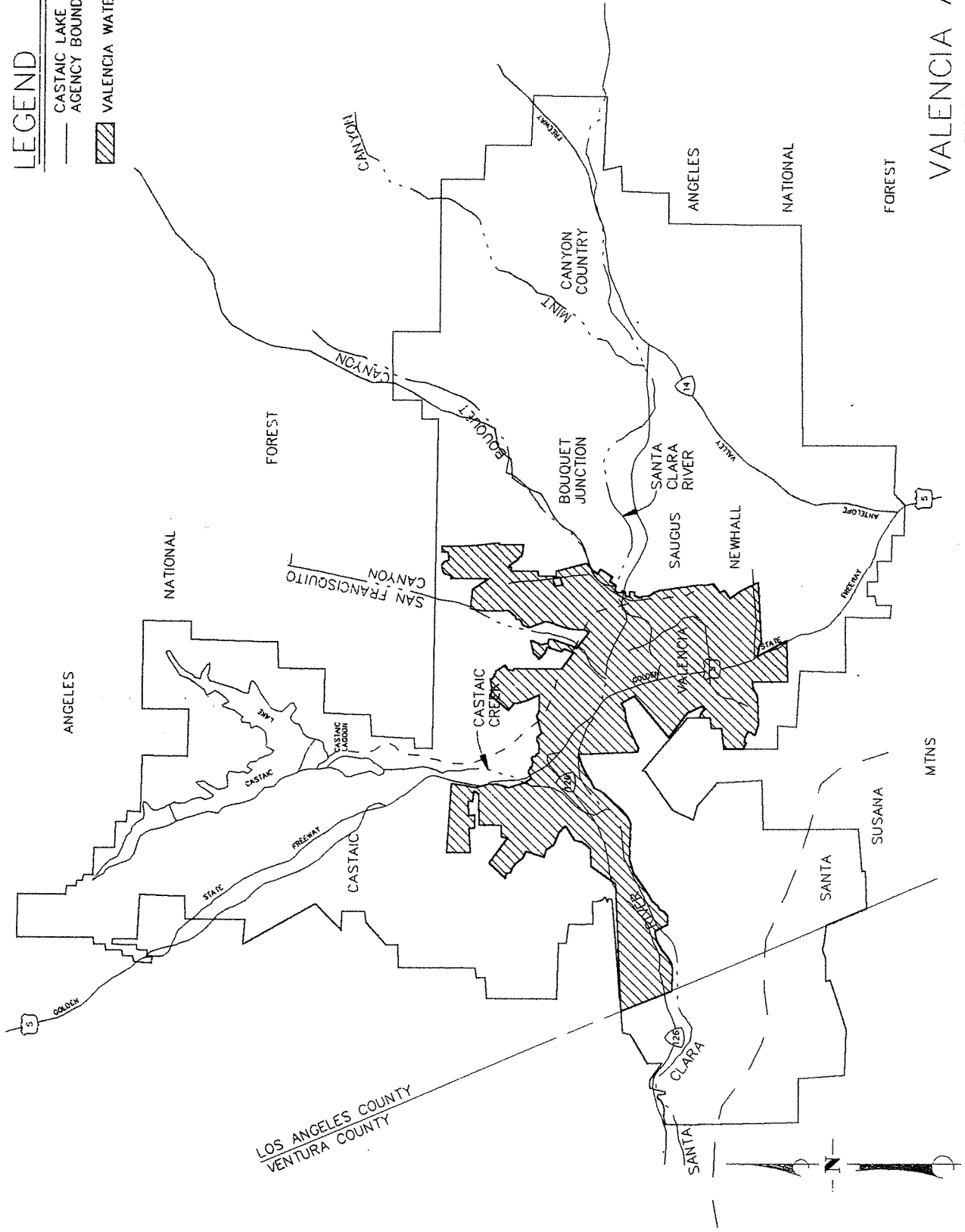
I.a) GEOGRAPHICAL LOCATION

Valencia Water Company is located in the Santa Clarita Valley (Valley) which is in the northern portion of Los Angeles County. For most residents of the Valley, domestic water service is provided by four retail water purveyors. They are Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Water Company and Valencia Water Company (Valencia). The Castaic Lake Water Agency (CLWA) is a wholesaler that obtains water from California's State Water Project. CLWA also provides retail water service as a result of its recent acquisition of the Santa Clarita Water Company in September, 1999. The service areas of Valencia and CLWA are shown on Figure I-1.

The Valley is an irregular shaped area of approximately 500 square miles and lies approximately 35 miles northwest of downtown Los Angeles. Rolling hills, mountains, and alluvial valleys constitute the major physical features of the Valley. The largest of the alluvial valley areas is along the main stem of the Santa Clara River which traverses the region in an east-west direction. Additional significant valley areas are the South Fork of the Santa Clara River in the Newhall-Saugus-Valencia area, the Castaic Valley, San Francisquito Canyon, and Bouquet Canyon. Smaller alluvial valleys occur along several other canyons. Elevations range from approximately 800 feet above sea level at the downstream (westerly) end of the region to a maximum of approximately 3,100 feet above sea level.

LEGEND

- CASTAIC LAKE WATER
- AGENCY BOUNDARY
- VALENCIA WATER COMPANY



VALENCIA AND CLWA
WATER SERVICE AREAS

FIGURE I-1

SCALE: 1"=16,500'

1.b) CUSTOMER DESCRIPTION

The service area of Valencia is developed to include a mix of residential and commercial land uses, mostly comprised of single family homes, apartments, condominiums and a number of local shopping centers and neighborhood commercial developments. The City of Santa Clarita and Los Angeles County are the largest overall water users for irrigation purposes. Magic Mountain Amusement Park is the largest individual commercial user. The service area also includes two golf courses, the Valencia Industrial Center and the Valencia Commerce Center. Heavy industry is non-existent and light industry can be classified as service oriented with light manufacturing/assembly endeavors. All services are metered, with the exception of fire services.

1.c) PLANNED SYSTEM IMPROVEMENTS WHICH WILL AFFECT SUPPLY

Valencia plans improvements to its water system incrementally as demand for water service increases. Improvements are made based upon reliably meeting customer water demands, compliance with applicable PUC rules and regulations governing service, providing operational flexibility during periods of drought and peak summer usage, and meeting Los Angeles County fire flow requirements.

The principal system improvements for imported water and recycled water are planned and constructed by CLWA. CLWA has in place a Capital Improvement Program that will permit it to provide additional facilities as they become necessary. This program is funded primarily by new connection fees and is, therefore, not a burden on existing customers. CLWA's capital program is discussed in more detail in Section III.a). Additionally, CLWA has developed its *draft Integrated Water Resources Plan Water Demand and Supply Evaluation (IWRP)* (1998). This document presents the results of an evaluation of future water supply needs in the service area of CLWA and serves as a principal planning document for its Capital Improvement Program.

In 1993, CLWA prepared a draft *Reclaimed Water System Master Plan* that outlined a multi-phase program to deliver recycled water in the Valley. CLWA has completed environmental review and is constructing phase I of the project which will deliver approximately 1,700 acre-feet of recycled water. Overall, the program is expected to reclaim up to 10,000 acre-feet of highly treated (tertiary) wastewater suitable for reuse on golf courses, landscaping and other non-potable uses. Valencia encourages the use of recycled water as an important program to maximize current supplies in meeting overall water needs for the Valley.

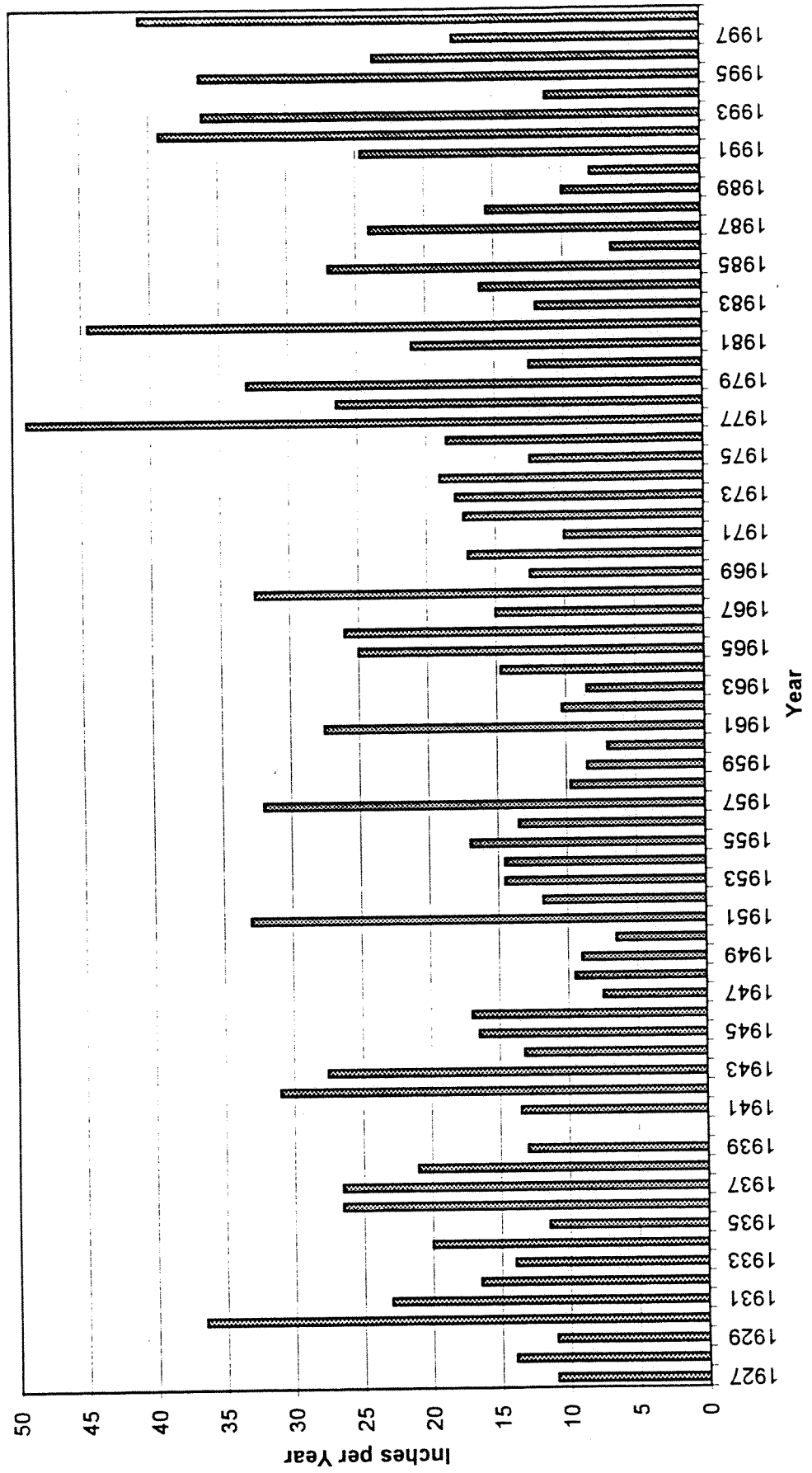
I.d) EFFECTS OF DROUGHT ON SYSTEM

Droughts have occurred locally in 1947-50, 1958-60 and 1990-91. Recent statewide droughts have occurred in 1976-77 and 1987-91. The rainfall data in Figure I-2 graphically illustrates the time periods with low rainfall. Since the area's water supplies are dependent upon rainfall conditions both locally and statewide, it is important to note that wet and dry year conditions do not always occur at the same time in Northern and Southern California. As a result, Valencia and the other Valley water purveyors can adjust the mix of available water resources on a year-to-year basis in response to local and statewide hydrologic conditions.

Prior to the 1990-1991 drought, there was minimal impact on the Santa Clarita Valley other than requiring additional well production to compensate for the lack of spring rainfall for crops, lawns and gardens. It was not until 1990-1991 that the state-wide drought impacted the water supply in the Santa Clarita Valley. The drought caused cutbacks in imported water supply. Water production declined in some alluvial wells operating in the shallow, outlying reaches of the aquifer. However, because Valencia's alluvial wells are located in the major water bearing reaches of the aquifer, none of Valencia's alluvial wells experienced loss of production during this time.

In addition to its alluvial groundwater supply, Valencia pumped water from the Saugus Formation, and along with requesting customers to voluntarily conserve 10 percent,

Santa Clarita Valley
Annual Rainfall
Figure I-2



customer water demands were met for the duration of the drought. CLWA elected not to participate in the state's Drought Water Bank because alternate local supplies were available to meet Valley water demands. Members of the Upper Santa Clara Valley Water Committee (which includes Valencia, CLWA, Los Angeles County Waterworks District 36, Newhall County Water District, and Santa Clarita Water Company) signed a Drought Emergency Water Sharing Agreement, agreeing to share water from all sources and to facilitate beneficial water transfers, exchanges and wheeling arrangements. Also, the Committee worked with the City of Santa Clarita and the County of Los Angeles to implement water use ordinances for Valley residences, review water consumption and supply data, and recommend measures to encourage conservation.

Since the 1990-91 drought, Valencia, CLWA and the other water purveyors have continued to work cooperatively to ensure customer demands are met under varying hydrologic conditions and with overall increasing demands from planned growth. These efforts have included water resource planning activities, acquisition of new water supplies and construction of transmission and treatment facilities. These activities are reported in Section III of this report.

I.e) VALENCIA WATER COMPANY SERVICE AREA

Figure I-1 shows the existing boundaries of Valencia's service area, as well as the service area of CLWA.

I.f) VALLEY PRECIPITATION

The Valley is characterized as having a Mediterranean climate. Winter temperatures are slightly lower and summer temperatures slightly higher than in coastal areas. Temperatures range from maximums near 110°F during the summer months to minimums near 20°F during the winter. Typically, dry years are followed by wet years in a cyclical pattern. The ten-year average annual precipitation (1988-1998) for the valley is 24 inches. Figure I-2 shows the annual historical rainfall in the Valley. As this graph shows, there have been 12 years with precipitation above 30 inches, and ten years when precipitation has fallen below 10 inches.

SECTION II

PREVIOUS WATER MANAGEMENT PROGRAM

II.a) ACCOMPLISHMENTS OF PREVIOUS CONSERVATION PROGRAMS

CLWA, working in cooperation with the retail water purveyors, has implemented most of the conservation efforts in the Valley over the last five years. Valencia supports these conservation efforts indirectly through the water rates paid to CLWA for purchased water.

Customer Bills

Valencia provides all metered customers with historical usage on their monthly billing statements. This allows customers to compare their water usage with the same period of the prior year, and to monitor their water usage over time. Additionally, each monthly bill includes brief messages promoting conservation, such as "Use Water Wisely". This program has been very effective because it reaches such a large percentage of Valencia's customers, and because of the fact that customers are reminded on a monthly basis about their usage and about the importance of conservation.

Conservation Water Kit Program

This program targets older homes in the Valley which were constructed prior to enactment of ordinances requiring low-flow toilets and showers. The kits are available in Valencia's lobby for customers to take, and are distributed through the mail upon request from customers. The kits contain toilet displacement bags, shower flow restrictors and leak detection tablets. The program has resulted in water savings as well as a heightened awareness of conservation activities.

Education of Residential Customers

The goal of this program is to instill a water conservation ethic in students. The education program is sponsored by CLWA, and has been extremely successful during the last five years. The program includes distribution of education packets and giveaways featuring conservation messages to students. This program is ongoing and is described in more detail in Section IV.a) CLWA Conservation Programs. This program reaches approximately 6,000 students, grades kindergarten through sixth, every year.

Landscape Brochure Distribution

The goal of this program has been to educate the public about landscapes which are best adapted to the Mediterranean climate of the Valley. The original program discussed in the previous Water Management Program has been expanded to include multiple brochures on landscape education. The landscape brochure distribution program now works in conjunction with the Landscape Education Program which is described in more detail in Section IV.a) CLWA Conservation Programs.

Information to Residential Customers

Public information to customers involves promoting water conservation through public information programs which include newspaper articles, radio, direct mail, brochures, newsletters, web sites, and public events. CLWA has used all of these means to successfully promote conservation during the last five years, and continues to do so. These measures are described in more detail in Section IV.a) CLWA Conservation Programs.

II.b) 1995 WATER MANAGEMENT PLAN

The 1995 WMP reports regional water supply information, which shows the minimum and maximum water supply available in the Valley of 102,260 acre-feet and 110,800 acre-feet, respectively. This represents the area's water supply over a range of operational and hydrologic conditions.

The 1995 WMP reports the on-going planning efforts of Valencia, CLWA and the other local retail water purveyors which to date, have yielded significant improvements to the Valley's water supply capacity and Valencia's ability to deliver from multiple sources of water within its service area. The sources of water identified in the report are 1) Santa Clara Alluvial Aquifer, 2) Saugus Formation, 3) imported water from the State Water Project, and 4) recycled water.

Valencia's 1995 WMP concluded that sufficient supply was available to meet projected water demands for the foreseeable future. Water demand projections were normalized from actual Valencia customer data using the PUC's approved statistical method and reasonable assumptions for customer growth. As illustrated in Table II-1, the water demand forecasted in the 1995 WMP has closely matched actual recorded water demands over the last five years. Accordingly, Valencia believes its planning assumptions and methods used to forecast water demands are reasonable and appropriate for use in calculating projected water demands in the updated WMP.

TABLE II-1 1995 Water Management Program Projected vs. Actual Demands (Acre-Feet)		
	1995	2000
Projected in 1995 WMP	18,000	22,065
Actual 1995	17,641	-
Latest Projection for 2000	-	23,088

It is important to note that the 1995 WMP recognized that imported water from the State Water Project is subject to reduction during droughts. Several water supply programs were identified to overcome temporary water supply shortfalls in the future, should a reduction occur. The programs identified were acquisition of additional State Water Project supply, short and long term water transfers, water conservation and public information, regional and local conjunctive use of groundwater and imported water supplies and water reclamation.

SECTION III

WATER SOURCES AND SUPPLY OUTLOOK

III.a) INTRODUCTION

This section describes the water supplies available to Valencia and illustrates how they are used when meeting existing and projected water demands. Historically, local groundwater pumped from the Alluvial Aquifer and Saugus Formation were the primary sources of water in the Santa Clarita Valley. In 1980, CLWA began delivering imported water from the State Water Project to the four retail water purveyors in the Valley. CLWA and these four entities meet regularly as the Upper Santa Clara Valley Water Committee (Committee) to coordinate the beneficial use of water in the Valley.

Since being formed in 1967, the Committee has hired consultants to conduct technical studies and coordinate water management activities that have formed the basis of the knowledge and understanding of the Valley's water resources. Ultimately, these efforts have resulted in delivery of reliable and high quality water service for Valley customers while developing coordinated resource protection strategies for its continued use.

It should be noted that the groundwater basin in the Valley is unadjudicated. Therefore, neither Valencia nor the other purveyors have "water rights", as would be the case in an adjudicated basin, that dictate their water supply. The total supply available to all purveyors in the basin and the ability of Valencia to access those supplies determines the amount available to Valencia to meet its long-term supply needs. The imported water supply is allocated to water service areas established by CLWA allowing water to be delivered to these service areas when needed. It is based upon the collection of connection fees paid by new development and allocated to water service areas to fund CLWA's capital program. Generally, however, the imported water supply is delivered on a first come, first serve basis.

Therefore, in order to assess Valencia's capacity to deliver water to existing customers as well as meet planned future developments, this WMP will present information about the **total supply** available not only to Valencia, but to the other three retail purveyors as well. This **regional** perspective is appropriate and consistent with the previous WMPs submitted by Valencia to the PUC. It also reflects Valencia's opinion that its water supplies are dependent upon the **total supply** available **and** Valencia's capacity to access and deliver those supplies to its customers.

Reference Documents

The following reference documents were used by Valencia to complete and update its WMP:

- 1) *1995 Water Management Program* prepared by Valencia Water Company. This report was approved by the PUC during Valencia's last general rate case (Decision No. 94-12-020).
- 2) *1998 Santa Clarita Valley Water Report* prepared by the Upper Santa Clara Valley Water Committee, dated February, 1999. This report was requested by the Los Angeles County Board of Supervisors and provides factual information about the current water resources within the Santa Clarita Valley. Updated annually, this report is intended to provide timely and accurate information about both water supply and demand conditions within the Santa Clarita Valley.
- 3) *Castaic Lake Water Agency Draft Integrated Water Resources Plan Water Demand and Supply Evaluation (IWRP)* (1998). This document presents the results of an evaluation of future water supply needs in the service area of Castaic Lake Water Agency.

Description of Water Resources

The WMP identifies six basic water resources available to Valencia. They are: groundwater, imported water supplied by CLWA, recycled water, firming water (i.e.: State's Drought Water Bank, acquiring additional SWP entitlement, and local supply augmentation), conjunctive use programs, and conservation. The WMP emphasizes developing water supplies that increase the diversity of supply available to Valencia.

Diversity of supply is considered a key element of reliability, giving Valencia the ability to draw upon multiple sources of supply during future dry years.

- 1) Alluvial Aquifer: The Alluvial Aquifer has historically been the main source of water within the region prior to importation of water from the State Water Project. In 1998, the local purveyors operated 35 wells and produced approximately 24,000 acre-feet of water from this aquifer for domestic consumption. Based on information from the *1998 Water Report* and *IWRP*, the aquifer has an adopted perennial yield of 32,500 acre-feet per year. Current operating results indicate the aquifer is in good operating condition. An excerpt from the *1998 Water Report* (page 6) describes how the aquifer is managed:

The current management practice of the Committee is to maximize use of the Alluvial Aquifer because of the aquifer's ability to store and produce good quality water on an annual basis. During times of average and wet precipitation, the amount of water pumped from the Alluvial Aquifer can exceed the perennial yield without consequence. However, during prolonged dry periods, exceeding the perennial yield may stress the aquifer by temporarily lowering water levels. Historical groundwater data collected from the Alluvial Aquifer over many hydrologic cycles provides assurance that groundwater elevations return to normal in average to wet years following periods of abnormally low rainfall.

The *1998 Water Report* and *IWRP* indicate that during wet periods, production from the Alluvial Aquifer can be as much as 40,000 acre-feet per year (CLWA draft *IWRP* page 5-2). The *IWRP* suggests that sound basin management considers additional pumping when the aquifer is full (i.e., groundwater elevations are high) to create storage space so that capture of local runoff is increased.

Valencia currently operates 18 wells in the Alluvial Aquifer and has an operational production capacity of approximately 19,700 gallons per minute to meet average day and maximum day demands.

- 2) Saugus Formation: The second source of groundwater production in the Valley is the Saugus Formation. The areal extent of the Saugus Formation is approximately 85 square miles. It is a very important source of supply because it underlies the Alluvial Aquifer and is estimated to contain approximately 1.4 million acre-feet of water in storage, which is about seven times more than the amount found in the Alluvial Aquifer. This quantity of water in storage provides Valley purveyors with a large underground reservoir capable of providing the local purveyors with a reliable annual supply as well as a dry year supply when needed.

The Saugus Formation has not been fully developed but available information reported in the *1998 Water Report* and CLWA's *IWRP* indicates that recharge ranges between 11,000-13,000 acre-feet in dry years and 20,000-22,000 acre-feet in wet years. It is believed that the Saugus Formation could produce up to 40,000 acre-feet or more of groundwater per year. This increased level is assumed to be limited to dry years (short term) when importation of water is reduced. The Saugus Formation is currently full and maintaining the substantial volume of water in storage is an important strategy to help "drought proof" water supplies in the Valley.

At the present time, there are 12 Saugus wells operated by the purveyors with a current operational production capacity of approximately 23,000 acre-feet per year. This basin capacity excludes three existing wells that are temporarily out of service due to the detection of ammonium perchlorate. The detection of this contaminant is localized to those three wells and the on-going remedial activities of the Committee are further discussed on page 12 of the *1998 Water Report*.

Valencia currently operates 5 wells in the Saugus Formation and has an operational production capacity of approximately 10,000 gallons per minute to meet average day and maximum day demands.

- 3) Imported Water: The State Water Project (SWP) began in the early 1960s when public agencies (SWP Contractors) throughout the State of California each executed an individual water supply contract with the Department of Water Resources (DWR) that became the ways and means for the construction and operation of SWP facilities designed to deliver water to the Contractors. Each such contract sets forth a maximum annual entitlement called the "Table A Entitlement." A SWP Contractor may annually request that DWR deliver water in the following year in any amount up to the Contractor's Table A Entitlement. The SWP contracts provide that in a year when DWR is unable to deliver the full amount of contractor requests, deliveries will be allocated according to the Table A entitlements of each contractor. Some Contractors (including CLWA) have never requested delivery of their full annual entitlement because lower growth, other water supplies, and water conservation efforts have held their demand for SWP water below these projections. Other Contractors order their full Table A entitlements nearly every year.

CLWA is the SWP contractor or wholesaler of imported water in the Valley. CLWA operates two water treatment plants capable of producing 55 million gallons of water per day. Both plants are designed to be expanded as water demands increase. From the plants, treated water is delivered by gravity to each of the four purveyors through a distribution network of pipelines and turnouts.

CLWA has an SWP Table A entitlement of 95,200 acre-feet per year. The SWP is not complete and supplies are subject to reduction when state-wide droughts occur. As a result, CLWA and the local retail purveyors have worked together to plan and develop operational strategies to augment the Valley's water supply when imported water is reduced. A discussion of alternate or "firming water" supplies is described later in this section of the report. An expanded discussion of

alternative water supplies available to Valencia and the other water companies is presented in Section 4 of CLWA's *IWRP*.

It is important to note that CLWA funds a \$500 million capital improvement program by collecting connection fees from new developments, which are set by the CLWA Board of Directors and periodically adjusted for changes in the program and estimated costs. The program is designed to fund a wide array of projects deemed necessary by CLWA to meet the water needs for planned developments identified in the general plans of the City of Santa Clarita and the Counties of Los Angeles and Ventura. The program includes construction of facilities for the treatment, storage, and transmission of water as well as acquisition of additional water supplies.

CLWA's Capital Improvement Program has been developed to fulfill its stated mission, which is to provide reliable, quality water at a reasonable cost. Several of the projects are designed to provide, when needed, additional facilities and/or water supplies increasing the dependability of SWP supply. The program's implementation has firmed-up SWP supply in the form of additional water supplies in the earlier years, followed by development of water banking, storage, and conjunctive use in later years. Facilities and water supplies are added on an incremental basis and at least 3 to 5 years ahead of need to ensure infrastructure keeps pace with planned development.

Valencia currently operates 6 connections (Turnouts) with CLWA and has an operational production capacity of approximately 31,500 gallons per minute to meet average day and maximum day demands.

- 4) Recycled Water: CLWA has developed a master plan for delivering highly treated recycled water in the Valley. Recycled water is available from two existing water reclamation plants operated by the County Sanitation Districts of Los Angeles County. CLWA is constructing phase I of the project which will

deliver up to 1,700 acre-feet of water for non-potable use. Valencia encourages the use of recycled water as an important program to maximize current supplies in meeting overall water needs for the Valley.

- 5) **Firming Water:** Firming water supplies are defined as alternate short term supplies (1 to 3 years) made available to the local purveyors to be used when imported water is reduced during drought conditions. For purposes of Valencia's WMP, three firming supply options are included in this report. They are: 1) acquiring additional SWP entitlement, 2) the Drought Water Bank, operated by the State of California, and 3) local supply augmentation.

In 1999, CLWA acquired 41,000 acre-feet of SWP Table A Entitlement (via a permanent transfer) from Kern County Water Agency and its member unit the Wheeler Ridge-Maricopa Water Storage District. This transfer was completed under the terms of the Monterey Agreement, in which agricultural SWP Contractors agreed, on a willing seller willing buyer basis, to make available 130,000 acre-feet of entitlement for permanent transfer to urban SWP Contractors. By this permanent transfer, CLWA SWP Table A Entitlement is 95,200 acre-feet per year. In CLWA's *IWRP*, additional imported water was identified as one component of an overall plan to increase the reliability and availability of water within its service area. For the foreseeable future, this transfer increases their total supply while providing a significant "drought buffer" even in times of shortage.

The State Drought Water Bank is implemented as needed by an executive order of the Governor or a finding by DWR's Director that water deliveries will be curtailed. The purpose of the Bank is to help California's urban, agricultural and environmental interests meet their water supply needs during water short years. This procedure was used successfully in 1991, 1992 and 1994 when DWR purchased water from willing sellers and sold the water to willing buyers under a set of allocation guidelines. Although CLWA's allocation of imported water was

reduced in 1991, it did not participate in the Drought Water Bank program because other alternate supplies were available to meet Valley water demands. For purposes of planning, CLWA's *IWRP* identified short-term deliveries of 20,000 acre-feet or more of water purchased from the state's Drought Water Bank in dry years if needed, to augment the Valley's water supplies.

It is important to note that there are several other state programs in place that CLWA can utilize to "firm up" SWP supplies when they are reduced. A partial listing of programs includes the Supplemental Water Purchase Program, the Interruptible Water Service Program and the SWP Turn-back Pool. These programs are discussed in detail in Section 3, page 3-16 of CLWA's *IWRP*. In summary, these programs provide substantial opportunity for CLWA to increase its water supply and effectively implement water management activities to enhance supply reliability.

Local supply augmentation includes demand management programs (voluntary and mandatory rationing programs) and conjunctive use of stored local groundwater. For planning purposes, the WMP assumes that Valencia customers could voluntarily conserve 10 percent from their normal usage. This is reasonable since Valencia customers, during the last drought in 1991, voluntarily conserved over 20 percent.

As discussed in item 2 above, the Saugus Formation could produce up to 40,000 acre-feet of water per year. This assumes approximately 30,000 acre-feet of water could be withdrawn on a short term basis from the Saugus Formation in addition to the dry year recharge rate of 11,000 acre-feet. In order to achieve this level of production, existing agricultural wells could be converted for domestic use and/or new wells could be constructed.

At the present time, the Valley's primary supplies of groundwater, imported water and recycled water are adequate to meet existing and projected demands for the

foreseeable future. As water demands increase, Valencia, CLWA and the other purveyors will analyze and determine the most beneficial mix of supply options available on a short term basis to meet customer demands. In summary, Valencia's WMP has identified approximately 50,000 acre-feet of firming water supplies (excluding 10 percent voluntary conservation) that is available to Valencia and the other purveyors to be used if and when SWP supplies are reduced.

- 6) **Future Water Sources:** Water supply and facilities for the Valley have increased incrementally over the years in order to keep pace with customer demands. It is not reasonable for service providers to build all that is necessary and acquire water rights to accommodate projected water demands twenty to thirty years in the future. CLWA and the local purveyors plan for new supplies and facilities a minimum of 3 to 5 years ahead of need. In its *IWRP*, CLWA addressed opportunities to increase the sources of both local and imported water supplies over time. These programs include:

Acquisition of Additional SWP Entitlements. CLWA has recently purchased under the Monterey Agreement an additional entitlement of 41,000 acre-feet. In the near term, this additional supply of water will provide added reliability to CLWA's base water supplies. At the present time, additional SWP entitlement is available and CLWA is evaluating the benefits of acquiring additional entitlement along with other programs such as water banking and other storage opportunities needed for planned growth within the Valley.

Devils Den Ranch Groundwater. CLWA is studying the potential to develop groundwater supplies from property it owns on the west side of the San Joaquin Valley near the Kings-Kern County line. Known as the Devil's Den Ranch, water from this groundwater basin could be pumped into the California Aqueduct and delivered to CLWA.

Water Conservation. CLWA will continue to develop and implement its comprehensive water conservation program in cooperation with the four retail agencies. The major emphasis will be on landscape water conservation activities. Based on empirical data on the impact of conservation measures in other cases, which range from 10 to 20 percent, a minimum 10 percent reduction in water demand through conservation is expected.

Water Transfers and Banking. CLWA will continue to pursue transfer and banking activities with other agencies. Particular emphasis will be placed on acquiring additional SWP entitlement under the Monterey Agreement. CLWA will also investigate the opportunities to bank its existing and future surplus SWP entitlement with agencies in Kern County and other neighboring agencies.

Expanded Lake Storage. CLWA will investigate with the MWD and Department of Water Resources the possibility of expanded storage in Castaic Lake beyond its current allocation. Also, flood flows into Castaic Lake will be evaluated to determine if there are opportunities to capture and store local storm water flows.

Recycled Water. CLWA plans to fully implement a cost-effective water recycling program with the four retail purveyors and the Los Angeles County Sanitation Districts, and seek loans from the State and others for a portion of the capital costs.

Groundwater Management. The Committee plans to construct additional wells in the Saugus Aquifer for use during droughts. A phased program to develop these wells would provide valuable additional water supply reliability.

Artificial Groundwater Recharge. CLWA will be evaluating the feasibility of artificial groundwater recharge of the Alluvial and Saugus Aquifers. The Alluvium can best be recharged using off-stream or in-stream spreading facilities. The Saugus can best be recharged by direct injection of imported treated water.

Groundwater Quality Protection Strategy. The Committee plans to expand its coordinated groundwater quality program to reduce the risk of contamination of the drinking water supply.

Conjunctive Use. The Committee plans to assess potential conjunctive use programs. Conjunctive use is the coordinated operation of local and imported water supplies to achieve improved overall water supply management.

In summary, various water supply augmentation programs are being pursued to ensure that new supplies are planned and ultimately added over time. The Valley's water supply is not limited by the current available supply. These long-term planning activities by Valencia, CLWA and the other Committee members are reasonable and appropriate to ensure that new supplies are brought on-line when needed to meet customer demands.

III.b) SUMMARY OF AVAILABLE WATER SUPPLY

The total available water supply for Valencia and the other retail water purveyors is illustrated in Figure III-1. As stated earlier, the Valley is subject to a wide range of hydrologic conditions and water supply variability. In some years, a wet year supply exists and in other years, it is reduced. Figure III-1 shows the supply options available to Valencia and the other purveyors from a wet year to a dry year condition. In summary, the supply ranges from 156,900 acre-feet to 142,800 acre-feet.

Valencia's WMP considers that drought periods may affect available water supplies in any single year and for a duration not longer than three consecutive years. According to DWR, long droughts in excess of three years are rare in Northern California. Except for the period of 1929-1934, there is no evidence of previous droughts exceeding three years in length from historical records dating back to the early 1870s.¹ It is important to note that hydrologic conditions vary from region to region throughout the state. Dry conditions in Northern California affecting SWP supply may not affect local supplies in Southern California. Conversely, dry conditions in Southern California may not impact water deliveries from Northern California. For this reason, Valencia, CLWA and the other Committee members have emphasized developing water supplies that add diversity to the Valley's water resources. Diversity of supply is considered a key element of reliability, giving Valencia the option of drawing on multiple sources of supply during future dry year conditions and thereby making the Valley water purveyors less dependent upon the SWP.

Figure III-1 also illustrates how Valencia and the other Committee members can implement strategies (i.e., banking, transfers) utilizing existing available surplus supplies for use during dry years. This approach strives to balance the available water resources between wet years and dry years resulting in an overall long term increase in water supply yield, especially during dry years, and ultimately defers or eliminates the need to acquire additional new sources of water. It is not reasonable to develop long term water

¹ *The Hydrology of the 1987-1992 California Drought*, Department of Water Resources, Maurice Roos, Chief Hydrologist (October 1992)

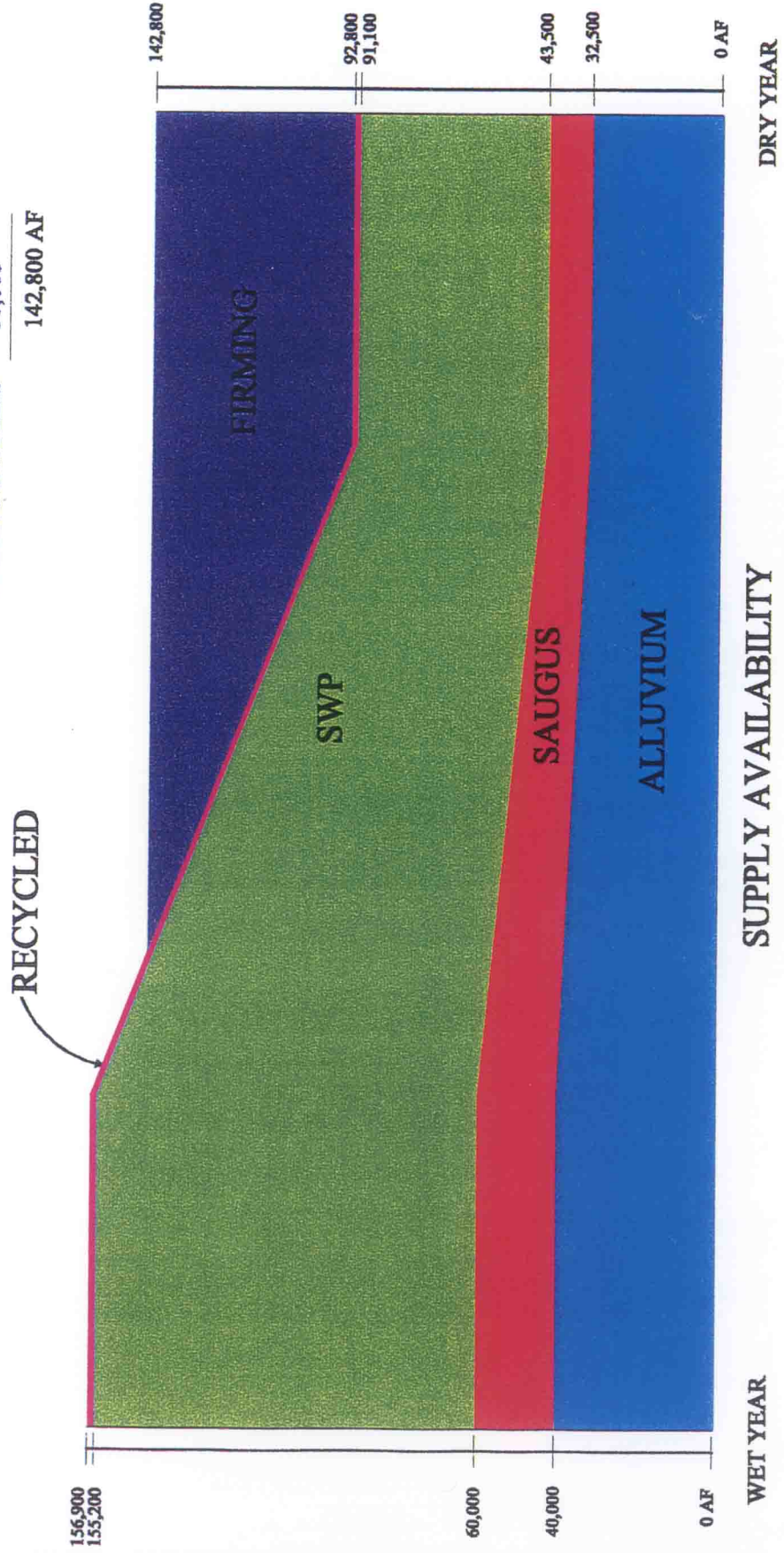
SANTA CLARITA VALLEY WATER SUPPLIES

FIGURE III-1



FULL SUPPLY	
ALLUVIUM	40,000
SAUGUS	20,000
SWP	95,200
RECYCLED	1,700
156,900 AF	

DRY YEAR	
ALLUVIUM	32,500
SAUGUS	11,000
SWP	47,600
RECYCLED	1,700
92,800 AF	
FIRMING SUPPLIES	
	50,000
142,800 AF	



supplies to meet future water demands based solely upon dry year estimates. To do so would result in an over-subscription in water supplies causing an undue cost burden for customers. Valencia, CLWA and the other Committee members add water supply and facilities on an incremental basis and in advance of need.

III.c) WATER DEMANDS

Water Demands-Valley Wide

In its *IWRP*, CLWA evaluated the long-term water demands resulting from applicable county and/or city plans within its service area. The *IWRP* calculated a range of water demands based upon existing urban land use plans and estimated water demand factors for those uses. The *IWRP* estimated Valley build-out water demands of 149,000 to 201,000 acre-feet per year. Valencia believes this information is useful for water planners to assess ultimate build-out water demands for the Valley, but is not appropriate for use in Valencia's WMP. The WMP is required to project water demands over a 20-year timeframe. The *IWRP* water demand projections are not based on any specific timeframe. It simply provides a build-out or ultimate estimate of water demands for the Valley based on existing land use approvals and the City and County General Plans.

The approach used in Valencia's WMP utilizes Los Angeles County's Development Monitoring System (DMS) to forecast future water demands. The County's Regional Planning Department maintains DMS and calculates the water demands of all subdivision and parcel map projects occurring within the unincorporated lands of Los Angeles County and the City of Santa Clarita. The County DMS reports existing water demands and projected water demands from all pending, approved and recorded projects in each of the retail purveyors' service areas.² Table III-1 shows a DMS build-out water demand of 79,394 acre-feet for the Valley.³

² Pending projects are those for which the developer has submitted a tract map to the County for approval, and the project is under review by the County. Approved projects are those which the County has approved the tract map, and the developer may begin construction of the project. Recorded projects are those which have met all requirements according to the General Plan, and the County has accepted the project as complete.

**TABLE III-1
Santa Clarita Valley
DMS Build-Out Water Demands
(Acre-Feet)**

	Existing Total Demand	Pending Demand	Approved Demand	Recorded Demand	TOTAL
Newhall County	8,087	2,640	1,177	564	12,468
Santa Clarita	20,319	2,272	3,515	790	26,896
LA County Dist. #36	578	477	207	90	1,352
Valencia	19,874	1,540	2,408	1,245	25,067
TOTAL PURVEYOR DEMAND	48,858	6,929	7,307	2,689	65,783
Other	13,611	0	0	0	13,611
TOTAL DEMAND	62,469	6,929	7,307	2,689	79,394

The "Other" demand listed above is reported in the *1998 Water Report* as groundwater primarily used for agricultural purposes and domestic use for Los Angeles County's Peter J. Pitchess Detention Center. It is assumed that agricultural demands will decline over time and will be offset to a lesser extent by increasing urban water use as development occurs. For purposes of planning, Valencia's WMP conservatively includes the existing agricultural demands in its analyses of future urban water demand projections.

In summary, the County's DMS report provides Valencia and the PUC with the most accurate and up-to-date summary of all building activity and corresponding water demands likely to receive water service from Valencia and the other retail purveyors in the foreseeable future. Some of these projects reported in DMS would require Valencia to file an advice letter with the PUC requesting an extension of service. When Valencia files an advice letter to extend service, the County's DMS report would be available to the PUC for review as a method to ensure itself that Valencia had sufficient supply and would not be overextending its ability to serve new customers. The DMS report is updated on a regular basis by Los Angeles County and provides a Valley-wide

³ DMS water demands obtained from Mr. Bill Miller at Los Angeles County Regional Planning Department, report dated July 28, 1999.

perspective regarding the current availability of supply to meet existing and projected water demands.

Water Demands- Valencia

Table III-2 shows total water demand for Valencia from 1990 and projected through 2020. The projected demand is based on estimates of customer growth and usage per customer for each class of customers. The annual usage factors for each class of customers were derived from a multiple regression analysis study which statistically analyzed historical usage, rainfall, and temperature data to project future usage under normal conditions. The annual usage factor for the single family residential class of customers, which represents more than half of Valencia's total demand, is .60 acre-feet per year per customer. The average of Valencia's actual historical usage per residential customer since 1988 is .57 acre-feet, which provides additional support for the reasonableness of the .60 acre-feet used for these demand projections.

Using the CPUC approved regression analysis model and assuming 800 new customers per year (based on a long-term historical average), Valencia's service area demand, projected to year 2020, is approximately 41,000 AF. It should be noted that per capita water usage by Valencia's customers is declining over time. Residential customer demand was calculated to be approximately .62 acre-feet per year in Valencia's 1995 general rate case. Using the same CPUC approved regression analysis model used in the 1995 general rate case, updated to reflect current data, residential customer demand is now approximately .60 acre-feet per year. This decrease reflects the ongoing conservation efforts in the community.

**TABLE III-2
Valencia Water Company
Water Demand
(Acre-Feet)**

Water Use Sectors	1990	1995	2000	2005	2010	2015	2020
	Actual		Projected				
Single family residential	9,351	9,544	12,067	14,646	16,991	19,336	21,681
Multi-family residential	857	954	1,093	1,314	1,525	1,736	1,947
Commercial	2,753	2,750	4,754	5,683	6,488	7,292	8,097
Industrial	1,669	1,332	1,564	1,866	2,163	2,460	2,758
Institutional / governmental	1,556	2,725	3,270	3,931	4,559	5,187	5,815
Golf Course Irrigation	386	336	340	680	680	680	680
Total	16,572	17,641	23,088	28,120	32,406	36,691	40,978

III.d) WATER SUPPLY OUTLOOK

Valencia uses the following water reliability goal for its water supply: Water demands are met 95 percent of the time or 19 out of 20 years. In the remaining 5 percent of the time, it is assumed that the maximum allowable supply shortage will be 10 percent of demands. Valencia, as well as the other local purveyors chose this level even though during the last drought of the early 1990's, a 10 percent reduction was targeted, and 20 percent was actually achieved on a voluntary basis.

Valencia's WMP describes many water management options available to meet future water supply needs. It is recognized that the various water supplies available to Valencia and the other water purveyors have different reliability characteristics. As such, Valencia has met this challenge by planning and developing its own water system ensuring that it is flexible in its operation and capable of accessing and delivering a diverse mix of water at any given time. In this way, Valencia has addressed reliability in that its customers are not limited to receiving only one source of supply.

The recent drought of the early 1990's provided an illustration of the benefits of having a diverse supply. Valencia was not subject to any water shortages except for one year because three primary sources of water were available: the SWP, Alluvial Aquifer and the Saugus Formation. Those areas of the state that were solely dependent on the SWP or

local surface waters, such as Santa Barbara and Ventura Counties, were affected immediately and suffered severe cutbacks during the initial years of the drought. This was not the case for Santa Clarita Valley residents because alternate supplies were only needed in the fifth year (1991) of the drought after the SWP experienced temporary reductions in supply. Since 1991, on-going water development activities by the Committee have increased water supply to the region, enhancing water reliability.

Figure III-2 compares the current available water supply under varying conditions with total demand (existing and projected) reported in DMS. Because the Valley's water supplies are diverse and Valencia has existing facilities to access those supplies, no supply deficiencies are forecasted in this WMP. CLWA's existing SWP Entitlement provides sufficient reliability for the foreseeable future to meet projected demands. In the event of an extended dry period (up to three years), Valencia along with the other water companies have access to alternate supplies to ensure dependable service to customers.

SANTA CLARITA VALLEY WATER SUPPLIES

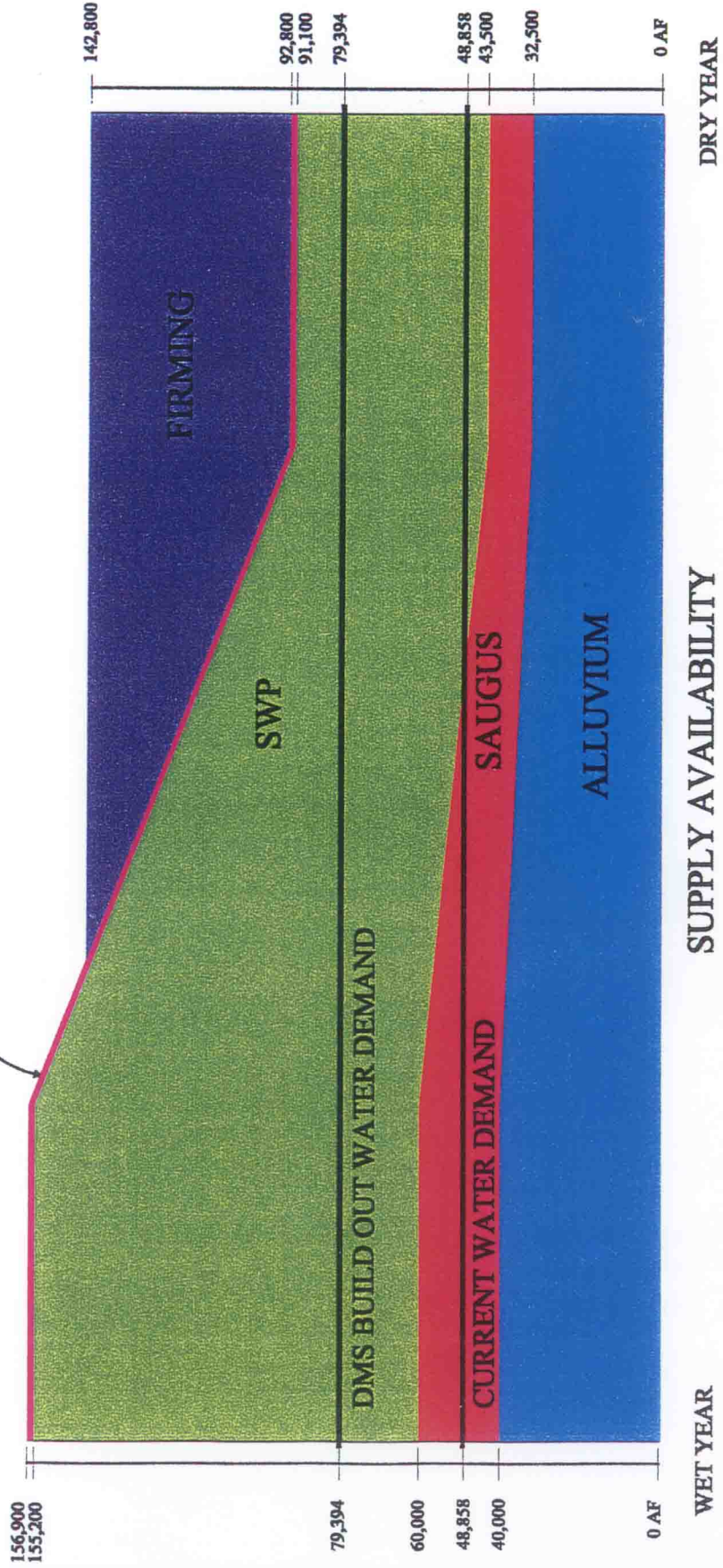
FIGURE III-2



FULL SUPPLY	
ALLUVIUM	40,000
SAUGUS	20,000
SWP	95,200
RECYCLED	1,700
156,900 AF	

DRY YEAR	
ALLUVIUM	32,500
SAUGUS	11,000
SWP	47,600
RECYCLED	1,700
92,800 AF	
FIRMING SUPPLIES	
	50,000
142,800 AF	

RECYCLED



*Current water demand of 48,858 acre-feet as reported in Table III-5 of the 1998 Water Report.

SECTION IV

WATER CONSERVATION PROGRAMS TO BE IMPLEMENTED

The majority of water conservation programs implemented by Valencia have little or no cost associated with them, usually requiring little more than the dissemination of literature, public information, and inexpensive kits for home conservation. Most of the conservation efforts in the Valley are managed by CLWA in cooperation with the retail water purveyors. Valencia's direct investment in these programs is minimal but funds them indirectly through water rates paid to CLWA for purchased water. For this reason, there was no need to conduct elaborate economic tests to justify Valencia's participation in these water conservation programs.

IV.a) CLWA CONSERVATION PROGRAMS

CLWA's various water conservation programs are geared toward eliminating wasteful water use practices, developing public information on current and potential conservation practices and implementing worthwhile programs on a timely basis. Public education and conservation programs are important elements toward meeting future water demands.

Youth Elementary Education Program

Approximately 6,000 students per year participate in CLWA's Elementary Education Program, provided as a community service to students grades K-6. Conducted in partnership with the Valley elementary schools, children in the program learned different aspects about water and its importance to life. The California State accredited program offered by CLWA also includes a pilot program on water for grades K-3.

Thousands of education packets and materials featuring water conservation messages were distributed through the Elementary Education Program and to children attending public events. Examples of youth education item giveaways are water conservation

rulers (which graphically shows that only 1/3 of 1% of Earth's water is available for consumption) and water bottles (which display a penguin and the slogan "It's cool to be water-wise").

Water Conservatory Garden and Learning Center

Approximately 100 people per week visit CLWA's conservatory Garden and Learning Center to learn more about water-wise landscaping. The seven-acre garden in the heart of the Valley features educational signs and hundreds of varieties of roses and plants that are best suited for the extreme climates of the Valley. A comprehensive Conservatory Garden Guide is available at the offices of CLWA. The guide lists important planting details about hundreds of plant species.

Conservatory Garden Docent Program

The Conservatory Garden Docent Program provides an opportunity for community volunteers to become involved in the maintenance and public presentation of the garden. Docents are in the garden every weekend and during most special events. In 1998, local residents and community groups contributed a total of 2,655 volunteer docent hours.

Adult Landscape Education Program

A total of 600 adults participated in the 1997-98 Landscape Education Program, which offered 11 monthly workshops on different aspects of water-wise landscaping. The workshops are held each year from January through October at the Conservatory Garden and Learning Center. Topics include Irrigation Basics, Selecting Fall Plants, Soils and Landscape Design. To promote the program, brochures showing the schedule of workshops are distributed through point of purchase displays at local nurseries. The most current schedule of landscape education workshops is included in Appendix A. Additionally, Appendix B includes CWLA's newsletter, *Water Currents*, which provides information to the public about the landscape education program.

Speaker's Bureau

As another public service to the community, CLWA directors and staff serve as speakers at local events and civic organization meetings. Since the program inception in November 1997, over 300 people have attended Speaker Bureau presentations on topics including: the Conservatory Garden and Learning Center, the History of Water in California and in the Valley, the State Water Project and CLWA Facilities, Water Quality, and the Elementary Education Program. Each presentation begins and ends with a discussion of the value of water in our State and in Southern California.

Public Information – Print and Broadcast Media, Direct Mail and Web Site

CLWA disseminates water conservation information in many of its public materials and notifications, as described below.

Newspapers/Magazines/Directories:

Press releases and advertisements promoting water conservation and CLWA programs (as described above) are submitted and appear throughout the year in: The Signal, The Daily News, The Magazine of Santa Clarita, and the Valley Chamber Business Directory.

Radio:

A series of five public service announcements along with 21 advertisements air monthly on a year-round basis on the local radio station, KBET-AM. The 60-second paid spots alternately present information on water-wise landscaping and residential water conservation. The three-minute public service announcements are abbreviated versions of the CLWA Speakers Bureau speeches.

Direct Mail: Approximately 50,000 1998 Water Quality Reports were mailed to businesses and residences in accordance with State and Federal law. CLWA and the retail purveyors used the eight-page report to feature a series of main headline statements on water conservation and preservation. One page of the report was devoted to water conservation tips and information. On the back cover of the report was a popular multiple-choice "Water IQ" test.

CLWA Newsletter *Water Currents*

The CLWA newsletter, *Water Currents*, was mailed in the same envelope with the Annual Water Quality Report. The message on the front of the envelope was: "Use Water Wisely. Every Drop Counts." A subsequent envelope was printed with the message, "Summer is Here. Use Water Wisely."

Each quarterly CLWA newsletter features water conservation tips and includes a return post card which people can use to request more information on landscape education workshops, elementary school education programs, CLWA Speakers Bureau and other water conservation issues. A new feature of *Water Currents* is a column called "Talking Purely About Water" which provides information on how people can preserve water resources. A copy of the Summer 1999 issue of *Water Currents* is attached as Appendix B.

Theater On-Screen Advertising

A theater on-screen advertising campaign by CLWA is currently underway on 24 movie screens in two theaters in the Valley. The Disney Productions feature movie, "Mighty Joe Young", was filmed at the CLWA Conservatory Garden. While this hit movie was appearing in the local theaters, water conservation messages presented by CLWA appeared prior to all the theater's movies. Due to the success of the program and the large number of people this type of advertising reaches, CLWA has continued the on-screen advertising which promotes conservation and invites the public to visit the Conservatory Garden.

Throughout the year, CLWA distributes a series of brochures entitled, "The Value of Water," "Castaic Lake Water Agency," "The Conservatory Garden and Learning Center," and the "CLWA Speakers Bureau." "The Value of Water" brochure shows tables and graphs of how much water is used for agriculture, business, the environment, and residential purposes. The other full color brochures in the series stress the importance of wise-water use.

CLWA Web Site

The CLWA web site, <http://www.clwa.org/> presents extensive up-to-date information on many aspects of CLWA, its activities, and its facilities. The web site features a variety of high resolution, color photos for browsers to select to view. During 1998, the CLWA web site received 4,000 hits.

Public Tours of Rio Vista Water Treatment Plant

To help people better understand and appreciate the treatment and transmission of imported State Water Project water, public tours of Rio Vista Water Treatment Plant are provided every Thursday and on the third Saturday of each month at 1 p.m. A total of 1,600 people toured the plant in 1998.

Public Events and Activities

To help people better understand and appreciate the water resources of the State of California, CLWA conducted two State Water Project tours, a Water Issues Committee, a Los Angeles County Public Library Program, and a California Water Awareness Month Open House. CLWA participated as an exhibitor in the Valley Chamber of Commerce Business Mixer, and in the City of Santa Clarita's River Rally. CLWA also participated in the October 1998 Business Expo which was attended by approximately 13,000 – 15,000 people. CLWA participated in the City of Santa Clarita Emergency Preparedness Expo which is a city sponsored event featuring local businesses providing services and information related to emergency preparedness. Thousands of individuals participated in other CLWA and community public events.

California State Water Awareness Campaign

About 700 guests attended the CLWA annual Open House, which celebrates California Water Awareness Month. At the Open House, participants were asked to provide a water saving tip to share with others. The tips are printed in CLWA newsletters. Also, each May, children's suggestions on how to save water are aired every morning on the local radio station, KBET-AM.

As part of the Water Awareness Campaign, CLWA annually invites a group of active community members to tour the State Water Project. The inspection trip, which began at the Rio Vista Water Treatment Plant, allowed participants to see where the imported water supply used locally originates and the path it travels to reach the Valley. The State Water Project tour is conducted by CLWA to help better educate local residents and business representatives about the importance of water to the Valley.

Civic / Private Special Events

In 1998, the public facilities of CLWA were used by dozens of community clubs and organizations for meetings and receptions. The CLWA administrative building and its adjacent Conservatory Garden also were used for a variety of private celebrations throughout the year.

The objective of CLWA in opening its doors for public use was to provide wide-spread exposure to the practice of water-wise landscaping and the basic practices of water treatment and transmission. A total of 4,200 guests attended civic and private special events held at CLWA. It is considered that the vast majority of these individuals would not have visited the water treatment plant and conservation garden otherwise.

Many of the special events raised money for non-profit service organizations in the community.

Water Conservation Giveaway Items

Thousands of water conservation items were distributed at the public events and activities described above. Some of the items included:

- Notepads printed with the headline "Water is Precious. Use Water Wisely."
- Toothbrushes imprinted with the headline "Save Water. Turn Off Your Tap."
- Magnets imprinted with public hours for the Garden and the Rio Vista tours
- Water Bottles imprinted with "It's Cool to be Water-Wise"
- Totebags imprinted with "Help Conserve and Preserve All Natural Resources."

- Poppy seeds with text on planting this drought-resistant California State Flower
- Rio Vista Water Bottles: CLWA distributed thousands of bottles of water treated at Rio Vista in an attempt to help local residents understand that their tap water is safe to drink.

Water Conservation Awards

In 1998 and 1999, CLWA was awarded first place in The Association of California Water Agencies (ACWA) Theodore Roosevelt Environmental Award. CLWA was one of three finalists in the Clair A. Hill Award for Excellence, and received three of nine first place awards in the Water Management Awareness Program. During 1998 and 1999, CLWA received certification in the ACWA Water Management Program and was honored for their achievements at the ACWA Fall Conference.

Connection Fees

Connection fees are paid by developers to CLWA based on water demand. Developers therefore have a strong incentive to take measures to conserve water within their developments, such as irrigation drip systems and drought tolerant plants.

IV.b) VALENCIA WATER CONSERVATION PROGRAMS

In addition to the programs administered by CLWA as described above, Valencia has several of its own water conservation programs. It should be noted that per capita water usage by Valencia's customers continues to decline over time. Residential customer demand was calculated as approximately .62 acre-feet per year in Valencia's 1995 general rate case. Using the same CPUC approved regression analysis model used in the 1995 general rate case, updated to reflect current data, residential customer demand is now approximately .60 acre-feet per year. This decrease reflects the ongoing conservation efforts in the community.

Customer Bills

This program has been reaching all metered customers on a monthly basis, which represents more than 95% of Valencia's customers. All metered customers are provided with historical usage on their monthly billing statements. This allows customers to compare their water usage with the same period of the prior year, and to monitor their water usage over time. Additionally, each monthly bill includes brief messages promoting conservation, such as "Use Water Wisely". This program has been very effective because it reaches such a large percentage of Valencia's customers, and because of the fact that customers are reminded on a monthly basis about their usage and about the importance on conservation.

Adopt-a-School

Valencia has participated in the local Adopt-a-School program for the last two years. In this program, a Valencia representative visits local elementary schools and teaches the students about water conservation and water saving techniques. Water education materials are also distributed.

Stevenson Ranch Family Festival

Valencia has participated in the Stevenson Ranch Family Festival for the last two years. Stevenson Ranch is one of the communities within Valencia's service area. At the festival, Valencia has a booth where Valencia representatives answer questions from the public and distribute information on conservation and water saving techniques.

City of Santa Clarita Emergency Preparedness Expo

Valencia participates in the City of Santa Clarita Emergency Preparedness Expo which is a city sponsored event featuring local businesses providing services and information related to emergency preparedness. At this event, Valencia has a booth where Valencia representatives answer questions from the public and distribute information on conservation and water saving techniques.

Water Conservation Kits

Water Conservation Kits are available in the lobby of Valencia's offices, and kits are also distributed through the mail upon customer request. The kits include a water saver for shower heads, a toilet displacement bag, a dye tablet for leak detection, as well as information on water saving techniques.

IV.c) VALENCIA WATER LOSS REDUCTION TECHNIQUES

Valencia has many standard procedures which help to minimize water losses. Valencia consistently tracks unaccounted for or slippage water to ensure slippage remains at a reasonable level based on industry averages. All Valencia employees are trained to continually watch for leaks and any leaks noted are repaired immediately. Employees are instructed to watch for and put a stop to any unauthorized hydrant use throughout the service area to discourage this practice.

All services within Valencia's system are metered, with the exception of fire services. Customer water meters are changed out on a regular rotation to help ensure their accuracy. Meters for main line facilities are checked and calibrated on routine schedules which vary with the type of meter and the local service conditions.

Valencia has a regular schedule for exercising valves to insure proper operation to facilitate blocking or rerouting flows during emergencies which include major main breaks.

Valencia has very little corrosion because most pipelines are either plastic, ductile iron, or asbestos cement. The ground and surface waters are not considered to be corrosive, the soils are not considered to induce corrosion, and the groundwater table is below pipeline construction zones.

APPENDIX A

CLWA LANDSCAPE EDUCATION PROGRAM

Castaic Lake Water Agency
LANDSCAPE EDUCATION WORKSHOPS

All Workshops are from 9:00 a.m. to 12:00 noon and include question and answer periods
 We repeat these classes each year, and generally meet the third Saturday each month.

Soils and Fertilizers Prepare your soil for improved plant health (Healthy plants use less water)	November 20, 1999
Pruning Methods to prune most any plant Hands-on pruning for roses and fruit trees	January 15, 2000
Propagation Grow new plants from seeds, cuttings, grafting, division, and more.	February 19, 2000
Plant Selection: Trees and Shrubs	March 18, 2000
Irrigation Basics Sprinkler and Drip Irrigation Design and Installation	April 15, 2000
Water Management/Audit Techniques for managing water in and around your home (Easy ways to save water and money)	May 20, 2000
Turf Selection/Maintenance Selecting and maintaining a healthy lawn	June 17, 2000
Landscape Design Principles New home or old... Learn the basics of good landscape design	July 15, 2000
Pest Diagnosis: Weeds Identify and control weeds	August 19, 2000
Pest Diagnosis: Diseases & Insects Identify and control plant diseases and Insects	September 16, 2000
Fall Plant Selection: Annuals and Perennials	October 21, 2000

APPENDIX B

WATER CURRENTS – SUMMER 1999

Water Currents

Locals Celebrate Water Awareness, Support Worthy Causes at Castaic Lake Water Agency

On Sunday, May 2, over 1,000 people attended the annual "Taste of the Town" fundraiser, held in the beautiful seven-acre Conservatory Garden at Castaic Lake Water Agency. The event showcased the talents of more than two dozen local restaurants and caterers. Taste of the Town proceeds benefit the Santa Clarita Valley Child and Family Development Center. About 1,300 people attended CLWA's Open House on Saturday, May 15.



In this issue...

- State Water Project Trip
- Water Conservation Tips
- Composting Classes Offered
- Landscape Education Program
- ... and more!

The popular annual event featured guided tours of CLWA's state-of-the-art Rio Vista Treatment Plant, as well as Landscape Education Workshops and self-guided tours of the Conservatory Garden.

On display was the work of hundreds of aspiring young artists who entered the CLWA-sponsored Water Awareness Coloring Contest. Winners received certificates in a special awards ceremony. (See page 6.)

At a game booth, guests were invited to test their water knowledge (and win prizes) by answering questions concerning water-related issues and trivia. As in years past, local nurseries, area agencies and community businesses were on hand to promote the products and services they provide.

CLWA holds its annual Open House each May in celebration of California Water Awareness Month.

Community Leaders Embark Upon a Comprehensive Three-Day Inspection Trip of the State Water Project

As part of the state-wide California Water Awareness Campaign, Castaic Lake Water Agency invited a group of active community members to tour the State Water Project. The inspection trip, which began at the Rio Vista Water Treatment Plant in Santa Clarita, allowed participants to see where the imported water supply used locally originates and the path it travels to reach the Santa Clarita Valley.

After touring the Rio Vista Plant, participants traveled to Castaic Lake to visit the Earl Schmidt Filtration Plant. From there, participants visited the Edmonston Pumping Plant and the Vista del Lago Visitor Center at Pyramid Lake.

On the second day of the tour, those attending had the opportunity to visit Oroville Lake and Dam, the Edward G. Hyatt Power Plant, and the Feather River Fish Hatchery.

The third and final day of the outing included a tour of the Sacramento/San Joaquin Delta and the Harvey O. Banks Pumping Plant.

Community leaders involved represented local businesses, school districts, non-profit organizations, sports groups, water providers, landholders, government divisions, environmental groups, and the press.

The State Water Project Inspection Trip is conducted annually by CLWA, to help better educate local residents and business representatives about the importance of water to the Santa Clarita Valley.



Inspection trip participants seen here at the CLWA Rio Vista Water Treatment Plant and Conservatory Garden.



At Edmonston Pumping Plant (at the base of the Grapevine), State Water Project Inspection Trip guests learned how water is pumped up 2,000 feet to travel



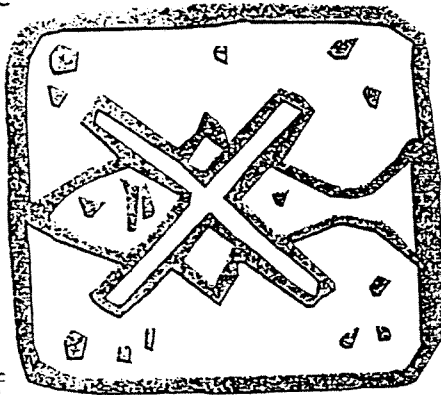
City staff member, Jenni Santizo, and AYSO soccer player, Tyler Roth pictured above at the Harvey O. Banks Pumping Plant.

Talking "Purely About" Water . . .

NO DUMPING. THIS DRAINS TO OCEAN.

You have probably seen these familiar words encircled on storm drains throughout the Santa Clarita Valley. Since the Pacific Ocean seems a long ways away, sometimes it's easy to forget that water poured into local storm drains eventually winds up here. If run-off water has been contaminated with toxic substances, these pollutants pour into the ocean as well.

When water is tested for toxins in a laboratory, it is common for substances to be measured in *parts per billion*. It only takes a small quantity of certain substances to foul an enormous amount of water.



For instance, one quart of motor oil can form an oil slick covering thousands of square feet and can contaminate 250,000 gallons of water. One cup of PCBs (a dry cleaning industry byproduct) can contaminate the water supply of four families for a year.

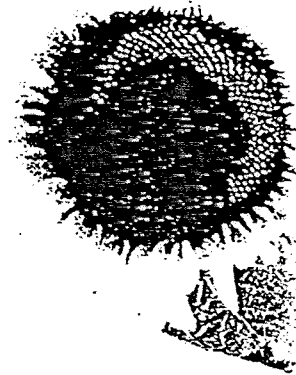
Take a quick look around your home and identify substances that are toxic to the environment. Pay particular attention to batteries, petroleum products, paints and solvents. They will often carry messages such as "do not dispose of in a landfill," or "do not discharge into public sewer system." You can help to protect our environment by heeding these warnings.

On July 1, 1999, the City of Santa Clarita Department of Environmental Services introduced a door-to-door hazardous waste pilot program. Residents of Santa Clarita can call 1-800-499-7587 to schedule an appointment for free hazardous waste pick-ups at their homes.

Materials collected between now and September 30, 1999, include: antifreeze, auto batteries, used motor oil, latex paint, oil-based paint, pesticides, herbicides, household cleaners and other toxic substances.

"You never want to put household hazardous materials in the storm drains or in the trash," said City Recycling Coordinator, David Peterson. "The City's new program will contribute to the sustainability of our quality of life in Santa Clarita."

Castaic Lake Water Agency offers information about hazardous materials. For a copy of a hazardous materials handout, fill out the postcard in this newsletter and mail it to the Agency. Please help out by doing



Castaic Lake Water Agency Landscape Education Program

*All workshops are 9 a.m. - noon
at the Conservatory Garden at
Rio Vista Treatment Plant*

Pest Diagnosis: Weeds

August 21

Pest Diagnosis:

Diseases & Insects

September 18

Plant Selection:

Annuals & Perennials

October 16

Call 297-1600 to Register

A Community

GROWS

Where Water

FLOWS



**All
living things
depend on
water.**

A supply of clean, pure water is essential for life. Do your part to protect and conserve this precious natural resource. Please use only your fair share.

Use Water Wisely.
It's A Way of Life!

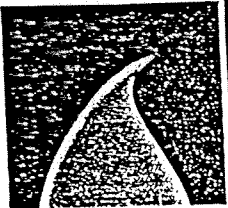
If you would like to be added to our mailing list or receive more information about local water resources, please fill out this card and drop it in the mail.

Name _____

Address _____

City _____ State _____ Zip _____

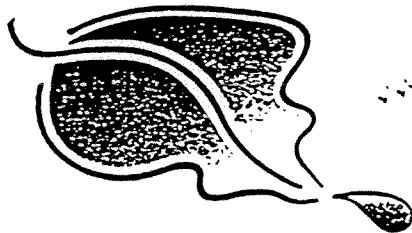
**CASTAIC
LAKE**



**WATER
AGENCY**

Please send me information regarding the following:

- ☐ Landscape Education Workshops
- ☐ Elementary School Education Program
- ☐ CLWA Speakers Bureau
- ☐ Emergency Preparedness Information on Water
- ☐ 1999 Water Quality Report
- ☐ Water Conservation/Water Preservation



WATER CONSERVATORY

GARDEN & LEARNING CENTER

A COMMUNITY PROJECT SPONSORED BY
CASTAIC LAKE WATER AGENCY

Open: Tuesday through Friday
8 a.m. — 5 p.m.
Saturdays 9 a.m. — 3 p.m.
Closed: Sundays, Mondays and Holidays

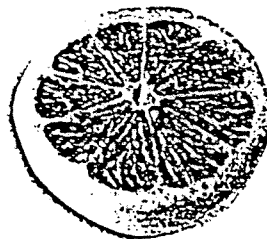
CASTAIC
LAKE



WATER
AGENCY

LOCATED AT
27234 BOUQUET CANYON ROAD
IN SANTA CLARITA

**It takes
a lot of water
to produce
food.**



It takes 14 gallons of water to grow an orange, and 48 gallons to produce a cup of milk. An 8-ounce steak requires 1,232 gallons! And it takes lots more water to manufacture the packaging.

Use Water Wisely.

It's A Way of Life!



Postage
Required
Post Office will
not deliver
without proper
postage.

CASTAIC LAKE WATER AGENCY
27234 BOUGUET CANYON RD
SANTA CLARITA CA 91350-2102



Student Artists Honored at LWA Open House

Award-winning student artists in grades K-6 were honored at the Castaic Lake Water Agency Open House, their entries in the Water Awareness Month Coloring Contest. The following elementary school students received certificates, ribbons and prizes for their colorful drawings:

1st Place (K-2) - Anpreet Kaur, Cedar Creek School, 2nd Place (K-2) - Anpreet Kaur, Cedar Creek School, 3rd Place (K-2) - Abby Simonet, Cedar Creek School, 4th Place (K-2) - Kevin Hancock, Cedar Creek School, Honorable Mention (K-2) - Weston Kilbride, Cedar Creek School, 1st Place (3-4) - Laura Jane Whiteside,



2nd Place (3-4) - Julie Ann Traurig, Santa Clarita Elementary, 3rd Place (3-4) - Adam Lewis, Santa Clarita Elementary, Honorable Mention (3-4) - Jennifer Arango, Santa Clarita Elementary School, 1st Place (5-6) - Merlinda Salas, Canyon Springs School, 2nd Place (5-6) - Omar Vargas, Canyon Springs School, 3rd Place (5-6) - Paulina Franco, Canyon Springs School, Honorable Mention (3-4) - Brooke Bergiadis, Highlands Elementary School.

The theme of the 1999 CLWA Coloring Contest was, "Where does my drinking water come from?" Hundreds of entries were received by the CLWA Education Department from elementary schools throughout the Santa Clarita Valley. (Winners are pictured on the cover of this newsletter.)

Mark Your Calendar to Attend Yard Waste Classes

You are invited to join in Los Angeles County Yard Waste Workshops, being held at the Conservatory Garden at Rio Vista Water Treatment Plant. Upcoming local classes are being held at 1 p.m. on Saturday, September 18 and November 20, 1999. Gardening gloves, water bottles, and AMC Theater and Starbucks discount coupons are distributed to participants. For information, call (661) 297-1600 or (661) 297-2652.

School Program Chalks Up Record-Breaking Year

Almost 6,000 students in grades K-6 were involved in the Castaic Lake Water Agency Elementary School Education Program this past school year. This participation represents an increase of 82% over the previous school year. Highlighting the 1998/1999 program was the introduction of a new grade 4 program, which focuses on microscopic testing and treatment of water samples at the CLWA Earl Schmidt Filtration Plant Laboratory.

Surf to CLWA on the Web

Computer users can find up-to-date information on educational programs, meeting dates and agendas, water-saving hints, and water trivia on the internet. To learn more about CLWA, check out the Agency's web site at:

www.clwa.org

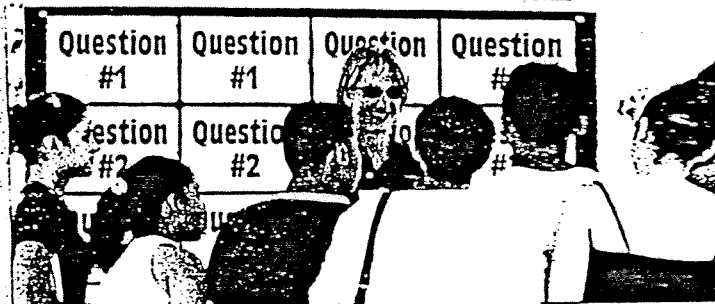
Castaic Lake Water Agency

WATER ON EARTH

SAVING WATER

WATER QUALITY

H₂O TRIVIA



As a public service, CLWA participated as an exhibitor at the 1999 Santa Clarita Valley Country Fair. Guests were invited to play the "Water Game," answering questions about water-related topics. The Country Fair was held July 3 and 4 at Newhall Park. The annual event benefits the Theatre Arts for Children organization.

Water Currents

is a publication of
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

For newsletter information call
Kica Stratton at (661) 297-1600

APPENDIX C

NEWSPAPER ARTICLE ON RECYCLED WATER

The Signal, November 1999

McKeon pours support into CLWA bill

■ Legislation to fund \$76.5 million water reclamation project.

By Chris Dickerson
Signal Staff Writer

U.S. Rep. Howard P. "Buck" McKeon, R-Santa Clarita, announced Tuesday that he has introduced a bill that would provide federal funding for a \$76.5 million water reclamation project

the service area of the Castaic Lake Water Agency."

The bill stipulates that the federal government shall provide up to 25 percent of the project's costs.

"I am happy to seek this assistance for the CLWA as it embarks on this important project," McKeon said in a written statement. "Making use of reclaimed water will free up more drinking water for the citizens of the Santa Clarita Valley. It's great that the

CLWA is planning now to take the steps necessary to provide water for the valley far into the future."

Under the plan, CLWA, the Santa Clarita Valley's water wholesaler, will provide approximately 9,000 acre feet per year of water to existing customers — 3,700 acre feet for golf courses, 1,300 acre feet for parks, 1,100 acre feet for residential landscaping, 1,000 acre feet for schools, 700 acre feet for a co-generation plant, 500 acre feet

for commercial/industrial and 500 acre feet for Six Flags Magic Mountain.

About 7,300 acre feet per year of the recycled water will also go for future users, including planned residential developments, industrial development and golf courses.

The recycled water comes from effluent that is treated at existing facilities owned and operated by the Los Angeles County Sanitation

See CLWA, page A3

CLWA

Continued from page A1

Districts.

The components of CLWA's recycled water project include a reuse pump station located at each water reclamation plant to provide recycled water to the distribution system; about 429,000 linear feet of distribution pipe ranging in size from 6 to 38 inches in diameter; 10 booster pump stations with varying capacities located throughout the distribution system; and 12 above-ground reservoirs providing a

total storage capacity of 24.5 million gallons.

CLWA is embarking on the reclamation project to make more efficient use of its available water.

The Water Use Efficiency component of the CALFED Bay-Delta Program is expected to bypass more than 3 million acre feet of water demand annually by the year 2020 through locally implemented conservation efforts like water recycling. CALFED, the U.S. Bureau of Reclamation and the state Department of Water Resources are encouraging regional water

recycling opportunities that maximize reuse at minimal cost.

"Because the Santa Clarita Valley is growing rapidly, new developments can be planned to include the infrastructure necessary to provide recycled water to new communities," McKeon said. "Construction of these facilities at the onset of development is much more cost-effective than retrofitting existing facilities. Being able to use recycled water for industrial and similar uses frees up drinking water for households."

TABLE III-1 (Revised)
Santa Clarita Valley
DMS Build-Out Water Demands
(Acre-Feet)

	Existing Total Demand	Pending Demand	Approved Demand	Recorded Demand	TOTAL
Newhall County	9,348	3,790	1,260	1,264	15,662
Santa Clarita	24,513	2,294	3,646	967	31,420
LA County Dist. #36	654	617	114	204	1,589
Valencia	22,735	2,647	4,602	1,255	31,239
TOTAL PURVEYOR DEMAND	57,250	9,348	9,622	3,690	79,910
Other (Note 1)	17,174	0	0	0	7,100
TOTAL DEMAND	74,424	9,348	9,622	3,690	87,010

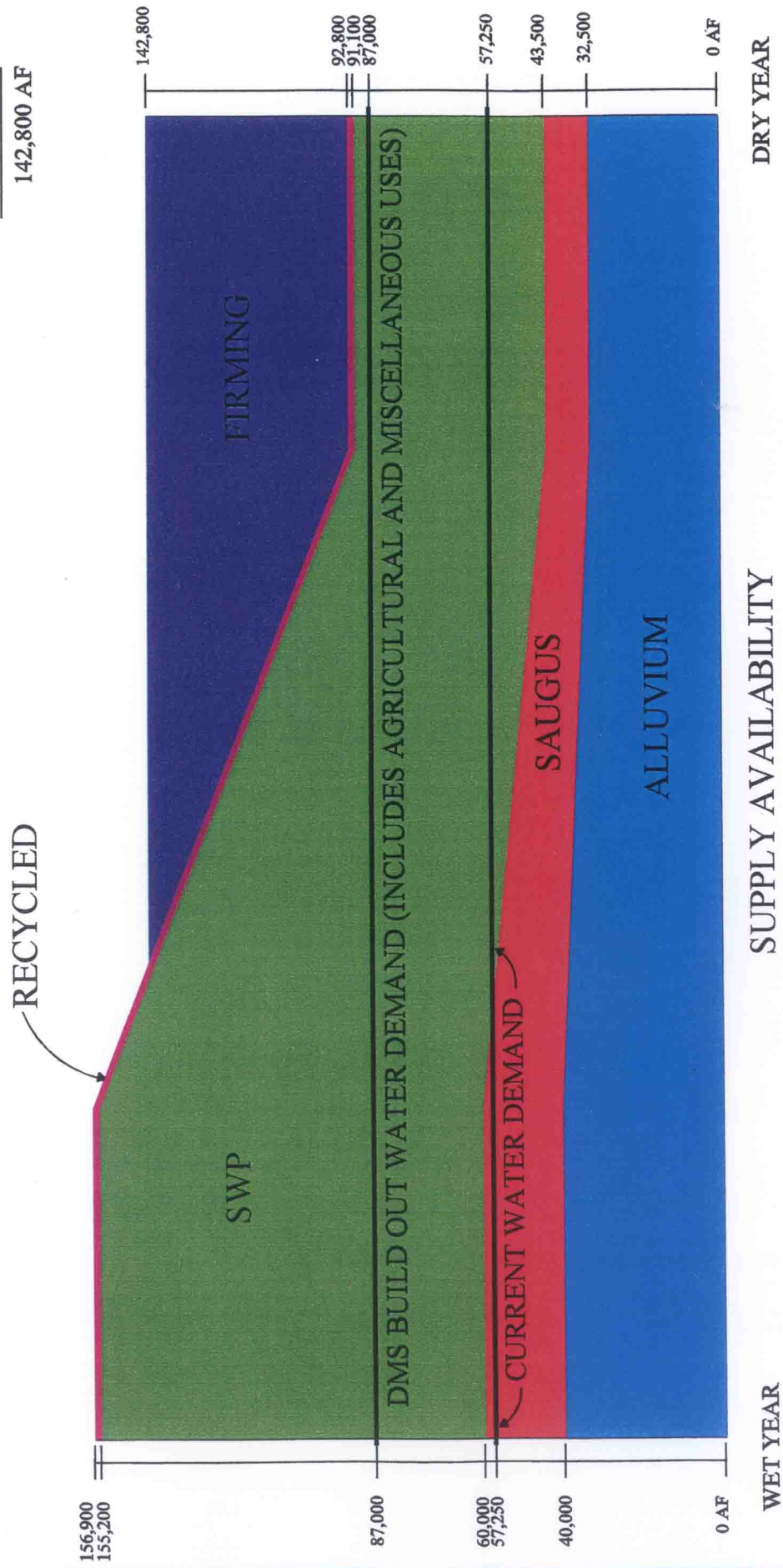
Note 1: Long term agricultural demand and other miscellaneous uses are estimated to decrease from 17,174 acre-feet per year to 7,100 acre-feet per year over time.

SANTA CLARITA VALLEY WATER SUPPLIES

FIGURE III-2 (REVISED)

WET YEAR	
ALLUVIUM	40,000
SAUGUS	20,000
SWP	95,200
RECYCLED	1,700
156,900 AF	

DRY YEAR	
ALLUVIUM	32,500
SAUGUS	11,000
SWP	47,600
RECYCLED	1,700
92,800 AF	
FIRMING SUPPLIES	
	50,000
142,800 AF	



*Current water demand of 57,250 acre-feet as reported in Table IV-1 of the 1999 Water Report.

SANTA CLARITA VALLEY WATER SUPPLIES

FIGURE III-2

(REVISED - TO SHOW DEMANDS FOR AL88 AND AL90)

WET YEAR	
ALLUVIUM	40,000
SAUGUS	20,000
SWP	95,200
RECYCLED	1,700

156,900 AF

DRY YEAR	
ALLUVIUM	32,500
SAUGUS	11,000
SWP	47,600
RECYCLED	1,700

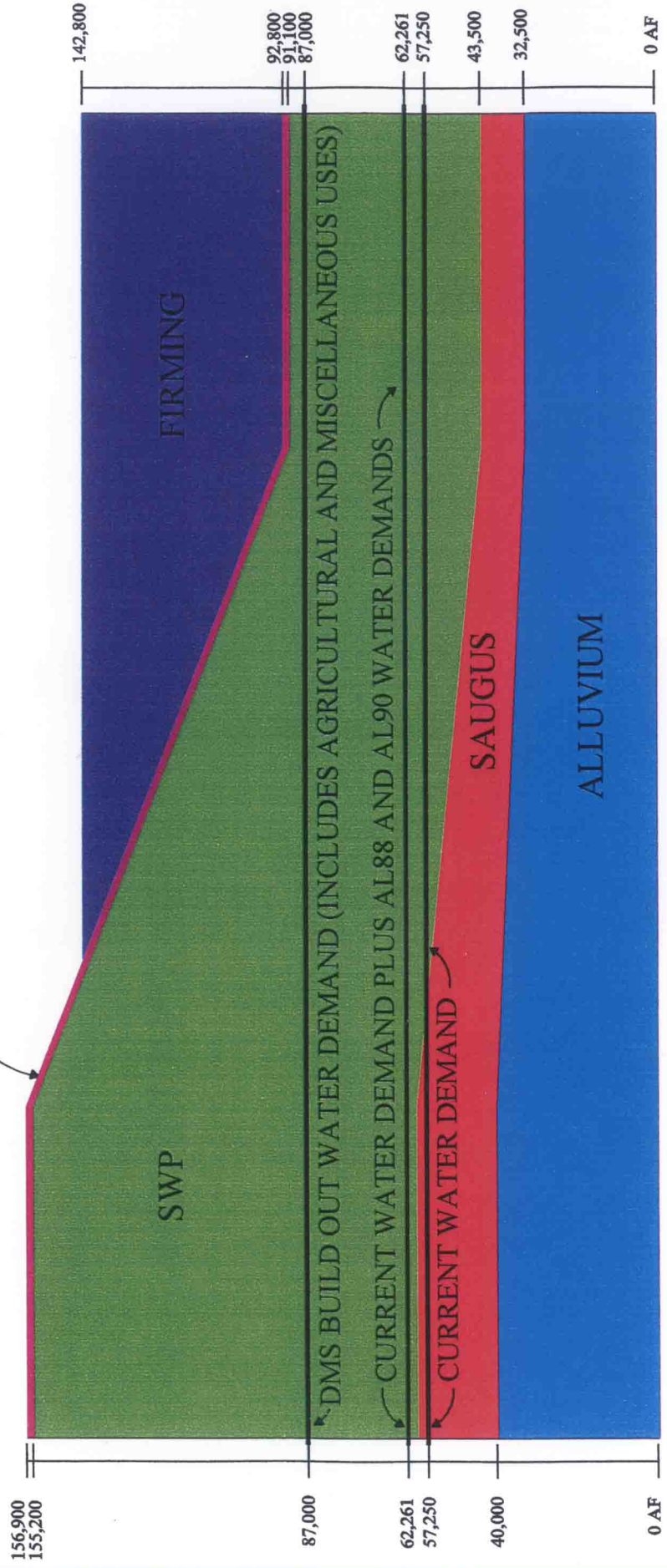
92,800 AF

FIRMING SUPPLIES

50,000

142,800 AF

RECYCLED



WET YEAR

SUPPLY AVAILABILITY

DRY YEAR

*Current water demand of 57,250 acre-feet as reported in Table IV-1 of the 1999 Water Report.

**Water demands for AL88 and AL90 are included in DMS build out water demand.

