IV. Historical and Projected Water Requirements and Supplies

Historical Water Requirements

The initial development of water supplies in the Santa Clarita area began in the 1800's for irrigation on the San Francisquito Ranch after its purchase by Henry Mayo Newhall. While there are some records in the form of waterworks drawings that show early diversion and distribution facilities on the ranch in 1911 and some mapping of well locations in the 1930's, the earliest complete records of water use date from shortly after the end of World War II. From 1947 through the mid 1960's, groundwater pumping for agriculture ranged from about 27,000 to about 42,000 acre-feet per year (afy). For most of the same period, until 1960, there are no detailed records of water use for municipal supply. The first records of municipal water use begin in 1960, when municipal water requirements were about 5,000 afy; by the mid-1960's, municipal water requirements had increased to about 10,000 afy. Throughout that time, all municipal water supply was from local groundwater.

From the mid-1960's through about 1980, groundwater pumping for agricultural water supply declined into the range of about 10,000 to 15,000 afy. In the late 1980's through the early 1990's, agricultural groundwater pumping further declined into the range of about 8,000 to 10,000 afy; over about the last ten years, agricultural water requirements, which continue to be fully met by local groundwater pumping, have been in the range of about 12,000 to 15,000 afy. The history and trends of agricultural water use in the basin are illustrated in Figure 4-1.

Detailed records of municipal water use are not available from the mid-1960's through 1980, when imported surface water was first used in the basin for municipal water supply. However, the available municipal water use data at the beginning and at the end of that period, combined with estimated declining agricultural water use for the same period, suggest there was a generally steady increase in municipal water use from about 11,000 af in 1966 to about 22,000 af in 1980. Since then, municipal water use has increased to about 68,000 afy. With the addition of imported surface water from the State Water Project beginning in 1980, however, groundwater pumping for municipal supply declined in the early 1980's. Throughout the 1990's, municipal

pumping fluctuated between about 27,000 and 32,000 afy. The history and trend of municipal groundwater use in the basin are illustrated in Figure 4-1.

As noted above, until 1980, all water supply in the basin was from local groundwater. Imported surface water was first available from the State Water Project (SWP) in 1980, when a total of 1,125 af were imported into the basin. Since then, importations of SWP water have increased in two separate steady trends, interrupted by a notable decrease at the end of, and following, the 1987-1992 drought period: a steady increase beginning in 1980, to about 21,600 afy in each of 1989 and 1990, followed by a substantial decrease, to less than 8,000 af in 1991, and then a steady increase back to about 21,000 afy in 1997 and 1998, followed by further increases to nearly 42,000 af in 2002. The history and trends in importation of SWP water to the basin are illustrated in Figure 4-2, which also illustrates the historical trends in groundwater pumping and total water use in the basin since the importation of SWP water.

In the context of this groundwater management plan, the historical utilization of imported SWP water to augment local groundwater represents the initiation of conjunctive use of surface water and groundwater supplies, a groundwater management principle which is intended to be continued via adoption of Primary Element 5 of this plan.

Projected Water Requirements

Detailed projections of municipal water requirements were most recently completed as part of the Urban Water Management Plan prepared by CLWA and the municipal water purveyors (Newhall County Water District, Santa Clarita Water Company, and Valencia Water Company) in 2000. Those projections, which are forecast for a 20-year period, also recognize an ongoing but decreasing agricultural water demand over the same period, from about 15,000 afy in 2005 to about 7,000 afy by 2020. The municipal water demand projections in the Urban Water Management Plan are derived from utilization and interpretation of multiple projection methods, including per-capita water-use applied to population projections; extrapolation of number of service connections (using two different projection techniques, an average rate and an accelerated rate projection) applied to the rate of service connection additions since 1990; and land use projections combined with unit water use factors on multiple land use categories (urban, including residential, commercial, industrial and recreational; irrigated agricultural; and vacant and open space). The water demand projections in the Urban Water Management Plan also consider weather effects (variations due to hot-dry years vs. cool-wet years) and conservation

Historical Groundwater Production
Upper Santa Clara Valley Groundwater Basin
East Subbasin

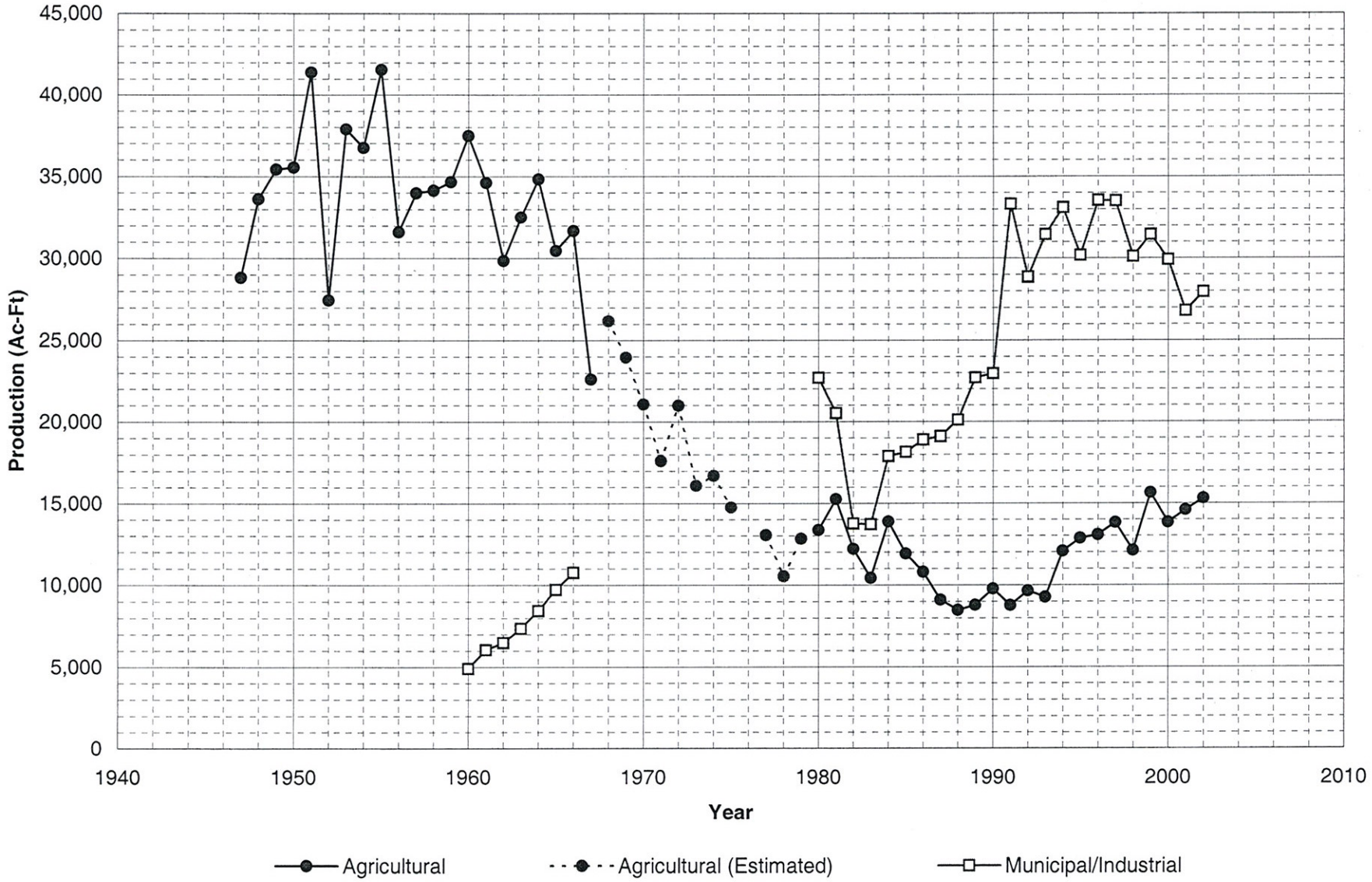

Figure 4-1

effects on water usage.

The net result of application and interpretation of the various water demand projection methods in the 2000 Urban Water Management Plan is summarized in Figure 4-2, which reflects projected urban and agricultural water demand through 2020, absent potential increased conservation savings, which are estimated to be ten percent of urban water demand. Numerically, urban water use without increased conservation savings is projected to increase to nearly 67,000 afy by 2005, and then continue to increase to 106,000 afy by 2020. As noted above, agricultural water use over the same period is projected to decrease to 15,000 afy by 2005, followed by an ongoing decrease to 7,100 afy by 2020. In addition to the graphical presentation of projected water demands in the basin through 2020 in Figure 4-2, projected water demands are tabulated, both with and without potential increased conservation savings, in Table 4-1.

Table 4-1
Projected Normal/Average Year Water Demands
(acre-feet per year)

	2005	**2010**	**2015**	**2020**
Urban	66,600	77,700	90,900	106,000
Agriculture	15,100	12,400	9,800	7,100
Total Projected Demand	**81,700**	**90,100**	**100,700**	**113,100**
Increased Conservation Savings	6,600	7,700	9,100	10,600
Total Projected Demand *(with increased conservation)*	**75,100**	**82,400**	**91,600**	**102,500**

Existing and Projected Water Supplies

As noted above, existing water supplies to meet current water demands are comprised of local groundwater and imported SWP surface water. In 2001, for example, to meet a total water demand of nearly 76,800 af, local groundwater pumping amounted to 41,400 af, (about 54% of total demand) and imported SWP water amounted to 35,400 af (about 46% of total demand).

Water supplies to meet projected water demands are expected to continue to be primarily a combination of local groundwater and imported SWP surface water, augmented by local recycled

Historical and Projected Water Use
Upper Santa Clara Valley Groundwater Basin
East Subbasin

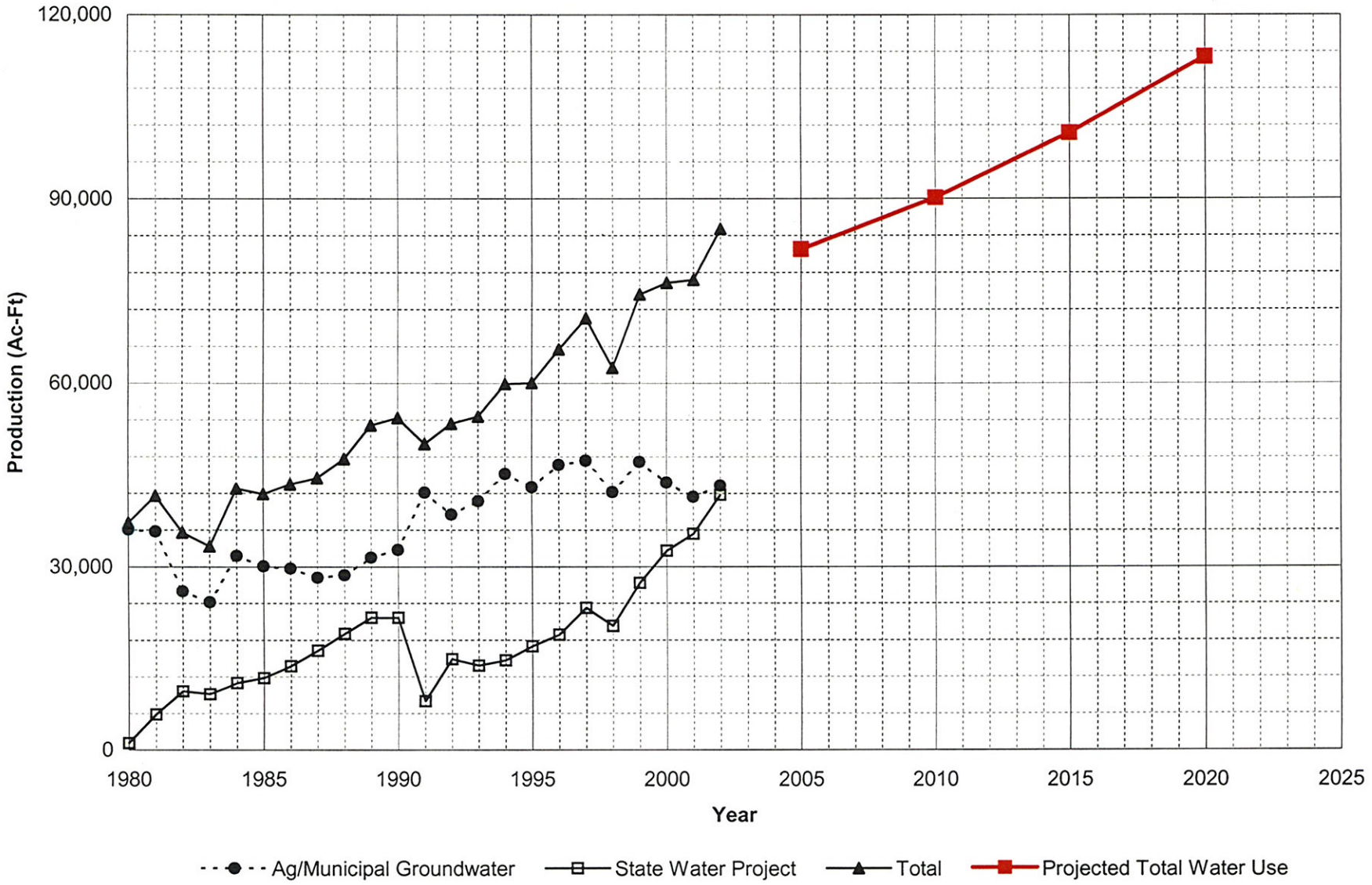

Figure 4-2

water and possibly some water supply derived from water transfers and desalination outside the basin.

Local Groundwater - Local groundwater has historically been developed from the two aquifers that comprise the groundwater basin, the Alluvium that underlies the Santa Clara River and its tributaries, and the Saugus Formation that underlies much of the CLWA service area. Those two aquifers, and the groundwater basin they comprise, are the focus of this groundwater management plan. Based on historical experience and observation of groundwater conditions, it is currently expected that ongoing utilization of local groundwater will continue to be in amounts that are generally comparable to what has historically been pumped, 30,000 to 40,000 afy from the Alluvium and 7,500 to 15,000 afy from the Saugus Formation. It is also expected that there is some additional development potential in the Saugus Formation, in the range of 10,000 to 20,000 af which might be intermittently extracted during one or more dry years when supplemental imported water supplies might be reduced. Ultimately, it is expected that local groundwater will continue to be a component of water supply in the basin at appropriate production levels from both aquifers. The intent of this groundwater management plan is to ensure that ongoing utilization of local groundwater continues to result in acceptable aquifer conditions, i.e. avoidance of overdraft (Primary Plan Element 3), no degradation of quality (Primary Plan Element 6), no adverse impacts to surface waters (Primary Plan Element 2), all via continuation of conjunctive use operations that have been ongoing since the initial importation of supplemental surface water in 1980 (Primary Plan Element 5) and via monitoring and interpretation of surface water and groundwater conditions on an ongoing basis (Primary Plan Elements 1 and 2).

Supplemental (SWP) Surface Water - CLWA has a Table A contract amount of 95,200 af of water from the SWP. CLWA's original contract, signed in 1963, was for 23,000 af; that Table A amount was later increased to 41,500 af. In 1988, CLWA purchased a Table A amount of 12,700 af from Devil's Den Water District, and it acquired another 41,000 af of Table A amount in 1999 from Kern County Water Agency and its member district, the Wheeler Ridge-Maricopa Water Storage District. There is ongoing CEQA-related litigation over the most recent acquisition of the 41,000 af Table A amount. However, there has been no invalidation of the completed agreement to transfer the 41,000 af Table A amount to CLWA and current water supply planning includes that Table A amount as CLWA corrects the CEQA technicality by preparing a new EIR to address the environmental consequences of the transfer.

Recycled Water - In 1993, CLWA prepared a draft Recycled Water System Master Plan that outlined a multi-phase program to integrate recycled water into the overall water supply system in the basin. Phase I of that project, which will deliver approximately 1,700 afy, began deliveries of recycled water for golf course irrigation in mid-2003. Overall, by 2020, recycled water is expected to ultimately reclaim up to 17,000 afy of treated waste water suitable for irrigation of golf courses, landscaping, and other non-potable uses.