

Appendix G Water Supply Assessment

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ENGINEERING

Water Supply Assessment
(Senate Bill 610)

CITY OF SIMI VALLEY - GENERAL PLAN 2030

Prepared For:

City of Simi Valley
(Ventura County Waterworks District No. 8)



CITY OF SIMI VALLEY

Prepared By:



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August 2010
Revised January 2011

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Executive Summary

Introduction

The “study area” for this Water Supply Assessment (WSA) report is defined as that portion of Ventura County Waterworks District No. 8 service boundary within City limits; therefore, excludes those areas served by GSWC and areas outside of the City limits. This report has been prepared to evaluate the adequacy of District water supplies to serve increased water demands within its service area and the City upon buildout of the City’s General Plan land uses. The primary source document used for the WSA is the District’s 2005 Urban Water Management Plan. The 2010 update is scheduled for completion in June 2011.

Purpose of Report

In accordance with Water Code 10910 and the California Environmental Quality Act (CEQA), this report is prepared as a technical study in support of CEQA documentation for future development under the City of Simi Valley 2030 General Plan.

Project Description

The Project is defined as the City of Simi Valley 2030 General Plan land uses within current City limits. The study area for the WSA consists of the service area of the VCWWD No. 8 within the City, which comprises approximately 21,324 acres.

Identification of Public Water System

Ventura County Waterworks District No. 8 is the water purveyor of the study area. The VCWWD No. 8 water distribution system includes 39 water storage facilities with approximately 55.2 million gallons (MG) of total storage (51.1 MG of operational storage), 22 pump stations, multiple pressure reducing facilities, and over 300 miles of pipelines.¹ The main source of water for VCWWD No. 8 is imported water supplied by the Metropolitan Water District of Southern California (MWDSC) via Calleguas Municipal Water District (CMWD).

Project Applicability

The City of Simi Valley, in conjunction with the Ventura County Waterworks District No. 8, has elected to prepare this Water Supply Assessment report for those future development and redevelopment areas within City limits, and served by VCWWD No. 8, as defined in the City of Simi Valley 2030 General Plan Update.

Estimated Project Water Demand

The estimated net water demand is the difference in demand between existing conditions and the build-out conditions of the WSA study area. The increased water demands for the study area upon buildout of the Project is estimated to be 5,666 acre-feet per year.

Urban Water Management Plan Review

VCWWD No. 8 prepared a 2005 UWMP in accordance with the UWMP Act. VCWWD No. 8 currently receives their water supply from two principal sources: imported water from the State Water Project (the California Aqueduct) supplied to VCWWD No. 8 by the Metropolitan Water District of Southern California (MWDSC) via Calleguas Municipal Water District (CMWD), and local groundwater from the Tapo/Gillibrand Groundwater Basin. According to recent production data provided by VCWWD No. 8 for years 2006 to 2009, approximately 96 percent of water consumed in the VCWWD No. 8 service area is imported water. VCWWD No. 8 receives water from CMWD through 12 turnout locations. Groundwater production and treatment at the Tapo Canyon Water Filtration Plant has the capacity to produce up to one

¹ VCWWD No. 8 2010 Domestic Water Master Plan

million gallons per day. In addition, VCWWD No. 8 has plans to expand its recycled water supply to candidate City users.

The water usage for VCWWD No. 8 was estimated to increase from 23,924 acre-feet to 31,848 acre-feet in 2030. This equates to a total increase of 7,924 acre-feet per year. The estimated total annual demands for the WSA study area is 28,164 acre-feet, which would allow for 3,684 acre-feet for buildout of remaining county areas within the District.

The capacities of District water supply sources were projected to increase from 24,856 acre-feet in the year 2005 to 40,545 acre-feet in 2030. It is anticipated that the majority of water demands for future developments will be met with increases in imported water.

Regional projects are underway, or complete, that can provide water supplies for CMWD member agencies during extended outages of imported supplies. The Bard Water Treatment Plant (WTP) is used to supplement imported MWD supplies during summer months. As demands increase until year 2030, studies on the local groundwater basin's capacity and water quality will be performed to determine the expandability of groundwater production and the Tapo Canyon Treatment Plant. In addition, CMWD and MWDSC are developing the Las Posas Basin Aquifer Storage and Recovery Project (ASR). It includes dual-purpose extraction and injection wells in three well fields in the Las Posas groundwater basin. This project, when complete, will allow for the storage of an additional 300,000 acre-feet (97,755 million gallons) of water for regional benefit.

The 2005 Urban Water Management Plan analyzes how VCWWD No. 8 would meet water demands during single and multiple dry year periods up to year 2025. This shows that under multiple dry year scenarios, the VCWWD No. 8 supply capacities are sufficient to serve the anticipated demands.

Since VCWWD No. 8 relies greatly on imported water from CMWD, all water shortage contingencies are coordinated and based upon CMWD's plan. CMWD adopted the provisions of MWDSC's Incremental Interruptible Conservation Plan (IICP), which was subsequently adopted by VCWWD No. 8. Worst case estimates were based on the assumption that there would be a 50 percent reduction in CMWD sources. Depending on the reduction goal, VCWWD No. 8 modifies its water rates, according to CMWD rate modifications, to initiate a reduction in water consumption. This plan has proven to be highly successful in achieving its conservation goals.

In a 1992 study, the City of Simi Valley identified a recycled water distribution system and 81 potential users of recycled water. The proposed system would ultimately replace approximately 4,700 acre-feet of imported potable water with recycled water annually. VCWWD No. 8 has since completed master planning studies and a document addressing the design and construction standards, rules, and regulations for recycled water use. Most recently, the 2002 North Lake Feasibility Study recommends the supply of recycled water from VCWWD No. 8 to serve the North Park Nature Preserve and Village development project.

State Water Project Water Supply Reliability

The California Legislature recently passed the Comprehensive Water Package in November 2009, which is a far-reaching legislative package that is aimed at improving the state's water supply reliability and restoring the Sacramento-San Joaquin River Delta ecosystem. As part of the Comprehensive Water Plan, Senate Bill 7 (SBX7-7) was signed into law. With the enactment of SBX7-7, the 20x2020 Water Conservation Plan was placed into statute, which includes a range of activities aimed at achieving a statewide 20 percent reduction in per capita urban water demand.

MWDSC Water Supply Reliability

MWDSC has recently released a draft 2010 Integrated Water Resources Plan (IRP) Update, which addresses the more recent water supply issues of the region including climate change, potential prolonged droughts, and unanticipated environmental constraints. MWDSC's diverse supply portfolio along with conservation strategies and storage development has allowed them to continue to provide the region with reliable water supply despite significantly reduced supplies from the Colorado River and State Water Project. MWDSC's actions resulted in the implementation of a 10 percent cutback in 2009 and 2010 instead of a 25 percent cutback that would have been imposed two years earlier. MWDSC expects conservation efforts throughout Southern California to save the annual equivalent of 1.2 million acre-feet by 2015 and 1.7 million acre-feet by 2035. In the draft 2010 IRP, MWDSC restates the 1996 assertion that "full-service demands at the retail level would be satisfied for all foreseeable hydrologic conditions."

CMWD Water Supply Reliability

CMWD has focused its planning efforts on more efficient use of existing supplies and maximizing use of local resources. As indicated in the CMWD 2005 UWMP, CMWD is in the midst of implementing a capital improvement program aimed at reducing the region's demand for imported water. The focus of their capital improvement program is to expand on recycled water system and conjunctive-use facilities.

Water Supply Entitlements

Groundwater sources for the VCWWD No. 8 are from overlying rights to the amount currently pumped from the Tapo/Gillibrand Groundwater Basin. The District's imported water rights are in the form of a 10-year long-term purchase order contract between VCWWD No. 8 and CMWD, which became effective January 1, 2003. The contract, calls for the delivery of 100 percent of the water requested by VCWWD No. 8 "based upon availability". The purchase order includes an "initial base demand" of 22,089.3 acre-feet, "initial Tier 1 annual maximum" of 19,880.4 acre-feet, and "purchase order commitment" of 132,535.8 acre-feet. CMWD also has a long-term purchase order contract with MWDSC, effective January 1, 2003, with a term of 10 years.

Conclusion

- (1) The Ventura County Waterworks District No. 8 is the public water supplier for the Study Area.
- (2) An increase in water demand for the VCWWD No. 8 served area of the City of Simi Valley was anticipated in the VCWWD No. 8 2005 Urban Water Management Plan.
- (3) The total estimated water required for the WSA study area is 22,498 acre-feet per year (total water production). Future demands within the study area are estimated to be 28,164 acre-feet per year.
- (4) The estimated water demand at build-out will result in a total net increase of 5,666 acre-feet per year for the WSA study area, which corresponds to a net annual increase of 283 acre-feet per year over a 20-year period.
- (5) The VCWWD No. 8 2005 Urban Water Management Plan projected a total water usage of 31,848 acre-feet in year 2030. The total existing water requirement was estimated in the 2005 UWMP at 23,924 acre-feet per year. The net increase in water required for the study area represents 72 percent of the estimated increase District-wide. If development within the additional areas served by the District (The Knolls, Box Canyon, and Tapo Canyon) are not projected to demand more than the difference ($31,848 - 28,164 = 3,684$ AF/Yr), then the projected ultimate water requirement is sufficient. In addition, the 2005 UWMP projected a future water production capacity of 40,545 acre-feet per year by year 2030.

- (6) Increased water demands as a result of projects from the 2030 General Plan are planned to be met primarily with imported water, although VCWWD No. 8 will continue to expand local sources investigate opportunities to increase use of recycled water.
- (7) In the MWDSC draft 2010 Integrated Resources Plan Update, MWDSC restates the 1996 assertion that "full-service demands at the retail level would be satisfied for all foreseeable hydrologic conditions."
- (8) VCWWD No. 8 recently updated their Domestic Water Master Plan and maintains a 5-year Capital Improvement Program (CIP) that outlines planned projects and associated costs for the construction of new VCWWD No. 8 facilities or the upgrade of existing VCWWD No. 8 facilities. VCWWD No. 8 is also implementing 12 of the 14 Best Management Practices (BMP) as signatories to the California Urban Water Conservation Council MOU, which includes multiple water conservation measures.

Therefore, the City of Simi Valley concludes that sufficient water supply exists to meet the future water demand resulting from development within the City's General Plan 2030 and current City boundaries.

I. Introduction

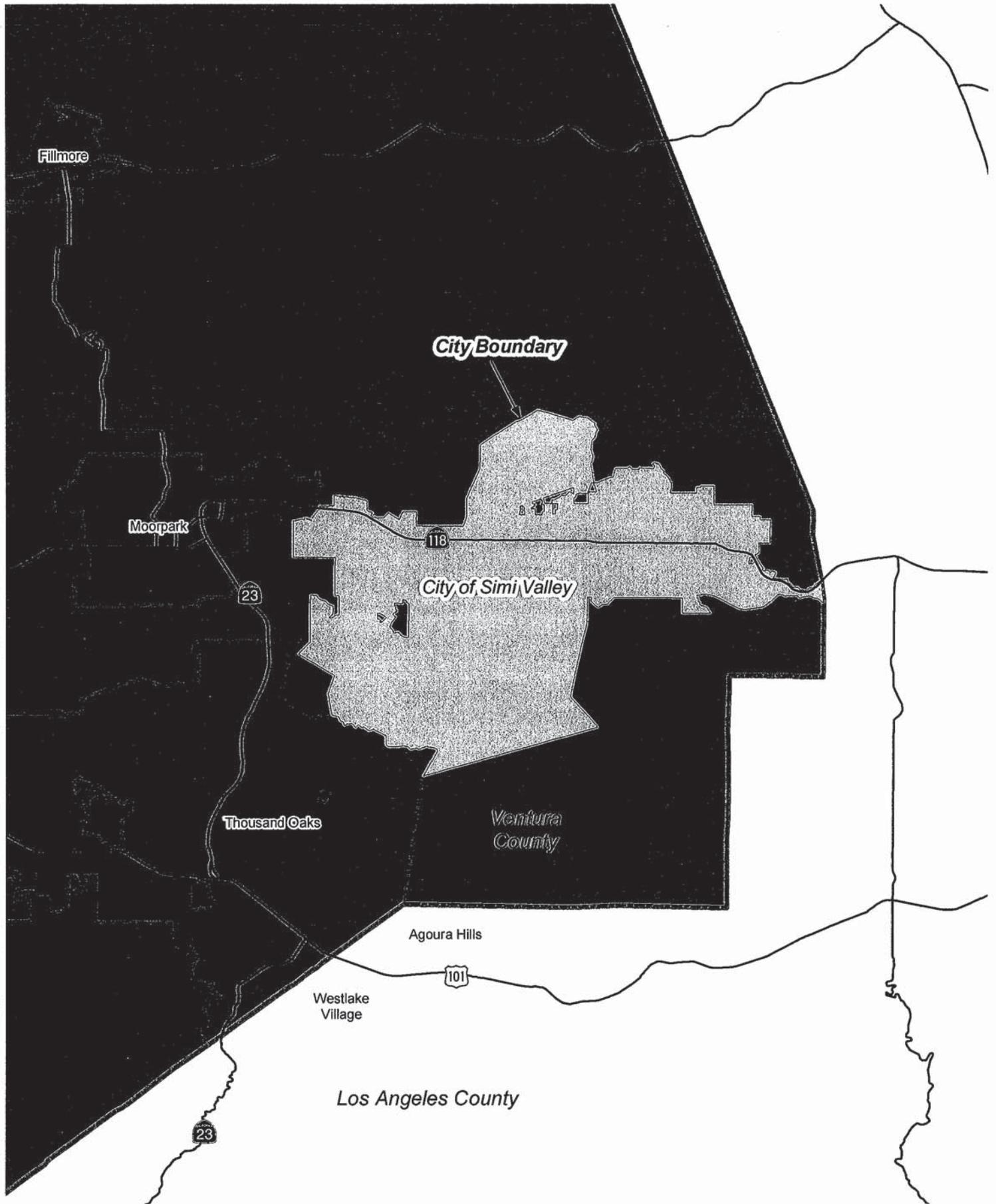
The City of Simi Valley (hereinafter referred to as “City” or “Simi Valley”) prepared a draft 2030 General Plan Update, which addresses proposed development and redevelopment within the current City limits to the year 2030. The 2030 General Plan (General Plan or GP) outlines opportunities for future development and redevelopment within the City. The development described in the General Plan is anticipated to occur over a twenty-year period. The City of Simi Valley is located in the County of Ventura, northeast of the City of Thousand Oaks, east of the City of Moorpark, and west of the Chatsworth area of the City of Los Angeles. **Exhibit 1** illustrates the regional vicinity of the City of Simi Valley.

Two separate water purveyors provide service in the City of Simi Valley: Ventura County Waterworks District No. 8 (VCWWD No. 8) and Golden State Water Company (GSWC), formerly known as the Southern California Water Company. The VCWWD No. 8 service area encompasses approximately 26,000 acres² and primarily falls within the City of Simi Valley; however, portions of the service area are located outside of City limits within unincorporated Ventura County. VCWWD No. 8 serves approximately 66 percent of the City residents, with the remainder being served by GSWC.³ **Exhibit 2** shows the VCWWD No. 8 service area and City boundary.

The “study area” for this Water Supply Assessment (WSA) report is defined as that portion of VCWWD No. 8 service boundary within City limits; therefore, excludes those areas served by GSWC and areas outside of the City limits. This report has been prepared to evaluate the adequacy of District water supplies to serve increased water demands within its service area and the City upon buildout of the City’s General Plan land uses. The primary source document used for the WSA is the District’s 2005 Urban Water Management Plan, which is the current adopted water supply planning document. The 2010 update is scheduled for completion in June 2011.

² Source: VCWWD No. 8 2005 Urban Water Management Plan

³ Ibid.





WATER SUPPLY ASSESSMENT

Water Service Boundaries

Exhibit 2



0 0.5 1 2 Miles



City of Simi Valley

RBF GIS

BOUNDARY DATA PROVIDED BY THE CITY OF SIMI VALLEY. SOURCE: CITY OF SIMI VALLEY, ESRI/AERIAL

II. Purpose of Report

The purpose for this report is summarized in Water Code section 10910.

Law

Water Code section 10910 requires a city or county that determines a project is subject to the California Environmental Quality Act to identify any public water system that may supply water for the project and to request those public water systems to prepare a specified water supply assessment, except as otherwise specified. The bill requires the assessment to include, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts.

The bill prescribes a timeframe within which a public water system is required to submit the assessment to the city or county and authorizes the city or county to seek a writ of mandamus to compel the public water system to comply with requirements relating to the submission of the assessment.

The bill requires the public water system, or the city or county, as applicable, if that entity concludes that water supplies are, or will be, insufficient, to submit the plans for acquiring additional water supplies.

The bill requires the city or county to include the water supply assessment and certain other information in any environmental document prepared for the project pursuant to the act.

In accordance with Water Code 10910 and the California Environmental Quality Act (CEQA), this report is prepared as a technical study in support of CEQA documentation for future development under the City of Simi Valley 2030 General Plan. As a water purveyor to the City of Simi Valley, the Ventura County Waterworks District No. 8 has prepared this Senate Bill (SB) 610 ("Water Supply Assessment") report, to determine the impact to water demand upon buildout of the 2030 General Plan, and verify the adequacy of existing and future water supplies for VCWWD No. 8 to meet the ultimate demands.

III. Project Description

The Project is defined as the City of Simi Valley 2030 General Plan land uses within current City limits. The study area for the WSA consists of the service area of the VCWWD No. 8 within the City, which comprises approximately 21,324 acres, or 68 percent, of the total City/SOI area⁴. The existing land uses within the study area include agricultural, commercial, industrial, landscaping, residential, open space, institutional, transportation, and public uses. The existing land uses are illustrated in **Exhibit 3**. A summary of the existing land uses is shown in **Table 1**.

Table 1 – Existing Land Use within Study Area ^[1]

Land Use Type	Developed Acres
Agricultural	76
Commercial	655
Industrial	380
Landscaping	789
Multi-family Residential	238
Open Space	3,769
Schools/Institutions	524
Single-family Residential	5,103
Transportation	436
Utilities	204
Total	12,174

[1] Based on 2006 GIS land use data provided by the City of Simi Valley.

The future land use acreages were established using the City of Simi Valley 2030 General Plan for all areas within the City or its sphere and the Ventura County General Plan Land Use (April 6, 2010) map for areas outside the sphere. Although the WSA investigation excludes areas outside of City limits, it is helpful for the study to understand the impacts to water demand and production for the purveying agency’s service area (Ventura County Waterworks District No. 8). The Ventura County General Plan Land Use Map is included in **Appendix A**.

The study area includes approximately 91 percent of the VCWWD No. 8 service area. This WSA total study area is approximately 23,487 acres, which includes both developed and undeveloped land. The earliest construction under the General Plan area is anticipated to occur in 2010; for the purposes of the WSA, build-out would occur by 2030. The future land use acreages are listed in **Table 2**, and shown in **Exhibit 4**.

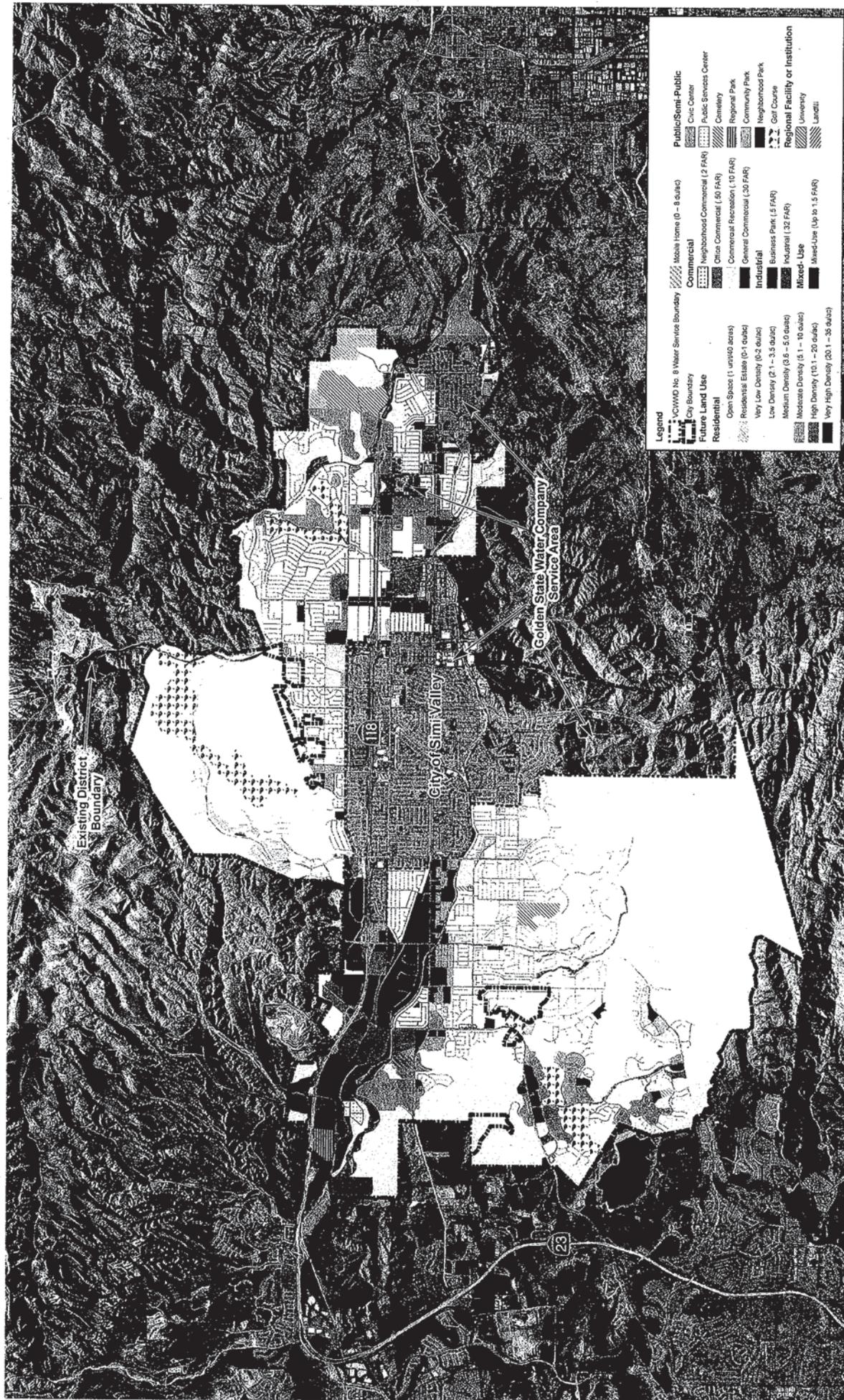
⁴ City of Simi Valley 2030 General Plan Update

Table 2 – Ultimate Land Uses within Study Area

Land Usage	Acres
Residential	
Open Space (1 unit/40 acres)	7,894.69
Residential Estate (0-1 du/ac)	335.45
Very Low Density (0-2 du/ac)	1,377.54
Low Density (2.1 - 3.5 du/ac)	981.71
Medium Density (3.6 - 5.0 du/ac)	3,169.24
Moderate Density (5.1 - 10 du/ac)	747.45
High Density (10-1 - 20 du/ac)	263.18
Very High Density (20.1 - 35 du/ac)	168.94
Mobile Home (0 - 8 du/ac)	17.72
Commercial	
Neighborhood Commercial (.2 FAR)	12.87
Office Commercial (.50 FAR)	69.56
Commercial Recreation (.10 FAR)	27.08
General Commercial (.30 FAR)	290.17
Industrial	
Business Park (.5 FAR)	419.43
Industrial (.32 FAR)	429.19
Mixed- Use	
Mixed- Use (Up to 1.5 FAR)	309.17
Public/Semi-Public	
Civic Center	42.58
Public Services Center	28.84
Cemetery	236.55
Hospital	
Regional Park	51.74
Community Park	803.16
Neighborhood Park	79.17
Golf Course	745.54
Other	
Landfill	0.67
Transportation	2,571.57
University	0.00
Water Body	318.70
Total WSA Study Area	21,392

[1] Source: City of Simi Valley 2030 General Plan Update (July 2010 draft), or current adopted land use plan where no land use designation is provided in the draft plan.

Note: DU = Dwelling Unit
 FAR = Floor Area Ratio



Legend

- CVWD No. 8 Water Service Boundary
- City Boundary
- Future Land Use
- Residential
 - Open Space (1 unit/10 acres)
 - Residential Estate (0-1 units)
 - Very Low Density (0-2 units)
 - Low Density (2.1 - 3.5 units)
 - Medium Density (3.6 - 5.0 units)
 - Moderate Density (5.1 - 10 units)
 - High Density (10.1 - 20 units)
 - Very High Density (20.1 - 35 units)
- Commercial
 - Mobile Home (0 - 8 units)
 - Neighborhood Commercial (2 FAR)
 - Office Commercial (3.0 FAR)
 - Commercial Recreation (1.0 FAR)
 - General Commercial (2.0 FAR)
 - Business Park (5 FAR)
 - Industrial (3.2 FAR)
 - Mixed-Use
- Public/Semi-Public
 - Civic Center
 - Public Services Center
 - Cemetery
 - Regional Park
 - Community Park
 - Neighborhood Park
 - Golf Course
 - Regional Facility or Institution
 - University
 - Landfill

IV. Identification of Public Water System

Law

10910. (b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

Ventura County Waterworks District No. 8 is the water purveyor of the study area. VCWWD No. 8 was formed in the 1960's to provide water to the City of Simi Valley. In 1977, the administering function of VCWWD No. 8 was transferred to the City of Simi Valley from the County of Ventura. VCWWD No. 8 currently delivers water to approximately 24,000 service connections within a service area that encompasses approximately 26,000 acres.⁵ The VCWWD No. 8 water distribution system includes 39 water storage facilities with approximately 55.2 million gallons (MG) of total storage (51.1 MG of operational storage), 22 pump stations, multiple pressure reducing facilities, and over 300 miles of pipelines.⁶ The main source of water for VCWWD No. 8 is imported water supplied by the Metropolitan Water District of Southern California (MWDSC) via Calleguas Municipal Water District (CMWD). VCWWD No. 8 also owns two groundwater wells in the Tapo Canyon area, which supply water to the Tapo Canyon Water Treatment Plant. VCWWD No. 8 serves approximately 68 percent of the City residents, with the remainder being served by GSWC.⁷

The City of Simi Valley experienced continued growth in the residential, commercial, and industrial sectors during the 2000s. The City's population has increased approximately 1.5 percent per year since 2000 to a current total of approximately 126,500.⁸ The Southern California Association of Governments (SCAG) projects the City's build-out population to reach 149,700.⁹ It is estimated that this growth will occur proportionately for the WSA study area.

VCWWD No. 8 recently updated their Domestic Water Master Plan and maintains a 5-year Capital Improvement Program (CIP) that outlines planned projects and associated costs for the construction of new VCWWD No. 8 facilities or the upgrade of existing VCWWD No. 8 facilities.

⁵ Source: VCWWD No. 8 2005 Urban Water Management Plan

⁶ VCWWD No. 8 2010 Domestic Water Master Plan

⁷ Source: VCWWD No. 8 2005 Urban Water Management Plan

⁸ VCWWD No. 8 2010 Domestic Water Master Plan

⁹ Ibid

V. Project Applicability

Law

10910. (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

10912. For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

- (1) A proposed residential development of more than 500 dwelling units.
- (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- (4) A proposed hotel or motel, or both, having more than 500 rooms.
- (5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- (6) A mixed-use project that includes one or more of the projects specified in this subdivision.
- (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The City of Simi Valley, in conjunction with the Ventura County Waterworks District No. 8, has elected to prepare this Water Supply Assessment report for those future development and redevelopment areas within City limits, and served by VCWWD No. 8, as defined in the City of Simi Valley 2030 General Plan Update. As long as future development project applications include land use plans within the types and densities outlined in the 2030 GP Update, this WSA will facilitate Senate Bill 610 compliance.

VI. Schedule

Law

10910. (g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

The Ventura County Waterworks District No. 8 is the proposed water purveyor to the study area. No formal request was presented to the District by the City. As lead agency for the 2030 General Plan, the City of Simi Valley initiated the preparation of this Water Supply Assessment, on behalf of the District, to expedite and facilitate California Environmental Quality Act (CEQA) review and approvals of future development and redevelopment projects that conform to the types and densities outlined in 2030 General Plan.

VII. Estimated Water Demand

This section documents the existing and ultimate water demand estimates for the VCWWD No. 8 service area under the 2030 General Plan.

Estimated Existing Water Demand

The estimated existing water demands in the VCWWD No. 8 service area were calculated by taking the average of four years of actual water production data provided by VCWWD No. 8 for the calendar years 2006 to 2009. Actual water billing data provided by VCWWD No. 8 for the same time period has also been included in this report for informational purposes only. Existing water billing data and existing water production data can be found in **Tables 3 and 4**, respectively.

Table 3 – Existing Water Billings ^[1]

Customer Type	2006		2007		2008		2009		Average	
	gpd	AF/yr								
Single-Family Residential	12,091,445	13,545	13,243,047	14,835	12,674,212	14,198	11,305,057	12,664	12,328,440	13,811
Commercial	1,202,114	1,347	1,252,898	1,404	1,192,738	1,336	1,101,359	1,234	1,187,277	1,330
Construction ^[2]	683,608	766	697,716	782	602,704	675	542,642	608	631,668	708
Pools/Clubhouse	66,043	74	67,480	76	66,836	75	59,197	66	64,889	73
Agricultural	207,575	233	220,773	247	206,337	231	178,305	200	203,247	228
Industrial	128,799	144	76,833	86	92,496	104	125,053	140	105,795	119
Schools	627,242	703	608,321	681	510,644	572	438,760	492	546,242	612
Landscape	4,311,714	4,830	4,955,805	5,552	4,435,704	4,969	3,994,607	4,475	4,424,457	4,956
Multi-Family Residential	1,006,169	1,127	1,073,042	1,202	1,090,389	1,221	1,011,589	1,133	1,045,297	1,171
TOTAL	20,325,000	22,768	22,196,000	24,864	20,872,000	23,381	18,757,000	21,011	20,537,000	23,006

[1] Based on water billing data provided by VCWWD No. 8; includes Tapo Canyon, Knolls and Box Canyon outside of study area.

[2] Includes "Frame Count" customer type.

The total average existing water billing for the District's service area is 20,537,000 gallons per day (gpd) or 23,006 acre-feet (AF) per year. It is emphasized that these values are included for informational purposes only.

Table 4 – Existing Water Production ^[1]

Item	2006		2007		2008		2009		Average	
	gpd	AF/yr	gpd	AF/yr	gpd	AF/yr	gpd	AF/yr	gpd	AF/yr
Calleguas Turn-Outs										
First Street	4,074,614	4,564	4,655,085	5,215	3,773,308	4,227	2,826,014	3,166	3,832,255	4,293
Easy Street	1,611,006	1,805	1,267,782	1,420	1,839,322	2,060	1,781,021	1,995	1,624,783	1,820
North Erringer	1,605,267	1,798	1,518,680	1,701	1,400,154	1,568	1,289,845	1,445	1,453,486	1,628
South Erringer	2,007,702	2,249	2,373,215	2,659	2,016,612	2,259	1,629,548	1,825	2,006,769	2,248
Sinaloa #1	0	0	0	0	0	0	0	0	0	0
Sinaloa #2	38,095	43	31,150	35	262,566	294	473,658	531	201,367	226
Smith Rd. Lg	<i>Serves Knolls and Box Canyon (outside Study Area)</i>									
Smith Rd. Sm	<i>Serves Knolls and Box Canyon (outside Study Area)</i>									
Stearns St.	3,400,549	3,809	2,990,164	3,350	3,623,712	4,059	3,396,580	3,805	3,352,751	3,756
Tapo Cyn	884,232	991	1,271,873	1,425	1,350,392	1,513	1,114,293	1,248	1,155,197	1,294
Winncastle	1,674,040	1,875	1,706,897	1,912	1,636,616	1,833	1,478,585	1,656	1,624,035	1,819
Wood Ranch	1,510,196	1,692	1,541,745	1,727	1,634,663	1,831	1,507,398	1,689	1,548,500	1,735
Yosemite	3,264,768	3,657	3,983,487	4,462	3,074,149	3,444	2,814,480	3,153	3,284,221	3,679
Subtotal	20,070,469	22,483	21,340,077	23,906	20,611,492	23,089	18,311,421	20,513	20,083,365	22,498
Wells										
Well #31	<i>Serves Tapo Canyon (outside Study Area)</i>									
Well #32	<i>Serves Tapo Canyon (outside Study Area)</i>									
Subtotal	-	-	-	-	-	-	-	-	-	-
Total	20,070,469	22,483	21,340,077	23,906	20,611,492	23,089	18,311,421	20,513	20,083,365	22,498

[1] Based on water production data provided by VCWWD No. 8

The total average existing water production for the study area is 20,083,365 gallons per day (gpd) or 22,498 acre-feet (AF) per year. This value has been taken as the existing water demand for the study area.

Estimated Ultimate Water Demand

The ultimate water demand was calculated by applying water duty factors from VCWWD No. 8 design criteria to future land use data from the 2030 General Plan. Since the future land use categories did not directly correspond with the land uses associated with the water duty factors from the VCWWD No. 8 design criteria, future land uses were assigned water duty factors for land uses of a similar type for the purpose of estimating the ultimate water demands. The assigned water duty factors and estimated ultimate demands are summarized in Table 5.

Table 5 – Estimated Ultimate Water Requirements for the Study Area

Land Usage	Assigned Water Duty Land Use [1]	Assigned Water Duty Factor [1]	Acres [2]	Water Demand	
				gpd	AF/yr
Residential					
Open Space (1 unit/40 acres)	[3]	40 gpd/Ac	7,894.69	315,788	354
Residential Estate (0-1 du/ac)	Low Density Res (0-3 Units per Acre)	1,584 gpd/Ac	335.45	531,360	595
Very Low Density (0-2 du/ac)	Low Density Res (0-3 Units per Acre)	1,584 gpd/Ac	1,377.54	2,182,030	2,444
Low Density (2.1 - 3.5 du/ac)	Low Density Res (0-3 Units per Acre)	1,584 gpd/Ac	981.71	1,555,032	1,742
Medium Density (3.6 - 5.0 du/ac)	Medium Density Res (3.1-10 D.U./Acre)	2,016 gpd/Ac	3,169.24	6,389,195	7,157
Moderate Density (5.1 - 10 du/ac)	Medium Density Res (3.1-10 D.U./Acre)	2,016 gpd/Ac	747.45	1,506,861	1,688
High Density (10-1 - 20 du/ac)	High Density Res (10.1-18.1 + D.U./Acre)	8,208 gpd/Ac	263.18	2,160,144	2,420
Very High Density (20.1 - 35 du/ac)	High Density Res (10.1-18.1 + D.U./Acre)	8,208 gpd/Ac	168.94	1,386,637	1,553
Mobile Home (0 - 8 du/ac)	Medium Density Res (3.1-10 D.U./Acre)	2,016 gpd/Ac	17.72	35,714	40
Commercial					
Neighborhood Commercial (.2 FAR)	Commercial, Light	2,520 gpd/Ac	12.87	32,434	36
Office Commercial (.50 FAR)	Commercial, Office	2,880 gpd/Ac	69.56	200,330	224
Commercial Recreation (.10 FAR)	Commercial, Light	2,520 gpd/Ac	27.08	68,232	76
General Commercial (.30 FAR)	Commercial, Light	2,520 gpd/Ac	290.17	731,232	819
Industrial					
Business Park (.5 FAR)	Industrial, Business Park	2,880 gpd/Ac	419.43	1,207,971	1,353
Industrial (.32 FAR)	Industrial, Light	2,808 gpd/Ac	429.19	1,205,170	1,350
Mixed-Use					
Mixed- Use (Up to 1.5 FAR)	High Density Res (10.1-18.1 + D.U./Acre)	8,208 gpd/Ac	309.17	2,537,668	2,843
Public/Semi-Public					
Civic Center	Community Services	1,944 gpd/Ac	42.58	82,779	93
Public Services Center	Community Services	1,944 gpd/Ac	28.84	56,059	63
Cemetery	Parks	1,584 gpd/Ac	236.55	374,689	420
Regional Park	[4]	63 gpd/Ac	51.74	3,259	4
Community Park	Parks	1,584 gpd/Ac	803.16	1,272,212	1,425
Neighborhood Park	Parks	1,584 gpd/Ac	79.17	125,413	140
Golf Course	Parks	1,584 gpd/Ac	745.54	1,180,942	1,323
Other					
Landfill	[5]		0.67	-	-
Transportation	[5]		2,571.57	-	-
University	Community Services	1,944 gpd/Ac	0.00	2	0
Water Body	[5]		318.70	-	-
TOTAL			21,392	25,141,155	28,164

[1] Based on Section 2.0 of the VCWWD No. 8 2010 Design Criteria, April 29, 2003.

[2] Based on geographic information system (GIS) shapefile provided by the City of Simi Valley.

[3] Demand factor based on 1 residence per 40 acres.

[4] Based on 25-percent of the demand for a community park, to exclusively account for non-irrigation demands associated with regional parks.

[5] Assumed not to have any domestic water demands associated with the land use.

Estimated Net Demand

The estimated net water demand is the difference in demand between existing conditions and the build-out conditions of the WSA study area. The change in water demand is the critical value in determining the impacts of build-out of the 2030 General Plan. Comparing current water production for the service area with the estimated ultimate water requirements (Table 5) represents the additional water requirements for ultimate water service, as shown in Table 6.

Table 6 – Estimated Net Change in Water Demand of the Study Area

Current Average Water Production [1]		Ultimate Water Demand [2]		Net Change in Water Demand [3]	
gpd	AF/yr	gpd	AF/yr	gpd	AF/yr
20,083,365	22,498	25,141,155	28,164	5,057,790	5,666

[1] Based on data provided by VCWWD No. 8 for calendar years 2006 to 2009

[2] See Table 5 for water demand calculations

[3] Net change = (Ultimate Demand) - (Average Water Production)

Based on the average VCWWD No. 8 water production from year 2006 to 2009 and the ultimate water demand estimation in Table 6, build out of the study area pursuant to the 2030 General Plan is estimated to increase water demands by 5,057,790 gallons per day, or 5,666 acre-feet per year. This increase in demand is expected to occur over a 20-year period from year 2010 to 2030, which corresponds to an annual increase of 283 acre-feet per year.

Future demands will be impacted by the VCWWD No. 8 obligations as signatory to the California Urban Water Conservation Council MOU, which includes multiple water conservation measures. VCWWD No. 8 is implementing 12 of the 14 Best Management Practices (BMP) as outlined in the MOU.

VIII. Urban Water Management Plan (UWMP) Review

Law

10910. (c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

VCWWD No. 8 prepared a 2005 Urban Water Management Plan (UWMP) in accordance with the Urban Water Management Planning Act (Act). The Act is based on Water Code Sections 10610 through 10656, which were added by statute in 1983, Chapter 1009, and became effective on January 1, 1984, as amended by Assembly Bill (AB) 2661, Senate Bill (SB) 553 and other amendments. The Act was also known as AB 797. The 2005 UWMP was prepared in accordance with the Urban Water Management Planning Act and January 2002 legislation associated with SB 610 and SB 221, and is an update to the 2000 UWMP.¹⁰ As VCWWD No. 8 has not yet prepared their 2010 UWMP, this report has been prepared to combine the most recent information including data from both the 2005 UWMP and 2010 VCWWD No. 8 Domestic Water Master Plan.

Water Sources

VCWWD No. 8 currently receives their water supply from two principal sources: imported water from the State Water Project (the California Aqueduct) that is supplied to VCWWD No. 8 by the Metropolitan Water District of Southern California (MWDSC) via Calleguas Municipal Water District (CMWD), and local groundwater from the Tapo/Gillibrand Groundwater Basin. According to recent production data provided

¹⁰ Source: VCWWD No. 8 2005 Urban Water Management Plan

by VCWWD No. 8 for years 2006 to 2009, more than 96 percent of water consumed in the VCWWD No. 8 service area is imported water.

Imported Water¹¹

The Metropolitan Water District of Southern California (MWDSC) provides wholesale imported water to the majority of the urban coastal plain of Southern California. Metropolitan member agencies, including the Calleguas Municipal Water District (CMWD), purchase water from Metropolitan on behalf of themselves or their member agencies. MWDSC treats water from the State Water Project (SWP) at the Jensen Water Treatment Plant in San Fernando Valley prior to delivering it to CMWD. Once CMWD has obtained water from MWDSC, it is then conveyed via two large diameter pipelines to each of the City’s service connections. The two conveyance systems are a 51-inch diameter pipeline aligned adjacent to the City’s southern boundary, and a 78-inch within, or adjacent to, Cochran Street.

VCWWD No. 8 receives water from CMWD through 12 turnout locations. Some of these locations are able to directly feed into the VCWWD No. 8’s system via gravity, while others require pumping for use in the VCWWD No. 8’s system. The total rated capacity of the existing turnouts is nearly 57,900 gpm. A summary of the existing turnouts is listed in Table 7.

Table 7 – VCWWD No. 8 Turnout Capacity ^[1]

Turnout Name	Size	Rated Capacity (gpm)
Winncastle	12"	5,000
Woodranch	12"	5,000
Easy Street	14"	6,000
Erringer Road	10"	3,000
First Street	12"	6,000
Sinaloa #2	8"	2,000
Erringer/Cochran Street	16"	5,000
Stearns Street	12"	5,000
Tapo Canyon/Cochran Street	12"	8,500
Yosemite/Cochran Street	12"	7,500
Smith Road (To Knolls)	6"	1,800
Smith Road (To Box Canyon)	10"	3,100
Total		57,900

[1] Source: 2010 VCWWD No. 8 Domestic Water Master Plan

It should be noted that actual turnout capacity may be lower due to hydraulic constraints (turnout valving, downstream piping diameter, pump station limitations, etc.).

As part of its operations and maintenance program, each month the DWR generates a water quality summary report for the State Water Project contractors. The September 2005 summary showed total dissolved solids (TDS) concentrations remains below Article 19 Ten-Year average Objective of 220 milligrams per liter (mg/L), except from Branks Pumping Plant (BPP), where tests showed a TDS concentration of 227 mg/L. TDS at all locations generally ranged from 140 to 227 mg/L. According to CMWD 2005 UWMP, TDS levels in SWP average 325 mg/L.

The CMWD 2005 UWMP discusses SWP water quality challenges – most notably seawater intrusion and agricultural drainage from peat soil islands in the Bay Delta. The water quality parameters of most concern

¹¹ VCWWD No. 8 2010 Domestic Water Master Plan

are total organic carbon (TOC), bromide, and salinity. Actions to protect SWP drinking water from increases of salt and pathogens at the Bay-Delta area are underway. MWDSC, in its effort to resolve potential impact from a decrease in water supply due to water quality, has instituted a 10 percent planning buffer, which requires identifying supply equal to 10 percent above that needed to meet 2025 demands.

During a severe drought condition, MWDSC may call upon CMWD to meet a significant portion of their demands through stored water in the Las Posas groundwater basin. In the unlikely event of water quality concerns, water treatment would be implemented upon extraction.

Groundwater

VCWWD No. 8 owns and operates two wells (Wells No. 31 and 32) in the Tapo/Gillibrand Groundwater Basin that have a total capacity of 2,200 gallons per minute (gpm). Water produced by the wells is currently used to serve the Lost Canyons golf course and American Wholesale Nursery. Groundwater accounts for approximately three percent of the water consumed in the VCWWD No. 8 service area.¹²

In an effort to reduce reliance on imported water from CMWD, the Tapo Canyon Water Filtration Plant was constructed to treat up to one million gallons of water per day (MGD) from Wells No. 31 and 32. The treated water is delivered through the potable water distribution system, and serves the non-potable water demands of the golf course and nursery. The water from the Tapo Canyon Water Filtration Plant is fed into the existing system through a pressure reducing station into the 1355 service area.¹³

Recycled Water¹⁴

VCWWD No. 8, under an agreement with CMWD, has implemented a pilot recycled water project for the local landfill. A portion of the effluent produced by the Simi Valley Water Quality Control Plant (WQCP), which is operated by the Simi Valley Sanitation Division (Division), is used by VCWWD No. 8 to irrigate landscaping in and around the Plant, and to clean sewer lines throughout the City. The District is currently planning for the expansion of the City's recycled water uses.

The City of Simi Valley's Sanitation Division completed its Wastewater Reclamation Facilities Plan Update in 1992. The plan outlined a water reclamation program (Simi Valley Regional Recycled Water System), which would involve the construction of new reclaimed water distribution facilities including pipelines and two new reservoirs that would serve users within VCWWD No. 8's service area. The proposed facilities would ultimately deliver almost 2,000 acre-feet per year of tertiary effluent from the WQCP. Project implementation and completion date are currently not available; therefore, this water resource was not included in the projected future recycled water supply estimate in the 2005 UWMP.

The total recycled water production from the City's WQCP was estimated at 43.1 acre-feet. The CMWD and VCWWD No. 8 Urban Water Management Plans project the future recycled water supply as shown in **Table 8**.

Table 8 – Current and Projected Recycled Water Supply

Simi Valley Water Treatment Plant Wastewater Flow	2000	2005	2010	2015	2020	2025
Annual Average Wastewater Flows (acre-feet)	10,190	10,300	11,790	13,270	14,760	16,240
Recycled Water Use (acre-feet)	30	60	110	110	110	110

¹² Source: VCWWD No. 8 2005 Urban Water Management Plan

¹³ VCWWD No. 8 2010 Domestic Water Master Plan

¹⁴ Source: VCWWD No. 8 2005 Urban Water Management Plan

Project Identification

The Project is identified as the future demands of undeveloped, or under-developed, areas proposed for development/redevelopment within the 2030 General Plan. From the VCWWD No. 2005 UWMP Amendment, build-out within the current city limits was anticipated to occur in year 2030. The water usage for VCWWD No. 8 was estimated to increase from 23,924 acre-feet to 31,848 acre-feet in 2030. This equates to a total increase of 7,924 acre-feet per year, or by 317 acre-feet annually over the 25-year period. The estimated total annual demands for the WSA study area only (within City limits) is calculated in Table 6 as 28,164 acre-feet, which would allow for 3,684 acre-feet for buildout of remaining county areas within the District.

Water Demand

A summary of the “past, current, and projected” water usage from the 2005 UWMP 2007 Amendment is provided in **Table 9** and shows water usage projected to increase from 23,924 acre-feet in the year 2005 to 31,848 acre-feet in 2030, which equates to a total projected increase in water usage of 7,924 acre-feet over a 25-year period, or an approximate annual increase of 317 acre-feet per year.

Table 9 – Past, Current and Projected Water Usage

Land Use	1995	2000	2005	2010	2015	2020	2025	2030 ^[2]
Single Family Residential	9,270	10,575	12,806 ^[1]	14,068	14,700	15,321	15,910	16,457 ^[3]
Multi Family Residential	883	986	1,166 ^[1]	1,516	1,691	1,862	2,026	2,177 ^[3]
Commercial/Institutional	2,498	2,380	1,887 ^[1]	1,992	2,045	2,097	2,146	2,191 ^[3]
Industrial	91	125	151 ^[1]	487	655	821	978	1,123 ^[3]
Landscape Irrigation ^[4]	2,839	3,380	4,574	4,807	5,052	5,310	5,581	5,865
Other ^[4]	0	500	1,688	1,774	1,865	1,960	2,060	2,165
Agricultural ^[5]	249	260	101	155	236	270	270	270
Wholesale ^[6]	1,225	1,286	1,550	1,560	1,570	1,580	1,590	1,600
TOTAL	17,055	19,492	23,924	26,359	27,814	29,220	30,559	31,848

[1] Based on 2004 consumption rates per land use
 [2] Assume buildout of City’s planning area by 2030
 [3] Based on buildout conditions calculated in Table III-1, 2005 UWMP Amendment
 [4] Assume 1-percent annual increase in usage per City staff
 [5] Assume 8.87-percent annual increase in usage per 2002 to 2004 average annual increase
 [6] Includes sales to Las Virgenes and VCWWD No.17. Assumes an average annual increase of 2 AF/yr in usage per 2000 UWMP.

Water Supplies

A summary of the past, current, and future water capacities available to VCWWD No.8 customers, as outlined in the 2005 UWMP Amendment is provided in **Table 10**. Based on these values, District water supplies were projected to increase from 24,856 acre-feet in the year 2005 to 40,545 acre-feet in 2030. It is anticipated that the majority of water demands for future developments will be met with increases in imported water.

Table 10 – Past, Current and Future Water Capacities Available to VCWWD No. 8^[1]

	2000	2001	2002	2003	2004	2005	2010	2015	2020	2025	2030
Imported Water Supply (CMWD)	21,424	20,403	22,640	21,934	23,198	23,990	25,946	29,245	32,289	35,649	39,362
Groundwater Supply (Wells No.s 31 & 32)	804	989	1,011	921	458	806	888	937	985	1,030	1,073
Recycled Water Supply (Simi Valley Water Quality Control Plant)	N/A	23	47	35	43	60	110	110	110	110	110
TOTAL	22,228	21,415	23,688	22,890	23,699	24,856	26,944	30,292	33,384	36,789	40,545

[1] Based on Table III-3 of the 2005 UWMP Amendment.

The Bard Reservoir (located just west of the 1205 service area at the CMWD Treatment Plant facility) has a total storage of nearly 8,000 acre-feet (2,607 MG) that may be utilized during emergency scenarios for the VCWWD No. 8 service area. Typically the Bard Water Treatment Plant (WTP) is used to supplement imported MWD supplies during summer months. The WTP can supply up to 100 cubic feet per second (cfs) for a short period of time and usually feeds the western portion of CMWD’s system. However, it also has the ability to be pumped into CMWD’s feeder lines to be used as supply for all of CMWD’s member agencies. A backup generator is available at Lake Bard in case there is an interruption of power.

VCWWD No. 8 will continue to be supplied primarily from CMWD’s turnouts into the foreseeable future. The recently constructed Tapo Canyon Treatment Plant provides 1.0 MGD of potable water to help offset the required imported water supply in the northern areas of the study area. As demands increase until year 2030, studies on the local groundwater basin’s capacity and water quality will be performed to determine the expandability of groundwater production and the Tapo Canyon Treatment Plant or if similar projects can be constructed in a cost effective manner.

In addition, both MWDSC and CMWD have undertaken regional storage projects in order to provide the region with a reliable source of water in the event of drought or transmission system disruption. MWDSC is currently filling Diamond Valley Lake, which provides an additional 800,000 acre-feet (260,663 million gallons) of storage. CMWD, in conjunction with MWDSC, is developing the Las Posas Basin Aquifer Storage and Recovery Project (ASR). It includes dual-purpose extraction and injection wells in three well fields in the Las Posas groundwater basin. This project, when completed, will bring an additional 300,000 acre-feet (97,755 million gallons) of water storage to the region.

Dry-Year Supplies

The 2005 Urban Water Management Plan analyzes how VCWWD No. 8 would meet water demands during single and multiple dry year periods up to year 2025. The analysis is provided in **Tables 11 through 14**. It should be noted that the 2005 UWMP reflects conservative demand estimates for normal, single and multiple dry year periods.

**Table 11 – Multiple Dry Year Period Ending 2010
Dry Year Supply and Demand Comparison – 2010**

Water Supply		Normal (AF)	Dry Year (AF)	Multiple Dry Years (AF)		
				2010	2011	2012
Imported Water	CMWD	25,361	20,289	20,289	20,289	20,289
	MWDSC & CMWD Reserves	0	4,840	4,840	5,127	5,417
Groundwater	Average supply	888	888	888	898	908
	Additional supply	0	232	232	222	212
Recycled Water		110	110	110	110	110
TOTAL SUPPLY		26,359	26,359	26,359	26,646	26,935
TOTAL DEMAND		26,359	26,359	26,359	26,646	26,935

**Table 12 – Multiple Dry Year Period Ending 2015
Dry Year Supply and Demand Comparison – 2015**

Water Supply		Normal (AF)	Dry Year (AF)	Multiple Dry Years (AF)		
				2015	2016	2017
Imported Water	CMWD	26,767	21,414	21,414	21,414	21,414
	MWDSC & CMWD Reserves	0	5,170	5,170	5,464	5,751
Groundwater	Average supply	937	937	985	994	1,003
	Additional supply	0	183	183	173	163
Recycled Water		110	110	110	110	110
TOTAL SUPPLY		27,814	27,814	27,862	28,155	28,441
TOTAL DEMAND		27,814	27,814	27,862	28,155	28,441

**Table 13 – Multiple Dry Year Period Ending 2020
Dry Year Supply and Demand Comparison – 2020**

Water Supply		Normal (AF)	Dry Year (AF)	Multiple Dry Years (AF)		
				2020	2021	2022
Imported Water	CMWD	28,125	22,500	22,500	22,500	22,500
	MWDSC & CMWD Reserves	0	5,490	5,490	5,756	6,024
Groundwater	Average supply	985	985	985	994	1,003
	Additional supply	0	135	135	126	117
Recycled Water		110	110	110	110	110
TOTAL SUPPLY		29,220	29,220	29,220	29,486	29,754
TOTAL DEMAND		29,220	29,220	29,220	29,486	29,754

**Table 14 – Multiple Dry Year Period Ending 2025
 Dry Year Supply and Demand Comparison – 2025**

Water Supply		Normal (AF)	Dry Year (AF)	Multiple Dry Years (AF)		
				2025	2026	2027
Imported Water	CMWD	29,419	23,535	23,535	23,535	23,535
	MWDSC & CMWD Reserves	0	5,794	5,794	6,050	6,307
Groundwater	Average supply	1,030	1,030	1,030	1,038	1,047
	Additional supply	0	90	90	82	73
Recycled Water		110	110	110	110	110
TOTAL SUPPLY		30,559	30,559	30,559	30,815	31,072
TOTAL DEMAND		30,559	30,559	30,559	30,815	31,072

Water Shortage Contingency Plan¹⁵

VCWWD No. 8 Water Shortage Contingency Plan (WSCP) is outlined in the District’s 2005 UWMP Amendment, which serves as the primary plan to mitigate the impacts associated with a water shortage emergency. Since VCWWD No. 8 relies greatly on imported water from CMWD, all shortage contingencies are coordinated and based upon CMWD’s plan. CMWD adopted the provisions of MWDSC’s Incremental Interruptible Conservation Plan (IICP), which was subsequently adopted by VCWWD No. 8.

Worst case estimates were based on the assumption that there would be a 50 percent reduction in CMWD sources. The Stage VI provisions of the IICP mitigate this condition. Depending on the reduction goal, VCWWD No. 8 modifies its water rates accordingly. Trigger points listed in the IICP are used by CMWD. Upon modification by CMWD, VCWWD No. 8 implements reductions through these water rate modifications, which have proven to be highly successful in achieving its conservation goals.

According to the 2005 UWMP, it is stated that demands during the next 36 months (beginning from the time of the 2005 UWMP), including three percent growth and Stage VI reductions, would be met. Adjustments to the Water Conservation Inflection Point (WCIP) would be required to offset supply deficiencies.

Future Projects and Programs

The Simi Valley County Sanitation District (now merged with the City of Simi Valley) commissioned the 1992 Facilities Plan Update for Wastewater Reclamation in Simi Valley. This plan identified 81 potential users of recycled water. The potential users were contacted to determine their potential full-time recycled water use. Additional prospective recycled water users were also identified, and their water use estimated, by City staff. The total estimated recycled water demands of all potential users is 7,130 acre-feet per year. The plan examined various recycled water distribution system alternatives and recommended the most feasible solution. The proposed system would ultimately replace approximately 4,700 acre-feet of imported potable water with recycled water annually. Although many large-scale projects were designed to be supplied with recycled water, they are currently served with potable water for their non-domestic water needs until the recycled water becomes available. VCWWD No. 8 has recently completed a document addressing the design and construction standards, rules, and regulations for recycled water use, and is also currently preparing a Recycled Water Master Plan that will address the existing and future recycled water supplies and demands.

¹⁵ Source: VCWWD No. 8 2005 Urban Water Management Plan

In order to encourage consumers to use recycled water, a recycled water cost rate of between 80 and 85 percent of the potable water rate has been established. In order to further encourage the use of recycled water, the following items have been proposed:

- Recycled water will be available on demand.
- Recycled water will be supplemented with water from other sources if demand for recycled water exceeds supply of recycled water.
- The public will continue to be educated about the safety and availability of recycled water.
- VCWWD No. 8 will provide ongoing technical assistance to recycled water consumers at no cost to the consumer.

The North Lake Feasibility Study, prepared by Kennedy/Jenks Consultants in October 2002, recommends the supply of recycled water from VCWWD No. 8 to serve the North Park Nature Preserve and Village development project. Recycled water demands for this project are estimated at approximately 1,780 acre-feet per year, which includes both phases of the project: Moorpark City College recycled water demands, and Rustic Canyon Golf Course irrigation demands.

Water Supply Reliability

Based on recent studies conducted by MWDSC and CMWD, MWDSC's Diamond Valley Lake and CMWD's Las Posas ASR are able to provide a reliable water source during periods of drought, or in the event of some other catastrophic interruption of the water supply, through the year 2030.

State Water Project (SWP)

Due to the increased environmental and water management problems of the SWP facilities in past years, a cooperative effort among state and federal agencies and environmental, urban and agricultural communities was initiated in 1995, known as the CALFED Bay-Delta Program (CALFED). The CALFED program goals are to improve flood control, maintain water quality, restore ecological health, and increase water supply reliability to all users within the State by developing new groundwater and surface water storage projects. This will maximize the supply from SWP to all of its contract agencies, including MWDSC, and reduce the occurrences of water delivery cutbacks.

The California Legislature recently passed the Comprehensive Water Package in November 2009, which is a far-reaching legislative package that is aimed at improving the state's water supply reliability and restoring the Sacramento-San Joaquin River Delta ecosystem. As part of the Comprehensive Water Plan, Senate Bill 7 (SBX7-7) was signed into law. With the enactment of SBX7-7, the 20x2020 Water Conservation Plan was placed into statute, which includes a range of activities aimed at achieving a statewide 20 percent reduction in per capita urban water demand.

Metropolitan Water District of Southern California (MWDSC) Reliability

In 2004, MWDSC developed an Integrated Resources Program (IRP) Update, which identified a resource mix of local water resources, imported supply and conservation measures. In addition, MWDSC also utilizes storage strategies to increase both SWP and Colorado River reliability. Such strategies include utilizing Diamond Valley Lake and shared portions of Lake Perris and Castaic Lake, and developing off-stream storage facilities along the SWP California Aqueduct and the Colorado River Aqueduct. As a result of investments made in conservation, water recycling, storage and supply, MWDSC stated in the 2004 IRP that it expected to be 100 percent reliable out to 2025. Subsequent updates to this quantified reliability were necessary due to the recent drought and legal determinations passed down from the State courts. Most recent reliability estimates by the Department of Water Resources (DWR) indicate that water deliveries to all SWP contracting agencies are considered 100 percent reliable for up to 50 percent of Table A allocations (June 2010). Table A allocations are the original contract capacities identified for each State Water Project agency based on the delivery capacity of the Bay Delta system.

MWDSC has recently released a draft 2010 Integrated Water Resources Plan Update, which addresses the more recent water supply issues of the region including climate change, potential prolonged droughts, and unanticipated environmental constraints. MWDSC's diverse supply portfolio along with conservation strategies and storage development has allowed them to continue to provide the region with reliable water supply despite significantly reduced supplies from the Colorado River and State Water Project. MWDSC's actions resulted in the implementation of a 10 percent cutback in 2009 and 2010 instead of a 25 percent cutback that would have been imposed two years earlier. MWDSC expects conservation efforts throughout Southern California to save the annual equivalent of 1.2 million acre-feet by 2015 and 1.7 million acre-feet by 2035. In the draft 2010 IRP, MWDSC restates the 1996 assertion that "full-service demands at the retail level would be satisfied for all foreseeable hydrologic conditions."

Calleguas Municipal Water District (CMWD)

CMWD has focused its planning efforts on more efficient use of existing supplies and maximizing use of local resources. As indicated in the CMWD 2005 UWMP, CMWD is in the midst of implementing a capital improvement program aimed at reducing the region's demand for imported water. The focus of their capital improvement program is to expand on recycled water system and conjunctive-use facilities. Some of the major CMWD water projects in place or proposed to improve water reliability to the region including the following:

- Las Posas Basin Aquifer Storage and Recovery Project – The Las Posas Basin ASR Project will allow for the delivery and storage of large volumes of State water to the CMWD service area during periods of availability. The stored water will later be recovered to meet seasonal, drought and emergency demands. The project will develop up to 300,000 acre-feet of storage in the Las Posas Basin to be injected and recovered by 30 wells. The project will greatly enhance water reliability in the region. The CMWD 2005 UWMP indicates the project is approximately two-thirds complete and has an extraction capacity of approximately 70 cubic feet per second (cfs). It is anticipated that a maximum replenishment rate of 80 cfs and maximum extraction rate of 100 cfs will be available upon the completion of the project.
- Simi Valley Regional Recycled Water System – The purpose of this project is to develop approximately 2000 acre-feet per year of recycled water to be used by major water users within the VCWWD No. 8's service area.
- The Lake Bard Water Treatment Plant was recently expanded from 75 cfs to 100 cfs. The lake has a water storage capacity of approximately 8,000 acre-feet, which may be used during emergencies and peak demand.

IX. Water Supply Entitlements, Water Rights or Service Contracts

Law

10910. (d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

- (A) Written contracts or other proof of entitlement to an identified water supply.
- (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.
- (C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.
- (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

Groundwater

VCWWD No. 8 has groundwater rights in the Simi Valley groundwater basin; however, as indicated in California's Bulletin 118 of the Simi Valley Groundwater Basin, there is currently no formal management of the basin. VCWWD No. 8 also has overlying rights to the amount currently pumped from the Tapo/Gillibrand Groundwater Basin. A Groundwater management plan is currently under discussion for the Tapo/Gillibrand Groundwater Basin. For a more detailed description of the individual groundwater basins, see *Section IX – Groundwater Basin - Description, PWS Pumping, and Sufficiency Analysis*.

Imported Water¹⁶

A 10-year long-term purchase order contract between VCWWD No. 8 and CMWD was entered on November 18, 2002, and was effective commencing January 1, 2003. The contract, calls for the delivery of 100 percent of the water requested by VCWWD No. 8 "based upon availability". The purchase order includes an "initial base demand" of 22,089.3 acre-feet, "initial Tier 1 annual maximum" of 19,880.4 acre-feet, and "purchase order commitment" of 132,535.8 acre-feet. CMWD also has a long-term purchase order contract with MWDSC, effective January 1, 2003, with a term of 10 years.

Recycled Water¹⁷

VCWWD No. 8, under an agreement with CMWD, has implemented a pilot recycled water project for the local landfill. A portion of the effluent produced by the Simi Valley Water Quality Control Plant (WQCP), which is operated by the Simi Valley Sanitation Division (Division), is being used by VCWWD No. 8 to irrigate landscaping in and around the Simi Valley Water Quality Control Plant (WQCP), and to clean sewer lines throughout the city.

¹⁶ Source: VCWWD No. 8 2005 Urban Water Management Plan

¹⁷ Ibid

X. Groundwater – Basin Description, PWS Pumping, and Sufficiency Analysis

Law

10910. (f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

Groundwater Basin Description

VCWWD No. 8 currently owns and operates two wells in the Tapo/Gillibrand Groundwater Basin, which is located north of the City of Simi Valley. According to the County of Ventura Watershed Protection District website, the Tapo/Gillibrand Groundwater Basin is essentially unconfined and has a storage capacity of 80,000 acre-feet.

The City of Simi Valley overlies the Simi Valley Groundwater Basin. The Simi Valley groundwater basin, bounded on the north and northeast by the Santa Susana Mountains and the Simi fault, and on the south and southwest by the Simi Hills, underlies the southeastern portion of Ventura County, including the City. With a surface area of about 12,100 acres, an average depth of about 175 feet, and an average specific yield of 8.6 percent, the storage capacity of the basin is estimated at approximately 180,000 acre-feet. (A copy of the DWR Bulletin 118 is included in **Appendix B.**)

Groundwater Production

VCWWD No. 8 owns two wells in the Tapo Canyon area, which were originally drilled as part of the supply for the former Tapo Mutual Water District (Tapo Mutual). The Ventura County Waterworks District No. 14, which was later consolidated into VCWWD No. 8, took over Tapo Mutual in April 4, 1969, and subsequently included the Tapo Canyon Aquifer under current VCWWD No. 8 boundaries. Therefore, VCWWD No. 8 has overlying rights to the amount currently pumped from this aquifer. The capacities of the wells are as follows:

- Well No. 31: 1,300 gpm
- Well No. 32: 900 gpm

Water produced by the wells is currently used to serve the Lost Canyons golf course and American Wholesale Nursery. This water accounts for approximately three percent of the water consumed in the VCWWD No. 8 service area.¹⁸

In an effort to reduce reliance on imported water from CMWD, the Tapo Canyon Water Filtration Plant has recently been constructed, which treats up to one million gallons of water per day (MGD) from Wells No. 31 and 32. The treated water is used in the potable water distribution system while untreated water provides the non-potable water needs of the golf course and nursery. The water from the Tapo Canyon Water Filtration Plant is fed into the existing system through a pressure reducing station into the 1355 service area.¹⁹

A summary of the recent groundwater well production from 2006 to 2009 is included in Table 5 in Section VII.

Groundwater Level Trends²⁰

According to the County of Ventura Watershed Protection District website, the Tapo/Gillibrand Groundwater Basin is currently balanced.

Groundwater in the Simi Valley Groundwater Basin generally moves westward through the basin following the course of Arroyo Simi. During periods of overdraft, the slope of the groundwater surface can reverse in the western part of the basin and groundwater may flow in an easterly direction. Hydrographs of wells in the Simi Valley Groundwater Basin show that water levels have typically remained the same or risen since 1980. The basin was estimated at 95 percent capacity in 1999, with about 172,000 acre-feet in storage.

¹⁸ Source: VCWWD No. 8 2005 Urban Water Management Plan

¹⁹ VCWWD No. 8 2010 Domestic Water Master Plan

²⁰ California Department of Water Resources Groundwater Bulletin 118, Simi Valley Groundwater Basin (Last update 2/27/04)

State of the Basin

The Tapo Canyon Aquifer is not adjudicated.²¹ Currently there is no formal management of the Simi Valley Groundwater Basin.²²

Groundwater Quality²³

According to the Ventura County Watershed Protection District Water & Environmental Resources Division 2009 Groundwater Section Annual Report, the Tapo/Gillibrand Groundwater Basin has very good groundwater quality, although the two wells sampled in 2009 had TDS concentrations of 786 and 942 mg/L, and sulfate concentrations 287 and 320 mg/L, both which are above the MCL.

The quality of groundwater in the Simi Valley Groundwater Basin has had some challenges with volatile organic compounds (VOCs) in shallower portions of the basin. With a total dissolved solids (TDS) concentration of 1,580 milligrams per liter (mg/L), the quality of the groundwater is considered unsuitable for many municipal uses. Further groundwater quality information is included in the updated California's Groundwater Bulletin 118 prepared by the Department of Water Resources (**Appendix B**).

²¹ Source: VCWWD No. 8 2005 Urban Water Management Plan

²² California Department of Water Resources Groundwater Bulletin 118, Simi Valley Groundwater Basin (Last update 2/27/04)

²³ Source: VCWWD No. 8 2005 Urban Water Management Plan

XI. Primary Issue for Assessment - Conclusion

- (1) The Ventura County Waterworks District No. 8 is the public water supplier for the Study Area.
- (2) An increase in water demand for the VCWWD No. 8 served area of the City of Simi Valley was anticipated in the VCWWD No. 8 2005 Urban Water Management Plan.
- (3) The total estimated water requirement for the WSA study area is 22,498 acre-feet per year (total water production). Future water required for the study area is estimated to be 28,164 acre-feet per year.
- (4) The estimated water demand at build-out will result in a total net increase of 5,666 acre-feet per year for the study area, which corresponds to a net annual increase of 283 acre-feet per year over a 20-year period.
- (5) The VCWWD No. 8 2005 Urban Water Management Plan projected a total water usage of 31,848 acre-feet in year 2030. The total existing water requirement was estimated in the 2005 UWMP at 23,924 acre-feet per year. The net increase in water required for the study area represents 72 percent of the estimated increase District-wide. If development within the additional areas served by the District (The Knolls, Box Canyon, and Tapo Canyon) are not projected to demand more than the difference ($31,848 - 28,164 = 3,684$ AF/Yr), then the projected ultimate water requirement is sufficient. In addition, the 2005 UWMP projected a future water production capacity of 40,545 acre-feet per year by year 2030.
- (6) Increased water demands as a result of projects from the 2030 General Plan are planned to be met primarily with imported water, although VCWWD No. 8 will continue to expand local sources and investigate opportunities to increase the use of recycled water.
- (7) In the MWDSC draft 2010 Integrated Resources Plan Update, MWDSC restates the 1996 assertion that "full-service demands at the retail level would be satisfied for all foreseeable hydrologic conditions."
- (8) VCWWD No. 8 recently updated their Domestic Water Master Plan and maintains a 5-year Capital Improvement Program (CIP) that outlines planned projects and associated costs for the construction of new VCWWD No. 8 facilities or the upgrade of existing facilities. VCWWD No. 8 is also implementing 12 of the 14 Best Management Practices (BMP) as signatories to the California Urban Water Conservation Council MOU, which includes multiple water conservation measures.

Therefore, the City of Simi Valley concludes that sufficient water supply exists to meet the future water demand resulting from development within the City's General Plan 2030 and current City boundaries.

Appendices

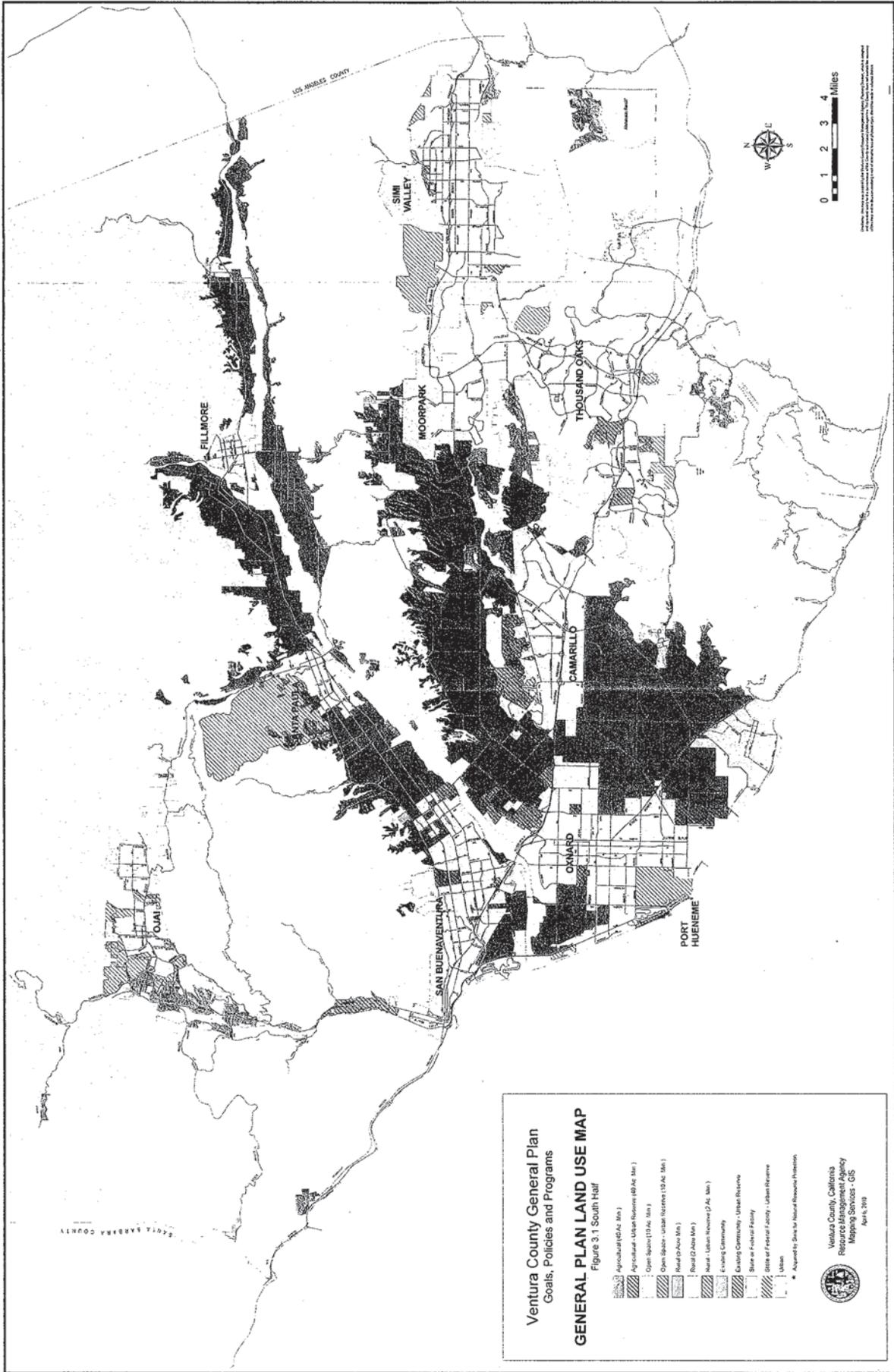
Appendix A – Ventura County General Plan Land Use Map

Appendix B – California’s Groundwater Bulletin 118 – Simi Valley Basin
(by California Department of Water Resources)

References

1. Ventura County Waterworks District No. 8 2005 Urban Water Management Plan.
2. City of Simi Valley 2030 General Plan Update (Screencheck Draft), July 2010.
3. Amendment to the 2005 Urban Water Management Plan adopted by the Ventura County Waterworks District No. 8, January 4, 2007.
4. Ventura County Waterworks District No. 8 “The City of Simi Valley” Domestic Water Master Plan, 2010.
5. Ventura County Waterworks District No. 8 Design Criteria
6. Ventura County Watershed Protection District Water & Environmental Resources Division 2009 Groundwater Section Annual Report
7. 2010 Integrated Water Resources Plan Update, The Metropolitan Water District of Southern California, Draft Release July 2010.

Appendix A



Appendix B

Simi Valley Groundwater Basin

- Groundwater Basin Number: 4-9
- County: Ventura
- Surface Area: 12,100 acres (19.0 square miles)

Basin Boundaries and Hydrology

This groundwater basin underlies Simi Valley in southeastern Ventura County. The basin is bounded on the north and northeast by the Santa Susana Mountains and the Simi fault and on the south and southwest by the Simi Hills. Ground surface elevation of the valley ranges from 700 to 1,100 feet above sea level (CSWRB 1956). Surface runoff discharges into the Arroyo Simi and flows west to join Arroyo Los Posas. Average annual precipitation ranges from 16 to 20 inches.

Hydrogeologic Information

Water Bearing Formations

The primary water-bearing unit in this basin is alluvium. Groundwater is generally unconfined but as grain size decreases towards the western end of the basin, clay lenses in the alluvium cause localized confinement. The average specific yield for the Simi Valley Groundwater Basin is 8.6 percent (CSWRB 1956), the average well yield for the basin is 394 gpm, and the depth to water producing zones is typically 5 to 25 feet (Panaro 2000a).

Pleistocene to Holocene Alluvium. The alluvium consists of gravels, sands, and clays with a maximum thickness of 730 feet (DWR 1959). The alluvium becomes shallow and constricted at the point where Arroyo Simi exits the western part of the valley (CSWRB 1956).

Restrictive Structures

The northern boundary of the basin is defined by the Simi fault, which may act as a barrier to subsurface inflow from the north.

Recharge Areas

Percolation of direct precipitation, inflow of minor streams, minor subsurface inflow from surrounding semi-permeable formations, and irrigation return provide recharge to the basin (Panaro 2000a).

Groundwater Level Trends

Groundwater generally moves westward through the basin following the course of Arroyo Simi (DWR 1959). During periods of overdraft, the slope of the groundwater surface can reverse in the western part of the basin and groundwater may flow in an easterly direction. Hydrographs of wells in the Simi Valley Groundwater Basin show that water levels have typically remained the same or risen since 1980.

Groundwater Storage

Groundwater Storage Capacity. The storage capacity for this basin is estimated at about 180,000 af (CSWRB 1956; DWR 1975; Panaro 2000a).

This estimate is consistent with an area of about 12,100 acres, an average thickness of about 175 feet, and an average specific yield of about 8.6 percent.

Groundwater in Storage. The basin was estimated at 95 percent full in 1999, with about 172,000 af in storage (Panaro 2000a; 2000b).

Groundwater Budget (Type A)

Limited data are available from Ventura County for water budget information. Recharge includes underflow of about 3,900 af/year and irrigation return of 800 to 1,500 af/year (Panaro 2000a). Pumping is estimated to be less than 5,500 af/year (Panaro 2000a).

Groundwater Quality

Characterization. Groundwater produced from Quaternary alluvium ranges from calcium sulfate to calcium-sodium sulfate (DWR 1959).

Impairments. There are some problems with VOCs in shallower portions of the basin. Analysis of water from one public supply well shows a TDS concentration of 1,580 mg/L.

Water Quality in Public Supply Wells

Constituent Group ¹	Number of wells sampled ²	Number of wells with a concentration above an MCL ³
Inorganics – Primary	4	0
Radiological	4	3
Nitrates	4	1
Pesticides	4	0
VOCs and SVOCs	1	0
Inorganics – Secondary	4	3

¹ A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).

² Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

³ Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

	Well yields (gal/min)	
Municipal/Irrigation	Range:	Average: 394 gal/min (Panaro 2000b)
	Total depths (ft)	
Domestic	Range:	Average:
Municipal/Irrigation	Range:	Average:

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
City of Simi	Groundwater levels	13/weekly (Dubrick 2001)
Department of Health Services and cooperators	Title 22 water quality	1

Basin Management

Groundwater management:	Currently there is no formal management of the basin (Panaro 2000b). The main source of water for the District is through Calleguas Municipal Water District.
Water agencies	
Public	Ventura County Water District No. 8
Private	Southern California Water Company

References Cited

- California Department of Water Resources (DWR). 1959. *Water Quality and Water Quality Problems, Ventura County*. Bulletin 75. 195 p.
- _____. 1975. *California's ground water*. Bulletin 118. 135 p.
- California State Water Resources Board (CSWRB). 1956. *Ventura County Investigation*. Bulletin 12. Two Volumes.
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- Panaro, D. 2000a. Fox Canyon Groundwater Management Agency: Written Communication to R.R. Davis (DWR), March 2000.
- _____. 2000b. Fox Canyon Groundwater Management Agency: Written Communication to B.C. Moniz (DWR), December 2000.

Additional References

- California Department of Public Works (CDPW). 1933. *Ventura County Investigation*. Division of Water Resources. Bulletin 46. 244 p.
- Jennings, C.W., and Strand, R.G. 1969. *Geologic Map of California: Los Angeles Sheet*, Olaf P. Jenkins Edition: California Division of Mines and Geology, scale 1:250,000, 1 sheet.
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Errata

Changes made to the basin description will be noted here.