

Alberhill Villages and Alberhill Ridge Water Supply Assessment

March 2012



FINAL REPORT



MWH®

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Elsinore Valley Municipal Water District

Our Mission...

EVMWD will provide reliable, cost-effective, high quality water and wastewater services that are dedicated to the people we serve.

General Manager
Ronald E. Young
District Secretary
Terese Quintanar
Legal Counsel
Best Best & Krieger

March 27, 2012

Warren Morelion, AICP
Planning Manager
City of Lake Elsinore
130 South Main Street
Lake Elsinore, CA 92530

**Subject: Water Supply Assessment (WSA)
Alberhill Villages Specific Plan and Alberhill Ridge (VTTM 35001)**

Dear Mr. Morelion:

In a letter dated September 21, 2011, the City requested that Elsinore Valley Municipal Water District (EVMWD) prepare a Water Supply Assessment (WSA) for Alberhill Villages and Alberhill Ridge. In accordance with the WSA statute, it is expected that the WSA will be incorporated into the City's CEQA documents for the referenced planning actions.

Attached is the completed WSA, as approved by the EVMWD Board of Directors on March 22, 2012.

It is important to note that the WSA is only an intermediate component of the CEQA analysis and does not constitute a firm commitment from EVMWD to provide water or other services to the subject projects. EVMWD's Administrative Code Section 3901 (Appendix F in the WSA) describes WSAs and related Written Verifications (WVs) and how they relate to development projects.

For purposes of the WSA, water demands associated with the subject projects fall within the projected demands that are included in other EVMWD planning documents, such as its Urban Water Management Plan (UWMP), which is updated every five years. Thus, EVMWD is confident that adequate planning has been conducted to ensure sufficient water will be available to support the future development if and when it occurs.

However, because the subject projects are only in the preliminary stage of planning, EVMWD will not be in the position to make firm commitments to provide the water until the planned development is closer to being implemented. As development proceeds, and planning becomes more precise and committed, developers work with EVMWD to obtain Service Commitment Letters ("will serve letters") and/or development agreements to formalize EVMWD's commitment to provide water and other services to specific parcels.

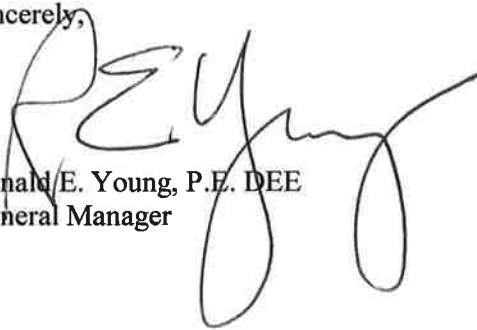
Other WSAs have been approved for prior applicants. However, because EVMWD believes those projects remain in their early levels of planning, the demands associated with those WSA's have not been included as planned future uses in this WSA. Similarly, EVMWD retains the discretion to determine whether or not the detailed demands of this WSA would be included as part of the District's planned future uses for purposes of preparing any future WSAs for other development proposals.

March 27, 2012
City of Lake Elsinore
Alberhill Specific Plan and Alberhill Ridge
Page 2

Again, it is important to note that EVMWD's recently adopted 2010 UWMP concludes that the District's total projected water supplies are sufficient to meet its total projected demands over the next 20-year horizon and beyond during all hydrologic conditions.

Please forward a copy of the draft CEQA documents for these projects to us once they are circulated. If you have any questions or concerns regarding the WSA at any time during the CEQA process, please contact Paul Carver, Director of Engineering, at (951) 674-3146.

Sincerely,

A handwritten signature in black ink, appearing to read 'RE Young', with a large, stylized loop at the end.

Ronald E. Young, P.E. DEE
General Manager

Table of Contents

Section Name	Page Number
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Executive Summary

Purpose.....	ES-1
EVMWD Service Area	ES-1
Projected Demands	ES-1
Projected Supplies.....	ES-2
Comparison of Demands and Supplies.....	ES-4
Approval	ES-4

Section 1 - Introduction

Overview of the Law	1-1
EVMWD Service Area	1-2
History of EVMWD.....	1-2
Demographic Forecasts.....	1-3
Alberhill Villages and Alberhill Ridge Proposed Projects	1-5
Objective	1-7
Documentation.....	1-7
Acknowledgements.....	1-8
Project Staff	1-8
Report Overview	1-8

Section 2 - Water Demands

Existing Water Demands	2-1
Existing Potable Water Demands	2-1
Existing Recycled Water Demands	2-3
Future Water Demands	2-4
Future Potable Water Demands	2-4
Future Recycled Water Demands	2-6
Alberhill Villages and Alberhill Ridge Demands.....	2-7
Summary of Future Demands	2-8

Section 3 - Water Supply Sources

Existing Potable Water Supplies.....	3-1
Groundwater	3-4
Surface Water.....	3-8
Treated Imported Water	3-10
Groundwater	3-14
Pipeline Blending.....	3-16
Treated Imported Water	3-18

Water Supply Summary	3-19
Recycled Water Supplies	3-19
Existing Recycled Water Supplies.....	3-20
Future Recycled Water Supplies.....	3-22

Section 4 - Comparison of Supply and Demand

Recycled Water Supply versus Demand Comparison	4-1
Potable Water Supply versus Demand Comparison	4-2
Potable Water Supply versus Committed Demands	4-3
Projected Remaining Supplies	4-5
Conclusions.....	4-5

Appendices

Appendix A – References
Appendix B – Alberhill Villages and Alberhill Ridge Project Site Location Figures
Appendix C – Demand Calculation (KWC Engineer – Draft Facilities Master Plan - Appendix E)
Appendix D – Will-Serve List (as of December 2011)
Appendix E – Elsinore Groundwater Basin Bulletin
Appendix F – EVMWD Administrative Code

LIST OF TABLES

Table Name	Page Number
Table ES-1 Summary of Projected Potable Water Demands.....	ES-2
Table ES-2 Summary of Projected Recycled Water Demands.....	ES-2
Table ES-3 Summary of Existing and Future Potable Water Sources.....	ES-3
Table ES-4 Maximum Available Future Recycled Water Production Capacity	ES-4
Table 1-1 Population and Employment Forecasts.....	1-5
Table 1-2 Alberhill Villages and Alberhill Ridge Land-Use Plan Summary.....	1-7
Table 1-3 Abbreviations.....	1-9
Table 2-1 Historic Potable Water Demands.....	2-3
Table 2-2 Historical Recycled Water Demands	2-4
Table 2-3 Water Duty Factors	2-5
Table 2-4 Potable Water Future Demand Projections (without Alberhill Villages and Alberhill RidgeDevelopment).....	2-6
Table 2-5 Recycled Water Future Demand Projections (without Alberhill Villages and Alberhill RidgeDevelopment).....	2-7
Table 2-6 Alberhill Villages and Alberhill RidgeDevelopment Potable Water Demand Projections	2-8
Table 2-7 Summary of Existing and Future Potable Water Demand (with Alberhill Villages and Alberhill RidgeDevelopment).....	2-9
Table 2-8 Summary of Future Potable Water Demand.....	2-9

Table 2-9	Summary of Existing and Future Recycled Water Demands (with Alberhill Villages and Alberhill Ridge Development)	2-10
Table 2-10	Summary of Future Demands with Alberhill Villages and Alberhill Ridge Development	2-10
Table 3-1	Available Existing Water Supplies for Maximum Day Demands	3-3
Table 3-2	Available Existing Water Supplies for Average Annual Demands	3-3
Table 3-3	Existing Active EVMWD Groundwater Wells Production Capacity	3-6
Table 3-4	EVMWD Groundwater Wells Production (2002-2008)	3-7
Table 3-5	Summary of Historical Flows to Canyon Lake WTP, 1993 through 2009	3-10
Table 3-6	Anticipated Surface Water Deliveries without Supplemental Imported Water	3-11
Table 3-7	Future Water Supply Sources	3-14
Table 3-8	Summary of Groundwater Management Plan	3-15
Table 3-9	Required Permits for Terra Cotta Well Equipping	3-16
Table 3-10	Required Permits for Palomar Well Replacement	3-17
Table 3-11	Required Permits for Temescal Valley Pipeline Pump Station	3-18
Table 3-12	Summary of Existing and Future Potable Water Sources	3-19
Table 3-13	Historical Recycled Water Available Production	3-20
Table 3-14	Future Recycled Water Production based on Future Potable Water ADD	3-22
Table 3-15	Maximum Available Future Recycled Water Production Capacity	3-23
Table 4-1	Recycled Water Supply and Planned Demand	4-2
Table 4-2	Revised Potable Water Demands – Year 2030	4-3
Table 4-3	Comparison of Potable Supply and Projected Demand, Annual Basis Year 2030	4-4
Table 4-4	Comparison of Potable Supply and Demand, Maximum Day Basis Year 2030	4-5

LIST OF FIGURES

Figure Name	Page Number
Figure ES-1	Summary of Projected Demands and Supplies.....ES-2
Figure 1-1	EVMWD Service Area 1-2
Figure 1-2	Projected Population and Employment within the EVMWD Service Area 1-4
Figure 1-3	Alberhill Villages and Alberhill Ridge Project Location 1-6
Figure 2-1	Historical Potable Water Demands..... 2-2
Figure 2-2	Summary of Projected Demands 1-2
Figure 3-1	Existing Water Supply Sources 3-2
Figure 3-2	Historical Water Production by Source 3-4
Figure 3-3	Elsinore Groundwater Basin..... 3-6
Figure 3-4	Canyon Lake WTP Production 3-9

Executive Summary

PURPOSE

This Alberhill Villages and Alberhill Ridge Development Water Supply Assessment for the Elsinore Valley Municipal Water District (EVMWD) is prepared in accordance with California Water Code (Water Code) Section 10910 *et seq.* (enacted as Senate Bill (SB) 610 (Costa) in 2001). In accordance with the SB 610 standard, this report evaluates whether EVMWD'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 EVMWD's existing and planned future water demands, including agricultural and manufacturing uses. The Temescal Division does not depend in any way on the supplies identified in the WSA that serve current and future water demands in the Elsinore Division, the entire demand of Temescal Division is met with supplies developed in that Division. Thus, the demand and supply numbers used in the WSA only corresponds to Elsinore Division and the Temescal Division is not discussed as part of this WSA.

This WSA represents an assessment of the District's committed demands, demands of the Alberhill Villages and Alberhill Ridge projects, and existing and projected water supplies. Nothing in this WSA constitutes a commitment to reserve water supplies to any specific development.

EVMWD SERVICE AREA

EVMWD provides water and wastewater services to its Elsinore Division which encompasses an area of 96 square miles including the Cities of Lake Elsinore, Canyon Lake and Wildomar as well as portions of the City of Murietta and unincorporated areas of Riverside County. The Elsinore Division has experienced substantial growth in recent years and the area's population is forecasted to further increase over the next 20-year horizon.

PROJECTED DEMANDS

Proposed developments that have not obtained a will-serve letter or other written agreement that commits EVMWD to serve a particular development are not included in the future demand projections, including developments that may have had a WSA in the past. However, the urban growth and projected water demands associated with Alberhill Villages and Alberhill Ridge projects fall within the forecasted growth and projected water demands that are generally identified in the District's 2010 UWMP. Thus the projected demand identified in the UWMP in 20 years is much higher than the projected demands identified in this WSA as UWMP projects the demand based on population projection includes other projects apart from Alberhill Villages and Alberhill Ridge. Similarly, the WSA only identifies and acknowledges the near future planned supplies and not all the projected supplies that may be developed in 20 year horizon. Additional long term future supplies are not identified in the WSA as near term future supplies are sufficient to meet the committed demands and demands that will be generated by Alberhill Villages and Alberhill Ridge project. Alberhill Villages and Alberhill Ridge is part of the forecasted growth and projected water demand identified in the District's 2010 UWMP and 2010

UWMP demonstrates and concludes sufficient long term water supply when accounting for the District's total projected water supplies and demands during normal, single-dry, multiple-dry and wet years over the next 20 years projection.

EVMWD has projected water demands for existing and planned future developments within its service area. Planned future developments are determined by either the current will-serve list of developments or other written agreements between EVMWD and the developers. **Figure ES-1** below shows the comparison of the planned future demands identified in this WSA, Projected demands identified in UWMP, existing supplies and Projected supplies identified in this WSA. As show in **Figure ES-1**, the future projected supplies are sufficient to meet the demands projected under this WSA and demands projected in 2010 UWMP. Recycled water deficit represents future recycled water demands that need to be supplemented with potable water. **Table ES-1** presents the estimated potable water demand for normal, wet, and dry years for both average day demand (ADD) and maximum day demand (MDD) conditions. The current will-serve list is provided in **Appendix C**.

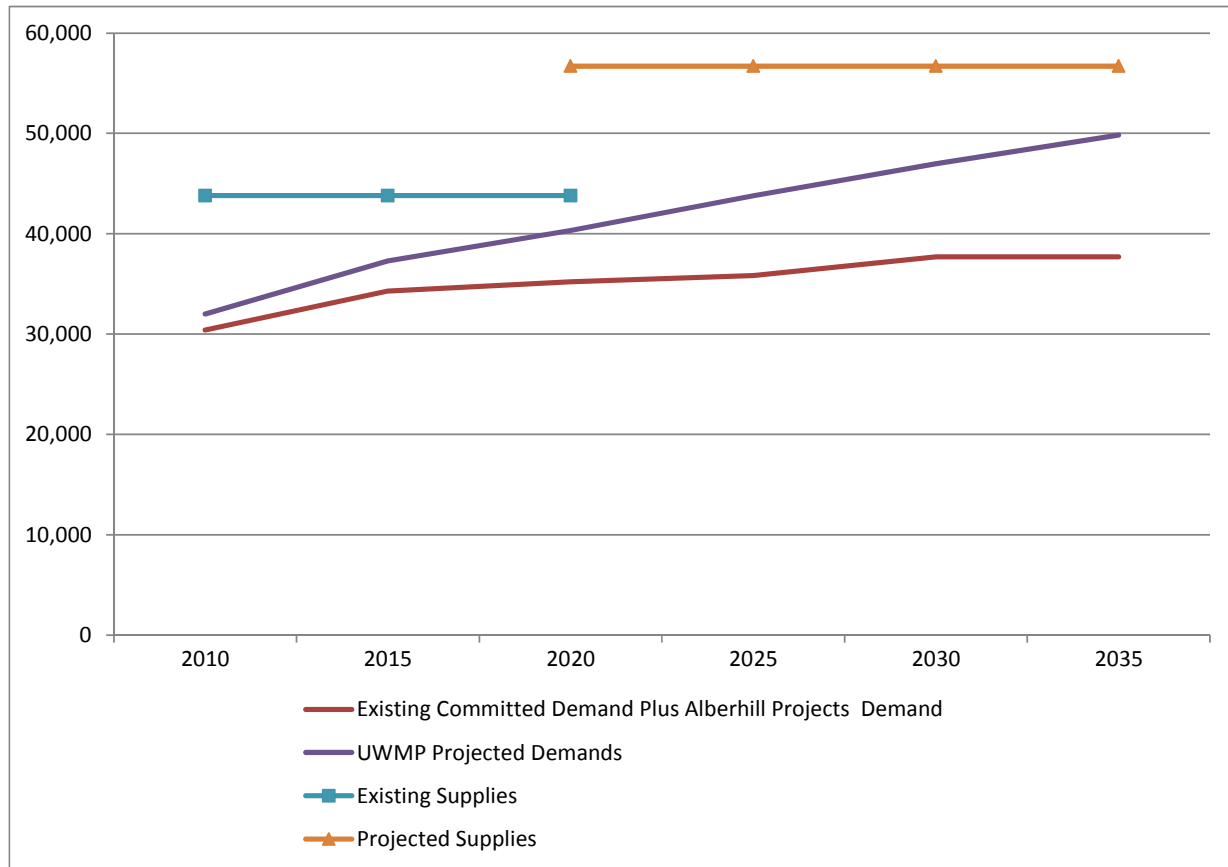


Figure ES-1
Summary of Projected Demands and Supplies

Table ES-1
Summary of Projected Potable Water Demands

Demand Category	Normal Year (acre-ft/yr)	Wet Year (acre-ft/yr)	Dry Year (acre-ft/yr)
Existing Demands	30,400	27,000	34,400
Inactive Account Demands	1,600	1,400	1,800
Will-Serve Demands (Future)	900	800	1,000
Recycled Water Conversions (Future)	(1,200)	(1,100)	(1,400)
Summerly Development (Future)	600	500	700
Alberhill Villages and Alberhill Ridge Development (Future)	5,300	4,700	6,000
Recycled Water Deficit	100	0	200
Total Annual Demand (acre-ft/yr)	37,700	33,300	42,700
Average Day Demand (mgd)	33.7	29.7	38.1
Maximum Day Demand (mgd)	68.4		

Table ES-2 presents the estimated recycled water demand for normal, wet, and dry years for both average day demands (ADD) and maximum day demands (MDD).

Table ES-2
Summary of Projected Recycled Water Demands

Demand Category	Normal Year (acre-ft/yr)	Wet Year (acre-ft/yr)	Dry Year (acre-ft/yr)
Existing Demands	450	400	510
Recycled Water Conversions (Future)	1,200	1,060	1,360
Total Annual Demand (acre-ft/yr)*	1,650	1,460	1,870
Average Day Demand (mgd)	1.47	1.3	1.7
Maximum Day Demand (mgd)	4.1	3.4	4.6

*Total demand numbers are rounded to nearest 100.

PROJECTED SUPPLIES

EVMWD obtains its potable water supplies from local groundwater from the Elsinore Basin, local surface water from Canyon Lake, and imported water. Imported water is obtained from the Metropolitan Water District of Southern California (Metropolitan) and delivered to EVMWD through the Auld Valley pipeline (AVP) and Temescal Valley Pipeline (TVP). In order to increase future supplies, EVMWD constructed the 20-inch diameter pipeline from Diamond & Summerly Wells to Cereal 1 & Corydon Wells for blending. With the start-up of the pipeline, EVMWD will be able to operate Cereal 1 and Corydon wells. EVMWD plans for equipping Terra Cotta Well, and drilling the Palomar Well replacement by 2014. Construction of the TVP Pump Station will allow the purchase of increased volumes of water supplies from Metropolitan through the TVP. **Table ES-3** summarizes the existing and planned potable water supplies in normal, single dry, multiple dry and wet years. For the purpose of this WSA, it identifies only those planned potable water supplies which are currently part of District's capital improvement program or if it's included in next two years budget cycle. Whereas UWMP includes additional future potable water supplies which are beyond two years budget cycle.

Table ES-3
Summary of Existing and Future Potable Water Sources

Water Supply Source	Capacity (mgd)	Average Year (acre-ft/yr)	Single Dry Year (acre-ft/yr)	Multiple-Dry Years (acre-ft/yr)	Single Wet Year (acre-ft/yr)
Existing Supplies					
Canyon Lake (Natural Runoff)	7.0	4,900	2,500	3,000	8,000
Groundwater (Extraction)	15.4	3,700	11,300	10,000	3,400
Groundwater (Injection) ³	(6.8)	(6,100)	0	0	(6,900)
TVP	12.7	12,700	12,700 ¹	12,700 ¹	12,700
AVP	24.2	22,500	18,500 ^{2,3}	18,500 ^{2,3}	22,500
Total - Existing Supplies	59.3	43,800	45,000	44,200	46,600
Future Supplies					
Cereal 1 & Corydon (including Injection)	3.8	0	2,000	1,600	0
Terra Cotta Well ⁵ (including Injection)	1.7	0	1,400	1,300	0
Palomar Replacement	0.7	0	1,000	800	0
TVP Pumping Station	13.8	12,900	12,900	12,900	12,900
Total - Future Supplies	20.0	12,900	17,300	16,600	12,900
Total	79.3	56,700	62,300	60,800	59,500

1) Accounts for 83% of TVP capacity (Table 5-1, 2010 UWMP).

2) Accounts for 83% of AVP capacity (Table 5-1, 2010 UWMP).

3) Based on Metropolitan's agreement with EVMWD on groundwater storage program (Elsinore basin conjunctive use program), 4,000 acre-ft/yr is deducted from Metropolitan's deliveries to EVMWD during single dry year & multiple dry years.

4) Annual supply values in the above table are rounded to nearest 100.

5) Yield is included in BBGSP values

Table ES-4 presents a summary of the total available future recycled water production capacity that EVMWD may have access to based on the existing and future planned development.

Table ES-4
Maximum Available Future Recycled Water Production Capacity

Source	Projected Average Flows	
	(mgd)	(acre-ft/yr)
Horsethief WRF (existing)	0.5	600
Railroad Canyon WRF (existing)	1.2	1,300
Regional WRF (existing)	8.0	9,000
Santa Rosa WRF (existing)	1.5	1,700
Temecula Valley Regional WRF (existing)	12.0	13,400
Total	23.2	26,000

COMPARISON OF DEMANDS AND SUPPLIES

The existing and planned supplies are sufficient to meet existing and currently committed future maximum day demands conditions including Alberhill Villages and Alberhill Ridge development during normal, single dry and multiple dry years over a 20-year period.

EVMWD has the following existing supplies: surface water from Canyon lake WTP, groundwater supplies, and imported water from Metropolitan through the AVP and TVP. The additional supplies that EVMWD is pursuing include the construction of a pipeline from Diamond and Summerly wells to Cereal 1 and Corydon wells, Palomar well replacement, Terra Cotta well and TVP pump station. Based on the information and analyses contained in this WSA, EVMWD concludes that its total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will be sufficient to meet the projected water demand associated with the Alberhill Villages and Alberhill Ridge Specific Plan, in addition to EVMWD's existing and planned future water demands, including agricultural and manufacturing uses.

Section 1

Introduction

OVERVIEW OF THE LAW

In 2001, the California Legislature enacted two laws that are intended to improve the linkage between water supply planning and new development. California Water Code (Water Code) Section 10910 *et seq.* (enacted as Senate Bill (SB) 610 (Costa) in 2001) requires water suppliers to prepare a water supply assessment (WSA) for certain new developments (referred to as “projects”). The WSA must address whether the water provider’s total projected water supply during normal, single dry, and multiple dry year periods over the next 20 years is adequate to meet the demand projected for the project plus existing and planned future uses. Section 66473.7 of the California Government Code (enacted as SB 221 (Kuehl) in 2001) requires the land use agency (i.e., the city or county) approving a subdivision (as defined in the code) to include as a condition for approval written verification (WV) that sufficient water supply is available. SB 610 and SB 221 are companion measures which seek to promote more collaborative planning between local water suppliers and cities/counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. Because the Alberhill Villages and Alberhill Ridge projects does not propose a subdivision that is currently at tentative tract map stage of land use planning, a WV is not yet required under SB 221 and EVMWD has not been requested to prepare a WV.

As defined in Section 10912 of the Water Code, a “project” is a development that is subject to the California Environmental Quality Act (CEQA) and is defined as follows:

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.

Pursuant to SB 610, once a WSA is prepared it is incorporated into the environmental review document being prepared for the project under the California Environmental Quality Act (CEQA) and becomes part of the administrative record for the CEQA process. (Water Code § 10911(c).) This Alberhill Ridge and Alberhill Villages WSA has been prepared in accordance with the requirements of SB 610.

EVMWD SERVICE AREA

EVMWD provides water and wastewater services to its Elsinore Division and Temescal Division which encompasses an area of 96 square miles as shown in **Figure 1-1**, including the Cities of Lake Elsinore and Canyon Lake, as well as portions of the City of Murietta and unincorporated areas of Riverside County. The Temescal Division does not depend in any way on the supplies identified in the WSA that serve current and future water demands in the Elsinore Division, the entire demand of Temescal Division is met with supplies developed in that Division. Thus, the demand and supply numbers used in the WSA only corresponds to Elsinore Division and the Temescal Division is not discussed as part of this WSA. The Elsinore Division has experienced substantial growth and its population is forecasted to increase by approximately 40 percent over the next 20-year projection. Along with such growth comes the need for expanded water supplies and ongoing measures to manage demand. This section contains the demographic forecasts of population and employment. The data is used in subsequent sections to estimate future water demands.

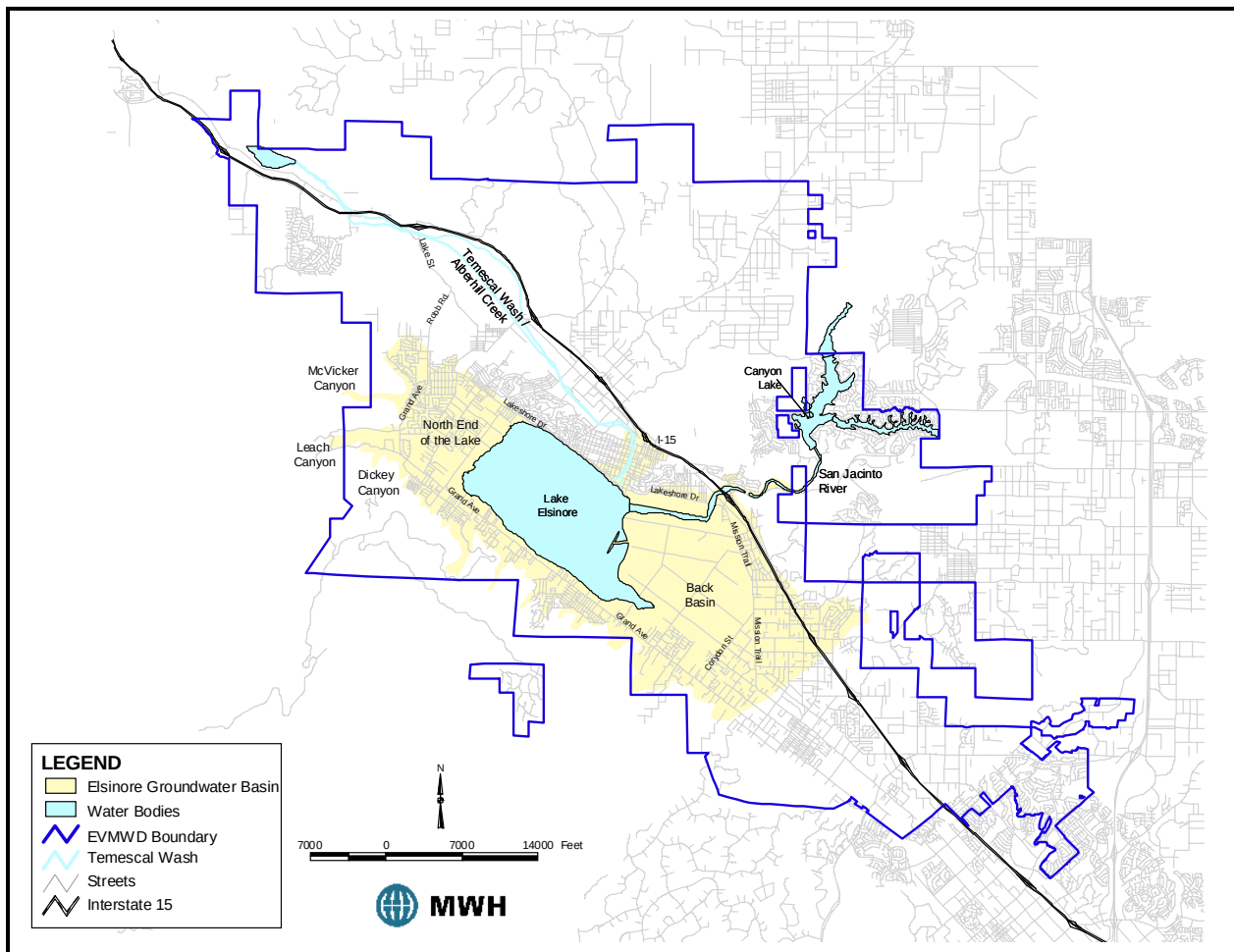


Figure 1-1
EVMWD Service Area

History of EVMWD

EVMWD was incorporated on December 23, 1950, under the provisions of the California Municipal Water District Act of 1911. The purposes of the District are to finance, construct, operate, and maintain water and wastewater systems serving properties within the District boundaries. EVMWD was formed for the purpose of protecting local water supplies and importing supplemental water to alleviate water shortages. At the time, the District was found to have too low of an assessed valuation to become a member of the Metropolitan Water District of Southern California (Metropolitan). Consequently, in 1954, EVMWD was annexed to the then newly formed Western Municipal Water District (WMWD), a member agency of Metropolitan.

A bond election was held in 1955 that provided \$1,600,000 in capital funding for transmission, storage, treatment and limited distribution facilities for the importation and distribution of Metropolitan water within the EVMWD. Subsequent negotiations with the Temescal Water Company (TWC) resulted in the Railroad Canyon Storage Agreement (1955), which provided EVMWD with 3,000 acre-feet of storage in Railroad Canyon Reservoir.

During 1956 and 1957, construction proceeded on the loop feeder system in Improvement District No. 1. Also during this period, several small mutual water companies petitioned EVMWD to accept their physical facilities and operate them. These were Elsinore Valley Mutual, Kilmeny Lot Owner's Mutual, Landowner's Mutual, Grand Avenue Mutual, Lakeview Mutual, and Clayton Mutual water companies. The first delivery of Metropolitan water started on April 8, 1957.

In July 1962, Improvement District No. 2 encompassing the Meadowbrook area was formed into, which increased the EVMWD service area by one-third. Services were extended to the El Cariso area by the formation of Improvement Districts 3A and 4, and to the Eucalyptus Grove area by the formation of Assessment District 65-1. During 1967-68, Improvement District U-1 serving the Rancho Capistrano area was formed. The formation of Improvement District U-2 during 1967-68 serving the Canyon Lake Development was the initial step of providing sewer service within the EVMWD. In 1969, the assets of South Elsinore Mutual Water Company were purchased for cash and the services in that area consolidated with regular operations. The acquisition of the TWC in 1989 increased the service area of EVMWD into the Temescal Valley. This portion of District's service area is designated as the Temescal Division, while the remainder of the service area is the Elsinore Division. In July 2011 the Elsinore Water District (EWD) merged with EVMWD.

Today, the residents within the EVMWD boundary are served by one of two water service agencies: EVMWD, and the Farm Mutual Water Company (FMWC). The FMWC is located entirely within EVMWD boundaries, and obtains most of its water wholesale from EVMWD.

As a Municipal Water District organized and operating pursuant to Water Code section 71000 *et seq.*, EVMWD has the authority to act in its own name to make and enter into contracts; to incur debts, liabilities, or obligations; to issue bonds, notes, warrants and other evidences of indebtedness. EVMWD has the authority to collect revenues in the form of rates and charges for facilities and services provided. EVMWD has the power to levy *ad valorem* taxes, and acquire property and rights-of-way by eminent domain procedures. EVMWD is also legally empowered

to construct, operate, and maintain sewage, waste, reclamation, and storm water disposal facilities; and to acquire, construct, operate, and maintain fire protection facilities.

Demographic Forecasts

The Riverside County Center for Demographic Research (RCCDR) has developed population, household, and employment projections by census tract for Riverside County. These data are used to develop population, household, and employment projections for EVMWD’s service area. Geographic Information System (GIS) layers of EVMWD’s service area and the census tracts are used to determine which tracts fall within EVMWD’s service area. If only a portion of a tract falls within EVMWD’s service area, then estimates for population, households, and employment for that portion of the tract are pro-rated based on the total area of the census tract.

The compiled historical population by census tract and demands are projected through year 2035. The graph in **Figure 1-2** plots the trends for these variables from 2005 through 2035 for available years (2010 UMWP). Data for key points are summarized in **Table 1-1**.

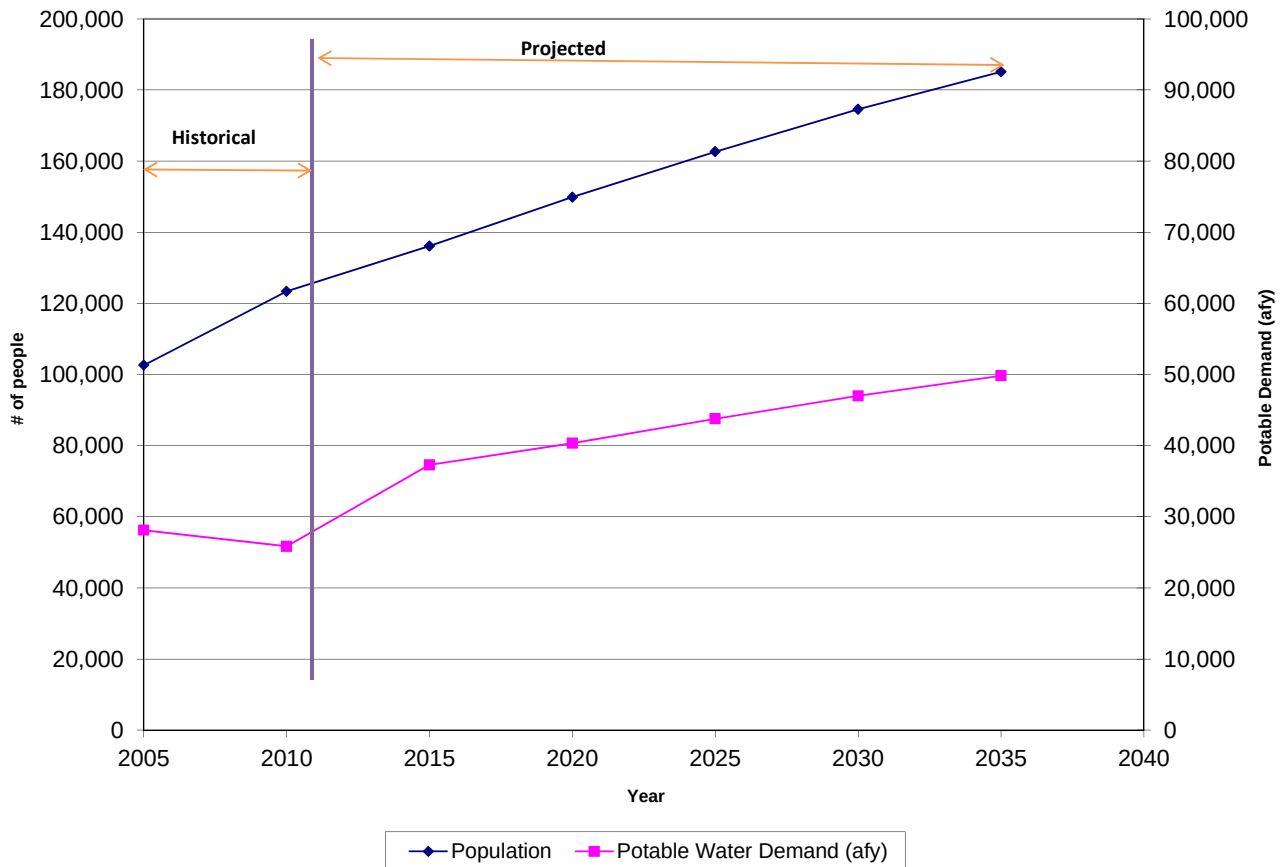


Figure 1-2
Projected Population and Demand within the EVMWD Service Area

Table 1-1
Population and Employment Forecasts

Year	2010	2015	2020	2025	2030	2035
Population	123,375	136,133	149,852	162,626	174,579	185,102
Employment	19,411	24,699	27,458	32,272	37,086	42,843

Source: Riverside County Center for Demographics Research, 2010

Elsinore Valley Municipal Water District UWMP, June 2011

Population within the Elsinore Division is projected to increase from 123,375 in 2010 to 185,102 in 2035 (2.0 percent per annum). Employment is projected to increase from 19,411 in 2010 to 42,843 in 2035 (4.6 percent per annum).

The proposed project location is shown on **Figure 1-3**. The projects are located in the northwest Lake Elsinore area just south of Interstate 15 (I-15) in the vicinity of Lake Street and Temescal Canyon Road. Based on the Alberhill Villages specific plan, this 1,400 acre development will provide 8,244 residential units, a University Town Center with 1,734,500 square feet of retail/community/office space. The development will also provide mixed use areas offering 785,000 sq. ft. of retail and service uses. Alberhill Villages will also provide a 60 acre university for 6,000 students with 1,500,000 sq. ft. of indoor facilities, an 350 student capacity elementary and 1,600 student capacity middle school, over 30 acres of open space, a 65 acre community park with lake, as well as approximately 30 acres of other parkland. The project will be completed over the next 20 to 30 years and at completion it is expected to provide housing for about 27,000 people.

The Alberhill Ridge site consists of approximately 400 acres as defined by the Brighton Alberhill Ranch Specific Plan. This site, when developed, will be a multifaceted community consisting of single family and multi family residential units, office and retail space, an elementary school, and parks and open spaces. The Alberhill Ridge site will provide 1,289 residential units and about 950,000 sq. ft. of commercial/retail space and 850 student capacity elementary school. Based on the size of the two proposed developments, a WSA is required under SB 610.

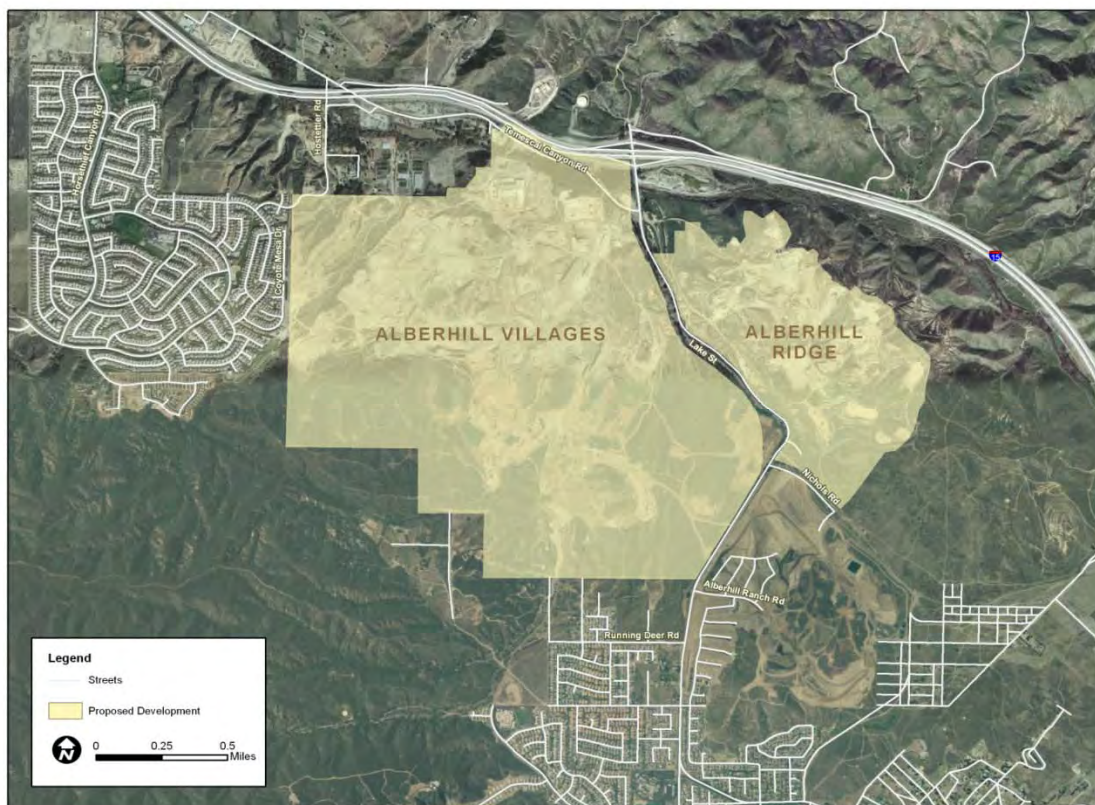


Figure 1-3
Alberhill Villages and Alberhill Ridge Projects Location

Table 1-2
Alberhill Villages and Alberhill Ridge Land-Use Plan Summary

Phasing	Specific Plan Land Use Category	Units	Commercial S.F	Students
Alberhill Villages				
0 to 5 yrs	Residential, Mixed Use ¹ , Institutional	2,694	1,734,500	UC 6000
6 to 10 yrs	Residential	1,070	392,500	0
11 to 15 yrs	Residential, Mixed Use ¹ , Institutional	1,120	380,000	MS 1600
16 to 20 yrs	Residential, Mixed Use ¹ , Institutional	3,360	0	ES 350
	TOTALS	8,244	2,507,000	8,450
Alberhill Ridge				
0 to 5 yrs	Residential, Mixed Use ¹ , Institutional	787	600,000	ES 850
6 to 10 yrs	Residential, Mixed Use ¹	502	350,000	0
	TOTALS	1,289	950,000	850

- 1 Permits a variety of regional serving commercial uses including retail, office, medical, entertainment, hotel with conference rooms and comparable uses. Residential units may be incorporated in mixed use structures or as free standing units.
- 2 UC – University, MS – Middle School, ES – Elementary School

OBJECTIVE

The purpose of this Water Supply Assessment is to evaluate whether EVMWD’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 Alberhill Villages and Alberhill Ridge projects, in addition to EVMWD’s existing and planned future water demands, including agricultural and manufacturing uses, as required by SB 610.

This WSA represents an assessment of the District’s committed demands, demands of the Alberhill Villages and Alberhill Ridge projects, and existing and projected water supplies. Nothing in this WSA constitutes a commitment to reserve water supplies to any specific development.

DOCUMENTATION

Various information and analyses were utilized for the preparation of this WSA. Based on a review of EVMWD’s current Urban Water Management Plan (UWMP)(MWH, 2011), the projected demands of the Alberhill Villages and Alberhill Ridge projects were not specifically identified in the UWMP. However, the urban growth and projected water demands associated with Alberhill Villages and Alberhill Ridge projects fall within the forecasted growth and projected water demands that are generally identified in the District’s 2010 UWMP. Accordingly, the District’s 2010 UWMP was utilized as a key source document in preparing this WSA. The UWMP demands were based on RCCDR 2010 growth projections and include the most recent demand analysis for the EVMWD service area through 2035. A WSA was

previously prepared for Alberhill Villages and Alberhill Ridge in August 2010. This WSA is an update of the information presented in 2010 WSA.

PROJECT STAFF

The following MWH staff was involved in the preparation of this Water Supply Assessment.

Principal-in-Charge:	Ajit Bhamrah, P.E.
Project Manager:	Parag Kalaria
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Technical Review:	Matthew Huang, P.E.

REPORT OVERVIEW

The sections and appendices of this WSA are organized as follows:

Section 1 provides an overview of the WSA background, objectives and scope of work.

Section 2 evaluates the EVMWD's existing and projected water demands.

Section 3 summarizes the EVMWD's existing and planned future water supply sources.

Section 4 provides a comparison of EVMWD's projected water demands and supplies. Conclusions based on the assessment of EVMWD's water demands and supplies are also included.

Appendix A contains a list of references used for this WSA.

Appendix B provides figures illustrating the Alberhill Villages and Alberhill Ridge projects site locations.

Appendix C contains a detailed land use description and water demands for Alberhill Villages and Alberhill Ridge as calculated in the KWC Engineers report of September 2009.

Appendix D contains a list of EVMWD's pending will-serve developments and associated equivalent dwelling units (EDUs).

Appendix E contains a description of the Elsinore Groundwater Basin as set forth in the California Department of Water Resources Bulletin 118.

**Table 1-3
Abbreviations**

Abbreviation:	Description:
acre-ft/yr	Acre-feet per Year
ADD	Average Day Demand
AVP	Auld Valley Pipeline
BBGSP	Back Basin Groundwater Storage Project
CAFR	Comprehensive Annual Financial Report
CEQA	California Environmental Quality Act
CFD	Community Facilities District
cfs	Cubic Feet per Second
DU	Dwelling Unit
EDU	Equivalent Dwelling Unit
EMWD	Eastern Municipal Water District
EVMWD	Elsinore Valley Municipal Water District
EWD	Elsinore Water District
FAR	Floor to Area Ratio
ft	Foot
FY	Fiscal Year
gal	Gallon
gpd	Gallons per Day
GWMP	Groundwater Management Plan
hp	Horsepower
IRP	Integrated Resources Planning
MDD	Maximum Day Demand
Metropolitan	Metropolitan Water District of Southern California
MG	Million Gallons
mgd	Million Gallons per Day
MSL	Mean Elevation Above Sea Level
O&M	Operation and Maintenance
PEIR	Program Environmental Impact Report
POA	Property Owners Association
PS	Pump Station
RCWD	Rancho California Water District
SB	Senate Bill
SCAG	Southern California Association of Governments
SF	Square Feet
SWP	State Water Project
TDS	Total Dissolved Solids
TVEDP	Temecula Valley Effluent Disposal Pipeline
TVP	Temescal Valley Pipeline
TWC	Temescal Water Company
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
Water Code	California Water Code
WDSMP	Water Distribution System Master Plan
WMWD	Western Municipal Water District
WSA	Water Supply Assessment
WSDM	Water Shortage Drought Plan
WRF	Water Reclamation Facility
WRMP	Water Resources Management Plan
WTP	Water Treatment Plant

Section 2

Water Demands

This section discusses existing and future potable and recycled water demands in EVMWD's Elsinore Division and the projected demands for the Alberhill Villages and Alberhill Ridge projects.

EXISTING WATER DEMANDS

EVMWD serves a total of 38,880 potable service connections, with an average annual demand of approximately 30,400 acre-feet per year (acre-ft/yr). In addition, EVMWD has an existing recycled water system, serving non-potable water customers from water reclamation facilities (WRF) located in the Canyon Lake and Horsethief Canyon regions. EVMWD also supplies recycled water from its Regional WRF to maintain water levels in Lake Elsinore and for supporting uses along Temescal Creek.

Existing Potable Water Demands

EVMWD's historical potable water demands (for active accounts) are presented in **Table 2-1**. The historical potable water demands are calculated using the total production from EVMWD's potable water sources: groundwater wells, surface water treated at Canyon Lake Water Treatment Plant (WTP), and imported water purchased from Metropolitan Water District of Southern California (Metropolitan). Imported water is obtained from the Western Municipal Water District (WMWD), which supplies are conveyed to the Elsinore Division through EVMWD's Temescal Valley Pipeline (TVP) and through the Auld Valley Pipeline (AVP) which is owned by the Eastern Municipal Water District (EMWD).

The historical annual water demand is normalized to remove the effects of cool wet years and hot dry years by computing the trended demand per service connection. Multiplying the normalized consumption per connection by the number of connections gives the "normal" demand for each year. The variation between the actual and normal water demands represents the range in demand due to weather variations and water conservation. Based on the water usage trends, EVMWD's existing "normal" average demand is approximated at 30,400 acre-ft/yr. Based on historical water consumption data from 1996 to 2008, dry year annual demands are estimated to be 13.1 percent higher than average year annual demands, and wet year annual demands are estimated to be 11.3 percent lower than average year demands. A maximum day demand (MDD) to average day demand (ADD) peaking factor of 2.0 is used based on EVMWD's 2008 Water Distribution System Master Plan (WDSMP). Based on a 2.0 MDD/ADD peaking factor, EVMWD's existing MDD is 54.3 million gallons per day (mgd). **Figure 2-1** shows the historical potable water demand and the normalized demand.

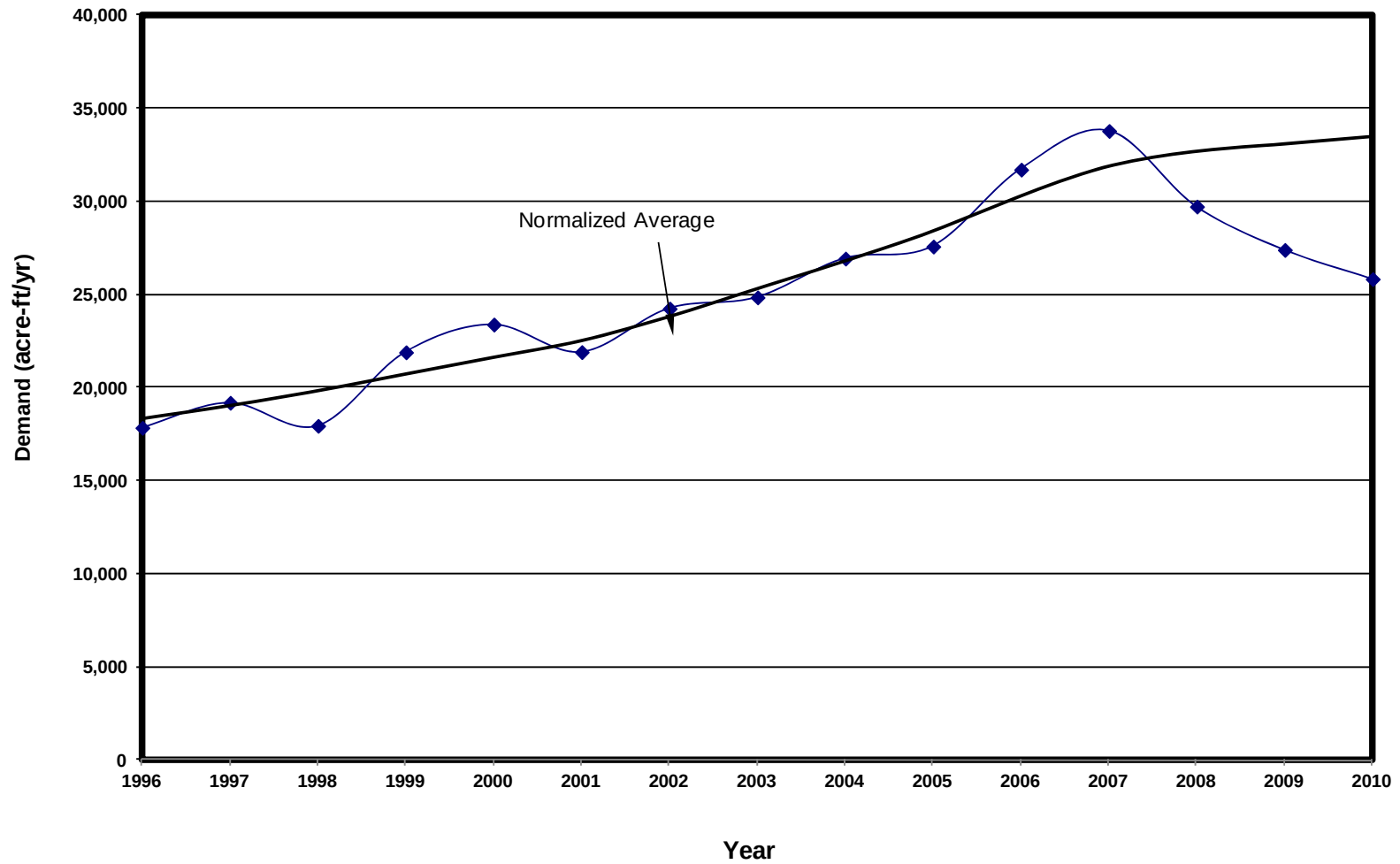


Figure 2-1
Historical Potable Water Demands

**Table 2-1
Historic Potable Water Demands**

Year ¹	Actual Potable Demands (acre-ft/yr) ²	Number of Active Service Connections ²	Demand per Connection (acre-ft/yr)	Normalized Demand per Connection (acre-ft/yr)	Normalized Potable Demands ³ (acre-ft/yr)
1996	17,848	22,029	0.810	0.8655	19,100
1997	19,195	22,781	0.843	0.8595	19,600
1998	17,953	23,704	0.757	0.8535	20,200
1999	21,902	24,717	0.886	0.8475	20,900
2000	23,392	25,668	0.911	0.8415	21,600
2001	21,915	26,671	0.822	0.8356	22,300
2002	24,251	28,176	0.861	0.8296	23,400
2003	24,851	29,876	0.832	0.8236	24,600
2004	26,939	31,553	0.854	0.8176	25,800
2005	27,584	33,418	0.825	0.8116	27,100
2006	31,713	35,544	0.892	0.8056	28,600
2007	33,792	37,367	0.904	0.7997	29,900
2008	29,729	38,099	0.780	0.7937	30,200
2009	27,402	38,505	0.712	0.7877	30,300
2010	25,837	38,886	0.664	0.7817	30,400

¹ 1996-2005 demands based on EVMWD 2008 WDSMP and 2006-2010 demands based on data provided by EVMWD.

² Based on active service connections from EVMWD 2004 and 2010 Comprehensive Annual Financial Report (CAFR).

³ Flows are normalized based on the number of service connections that year and the linear trend of usage per service connection.

Existing Recycled Water Demands

EVMWD currently has non-potable (recycled) water customers in the Canyon Hills, Canyon Lake, and Horsethief Canyon regions. Recycled water customers in the Canyon Hills and Canyon Lake regions are served with tertiary-treated recycled water from the Railroad Canyon WRF. Recycled water customers in Horsethief Canyon are served with tertiary-treated recycled water from Horsethief Canyon WRF. The entire effluent flow from these two plants is used for non-potable irrigation demands, except during wet weather, when effluent from the Railroad Canyon WRF is discharged into the on-site percolation ponds or the influent is bypassed around the Railroad Canyon WRF and sent to the Regional WRF for treatment and disposal. The excess effluent from Horsethief Canyon WRF that is not used for recycled water irrigation is sent to the Regional WRF for treatment and disposal as well. The existing recycled water demands in the Canyon Hills/Canyon Lake and Horsethief Canyon regions are approximately 418 acre-ft/yr and 31 acre-ft/yr, respectively. The Regional WRF discharges the majority of its effluent to maintain the level of Lake Elsinore usually during normal and dry years and the remaining portion into the Temescal Wash. The historical recycled water demand for the last six years is summarized in **Table 2-2**.

Table 2-2
Historical Recycled Water Demands

Year	Horsethief Canyon (acre-ft/yr) ¹	Canyon Hills/Canyon Lake (acre-ft/yr) ¹	Total Demands (acre-ft/yr)
2005	24	343	367
2006	24	340	364
2007	30	452	482
2008	33	396	429
2009	29	378	407
2010	31	418	449

¹ EVMWD actual water sales (EVMWD, 2010)

FUTURE WATER DEMANDS

For purposes of this WSA, EVMWD's future water demands comprise of the existing potable and recycled water demands as well as planned future development potable and recycled water demands.

Future Potable Water Demands

Future potable water demand stems from EVMWD's existing obligations to developers. In determining EVMWD's obligations to provide future water, the most current (as of December 13, 2011) will-serve list is used (see **Appendix D**). Will-serve letters are written commitments to provide water services to a development that are valid for a fixed time period (normally two years) and are subject to a set of conditions. Any development within the EVMWD service area regardless of its size is required to obtain a will-serve letter. EVMWD has committed to serve through will-serve letters (EVMWD, December 13, 2011) a total of 41 developments with an approximate total of 1,575 equivalent dwelling units (EDUs) as shown in Appendix D. If a development has been partially completed, then the portion of the development that has been completed is accounted for in the existing demands and the portion of the development that has not been completed is accounted for in the will-serve list. A typical single-family home is considered to be one EDU having a demand of 500 gallons per day (gpd). Conversion factors for each land-use category to EDUs are similar to the factors developed for the WDSMP (MWH, 2008) and same factors are used in District's 2010 UWMP (MWH, 2011) as shown in **Table 2-3**. Thus, the total average will-serve potable demand is approximated to be 1,000 acre-ft/yr. To ensure a conservative estimate, it is assumed that all of the will-serve demand will be served by potable water.

Proposed developments that have not obtained a will-serve letter or other written agreement that commits EVMWD to serve a particular development are not included in the future demand projections, including developments that may have had a WSA in the past. However, the urban growth and projected water demands associated with Alberhill Villages and Alberhill Ridge projects and previously completed Diamond Specific WSA fall within the forecasted growth and projected water demands that are generally identified in the District's 2010 UWMP. Thus the projected demand identified in the UWMP at year 2035 is much higher than the projected

demands identified in this WSA as UWMP demand based on population projection includes other projects apart from Alberhill Villages and Alberhill Ridge. **Figure 2-2** below shows the comparison of the planned future demands identified in this WSA, and Projected demands identified in 2010 UWMP.

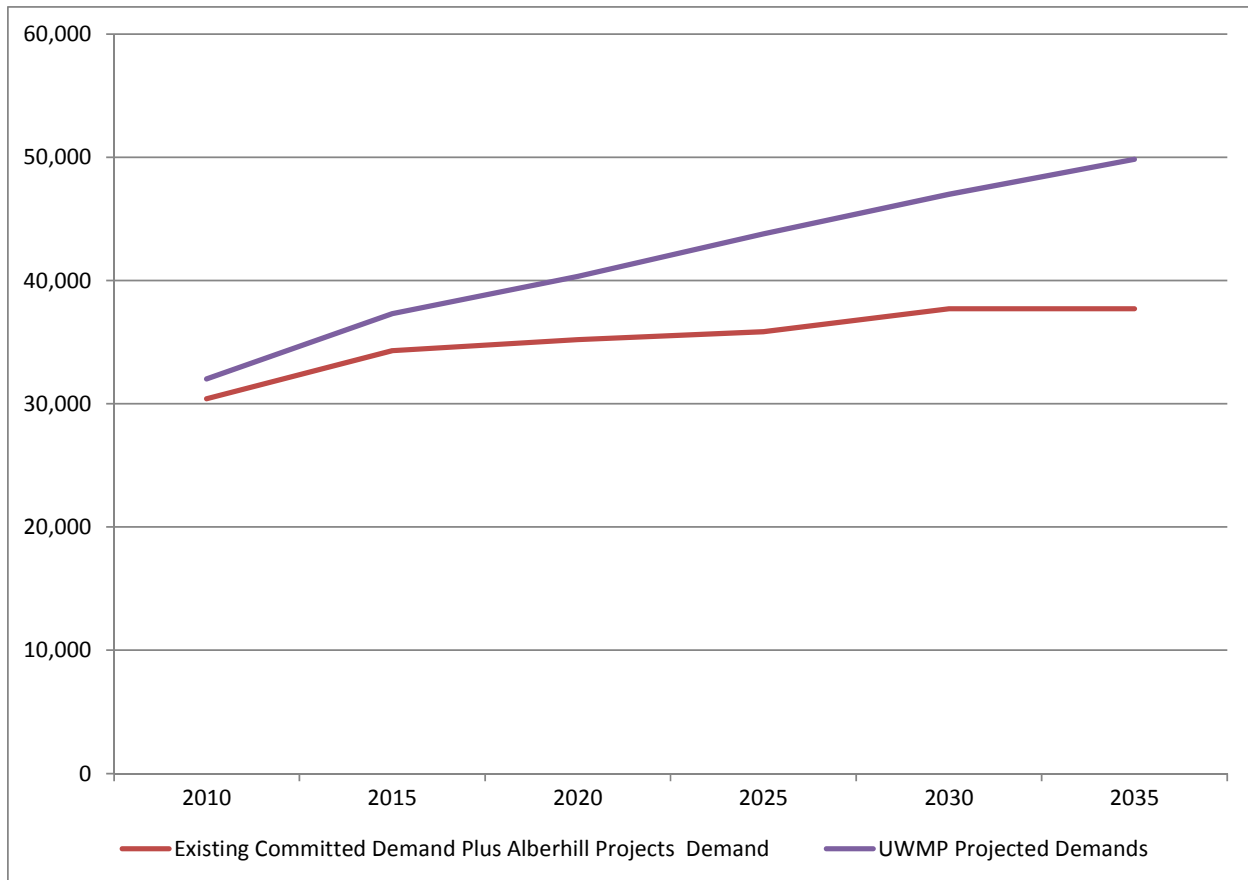


Figure 2-2
Summary of Projected Demands

EVMWD's total service connections contain both active and inactive accounts. Active accounts are considered to have existing demand associated with them for water service provided by EVMWD. Inactive accounts are not considered to have existing demand though they are connected to EVMWD's water system. For a conservative future demand estimate, all inactive accounts are assumed to become active in the future. Each inactive account is assumed to equal one EDU and to have a duty factor of 500 gpd/EDU (2010 UWMP). Based on 2,901 inactive accounts as of July 29, 2010 (based on data obtained from EVMWD staff), it is projected that the total average inactive account potable demand is approximately 1,600 acre-ft/yr.

**Table 2-3
Water Duty Factors**

Land Use Category	Water Duty Factor ¹	Duty Factor Unit	Conversion to EDU	EDU Conversion Unit
Low Density Residential	750	gpd/DU	1.5	DU/EDU
Medium Density Residential	500	gpd/DU	1.0	DU/EDU
High Density Residential ²	350	gpd/DU	0.7	DU/EDU
General Commercial	2,500	gpd/acre	5.0	acre/EDU
School	4,000	gpd/acre	8.0	acre/EDU
Parks/Landscaping	4,000	gpd/acre	8.0	acre/EDU
Hotels/Inn	100	gpd/room	0.2	room/EDU

¹ Based on EVMWD WDSMP (2008).

² A range of 12-24 DU/acre is assumed (EVMWD WDSMP, 2008).

Based on the existing developer agreement between EVMWD and Laing - CP Lake Elsinore, LLC (Laing), EVMWD is entitled to provide water (600 acre-ft/yr) and therefore water is reserved for this development in this WSA. The Summerly Development consists of 1,484 EDUs with an assumed water duty factor of 500 gpd/EDU; using the above methodology, the future average (potable) water demand for this development is approximately 600 acre-ft/yr.

A portion of the existing potable water demand will be converted to recycled water in future phases. For example, Phase 1 (Wildomar) and Phase 1a (Tuscany) are planned to be constructed within the next five years with a conversion of approximately 1,200 acre-ft/yr (EVMWD, June 2009). In addition, a golf course as part of the Summerly Development (Phase 1) currently uses a mixture of its own private well water and potable water supplied by EVMWD. It is assumed that the entire golf course will be converted to recycled water (approximately 300 acre-ft/yr) in the future and this amount is included in the 1,200 acre-ft/yr of total demand that is planned to be converted to recycled water service.

It is projected that the EVMWD's future average committed potable water demand (without Alberhill Village and Alberhill Ridge Projects) is 32,300 acre-ft/yr, which is an increase of approximately 6 percent over existing demands as shown in **Table 2-4**. The future potable MDD is projected to be approximately 56.9 mgd.

Table 2-4
Potable Water Future Demand Projections (without Alberhill Villages and Alberhill Ridge Development)

Demand Category	ADD (acre-ft/yr)	MDD (MGD)¹	Wet Year Demand (acre-ft/year)²	Dry Year Demand (acre-ft/yr)²
Existing Demands	30,400	54.3	27,000	34,400
Inactive Account Demands (Future) ³	1,600	2.9	1,400	1,800
Will-Serve Demands (Future) ⁴	900	1.6	800	1,000
Summerly Development (Future)	600	1.1	500	700
Recycled Water Conversions (Future) ⁶	(1,200)	(3.0)	(1,100)	(1,400)
Total Demand	32,300	56.9	28,600	36,500

¹ An ADD to MDD peaking factor of 2.0 is used (EVMWD 2010 UWMP.).

² Based on historical potable water demands, wet and dry year demands differ by 11.3 and 13.1 percent of average demands, respectively.

³ Calculated based on inactive accounts (2,901) as of July 29, 2010 (EVMWD) with an assumed EDU of 2,901. A water duty factor of 500 gpd/EDU is assumed.

⁴ Calculated based on EVMWD's Will-Serve list (EVMWD, July 2010) with total EDUs of approximately 1,575. A water duty factor of 500 gpd/EDU is assumed.

⁵ Based on the developer agreement between EVMWD and Laing developer.

⁶ According to Letter from EVMWD to the State Water Resources Control Board on June 1, 2009, the future recycled water conversion demand (Phase 1 and 1a) is approximately 1,200 acre-ft/year. There are existing users that currently use potable water to irrigate. These existing potable water users will be converted to recycled water in the future. The Summerly (Golf Course) demand (approximately 300 acre-ft/yr) is included in the total. An ADD to MDD peaking factor of 2.77 is used (Kennedy-Jenks Wildomar Recycled Water Master Plan, 2004) since the majority of this demand is used for irrigation.

Future Recycled Water Demands

EVMWD currently serves customers in Canyon Hills/Canyon Lake and Horsethief Canyon regions with recycled water. EVMWD plans to expand its non-potable water system in the Wildomar, Tuscany Hills, and Summerly (Golf Course) regions in phases. The future average recycled water demand is projected to increase by approximately 1,200 acre-ft/yr. The entire demand will constitute potable to recycled water conversions that will occur within the next five years. (EVMWD Letter, June 2009). Recycled water demands for irrigation are assumed to have a MDD to ADD peaking factor of 2.77 based on evapotranspiration and rainfall patterns (Wildomar Recycled Water Master Plan, Kennedy-Jenks, 2004).

EVMWD is projected to provide the Canyon Hills Development with 100 percent of total projected future recycled water demand. The Canyon Hills Development consists of 4,146 EDUs and based on the Canyon Hills Water/Sewer Master Plan (MetroPointe Engineers, 2000) the projected recycled water demand is approximately 420 acre-ft/yr. The Canyon Hills Development recycled water demand is assumed to be already existing and accounted for in **Table 2-2**.

It is projected that future recycled water demands will increase due to recycled water conversions in the Wildomar, Tuscany Hills, and Summerly (Golf Course) areas as shown in **Table 2-5**.

Table 2-5
Recycled Water Future Demand Projections (without Alberhill Villages and Alberhill Ridge)

Demand Category	ADD (acre-ft/yr)	MDD (MGD) ¹	Wet Year Demand (acre-ft/year) ²	Dry Year Demand (acre-ft/yr) ²
Existing Demands	450	1.1	400	510
Inactive Account Demands (Future) ³	0	0.0	0	0
Will-Serve Demands (Future) ⁴	0	0.0	0	0
Recycled Water Conversions (Future) ⁵	1,200	3.0	1,060	1,360
Summerly Development (Future) ⁶	0	0.0	0	0
Total Demand	1,650	4.1	1,460	1,870

¹ An ADD to MDD peaking factor of 2.77 is used (Kennedy-Jenks Wildomar Recycled Water Master Plan, 2004).

² Based on historical potable water demands, wet and dry year demands differ by 11.3 and 13.1 percent of average demands, respectively.

³ It is assumed that all of the inactive account demands are potable and none are recycled.

⁴ It is assumed that all of the will-serve demands are potable and none are recycled.

⁵ According to the Letter from EVMWD to the State Water Resources Control Board on June 1, 2009, the future recycled water conversion demand (phase 1 and 1a) is approximately 1,200 acre-ft/year. There are existing users that currently use potable water to irrigate. These existing potable water users will be converted to recycled water in the future. The Summerly (Golf Course) demand (approximately 300 acre-ft/yr) is included in the total.

⁶ Currently the Summerly Development project does not have a recycled water fee credit, thus, it is assumed at this time that the project has zero recycled water demand in the future. The Summerly (Golf Course) is existing and assumed to be converted to recycled water in the future (see note 5).

Alberhill Villages and Alberhill Ridge Demands

As described in Section 1, the Alberhill Villages project consists of residential, institutional, recreational open space, as well as mixed use (residential/commercial/retail/office space) type development spread over 1,400 acres. The Alberhill Ridge project consists of residential (single family & multi family), commercial/retail and recreational open space type land use over 400 acres. Detailed land use description for Alberhill Villages and Alberhill Ridge projects are presented in **Appendix C**. A report titled “Alberhill Villages Specific Plan” discussing the water demands and infrastructure needs for the proposed projects was prepared by Project design Consultants and KWC Engineers in December 2011. The proposed projects demands presented in **Table 2-6** are based on water demands calculated in the KWC Engineers report of September 2009 (see **Appendix C** for more details). The total average potable water demand for the Alberhill Villages and Alberhill Ridge Developments is 5,300 acre-ft/yr as shown in **Table 2-6**. The wet and dry year demands for the Alberhill Villages and Alberhill Ridge Developments are also shown in **Table 2-6**. As described earlier, it is assumed that dry year demand is 13.1 percent higher than the average annual demands and wet year demand is 11.3 percent lower than the average annual demands. At this time, it is assumed that the proposed projects will utilize recycled water (convert from potable) as and when available to them in the future. Thus, the recycled water demands (resulting in offsets for potable demand) for the proposed projects are not accounted separately under this WSA.

Table 2-6
Alberhill Villages and Alberhill Ridge Development Potable Water Demand Projections

Development	ADD (acre-ft/yr)	MDD ¹ (MGD)	Wet Year Demand (acre-ft/yr) ²	Dry Year Demand (acre-ft/yr) ²
Alberhill Villages	4,500	8.06	4,000	5,100
Alberhill Ridge	800	1.46	700	900
Total Demand	5,300	9.52	4,700	6,000

¹ An ADD to MDD peaking factor of 2.0 is used (Preliminary Water Facilities Plan for Pacific Clay & Alberhill Ridge, KWC Engineers, September 2009).

² Based on historical potable water demands, wet and dry year demands are 11.3 percent lower than ADD and 13.1 percent higher than ADD, respectively.

SUMMARY OF FUTURE DEMANDS

Combining the existing and future potable water demands yields a total future average potable water demand of 32,300 acre-ft/yr without the Alberhill Villages and Alberhill Ridge Development and 37,600 acre-ft/yr with the Alberhill Villages and Alberhill Ridge Development, as shown in **Table 2-7** and **Table 2-8**. Combining the existing and future recycled water demands yields a total future average recycled water demand of 1,650 acre-ft/yr with and without the Alberhill Villages and Alberhill Ridge projects (as a conservative measure, assumes zero recycled water demand for the proposed projects) as shown in **Table 2-9**. Wet year demands are assumed to be 11.3 percent lower than ADD and dry year demands are assumed to be 13.1 percent higher than ADD. **Table 2-10** summarizes EVMWD's total future water demands with the Alberhill Villages and Alberhill Ridge Development. The total future water demands means future demands associated with "planned future uses" according to will-serve commitments, and not the forecasted demands associated with growth as projected in the 2010 UWMP. The Alberhill projects and Diamond specific projects are the type and part of the growth forecasted in the 2010 UWMP, which concluded long-term water supply sufficiency within the District over the next 20-year horizon .

Table 2-7
Summary of Existing and Future Potable Water Demand (with Alberhill Villages and Alberhill Ridge Development)

Demand Category	ADD (acre-ft/yr)	MDD ¹ (MGD)	Wet Year Demand (acre-ft/yr) ²	Dry Year Demand (acre-ft/yr) ²
Existing Demands	30,400	54.3	27,000	34,400
Inactive Account Demands (Future) ³	1,600	2.9	1,400	1,800
Will-Serve Demands (Future) ⁴	900	1.6	800	1,000
Recycled Water Conversions (Future) ⁵	(1,200)	(3.0)	(1,100)	(1,400)
Summerly Development (Future)	600	1.1	500	700
Alberhill Villages and Alberhill Ridge (Future)	5,300	9.5	4,700	6,000
Total Demand	37,600	66.4	33,300	42,500

¹ An ADD to MDD peaking factor of 2.0 is used (EVMWD 2010 UWMP).

³ Based on historical potable water demands, wet and dry year demands differ by 11.3 and 13.1 percent of average demands, respectively.

³ Calculated based on inactive accounts (2,901) for the Elsinore Division of EVMWD as of October 14, 2009 (EVMWD) with an assumed EDU of 2,901. A water duty factor of 500 gpd/EDU is assumed.

⁴ Calculated based on EVMWD's Will-Serve list (EVMWD, December 13, 2011) with an EDU of approximately 1,575. A water duty factor of 500 gpd/EDU is assumed.

⁵ According to the Letter from EVMWD to the State Water Resources Control Board on June 1, 2009, the future recycled water conversion demand (phase 1 and 1a) is approximately 1,200 acre-ft/year. There are existing users that currently use potable water to irrigate. These existing potable water users will be converted to recycled water in the future. The Summerly (Golf Course) demand (approximately 300 acre-ft/yr) is included in the total. An ADD to MDD peaking factor of 2.77 is used (Kennedy-Jenks Wildomar Recycled Water Master Plan, 2004) since the majority of this demand is used for irrigation.

⁶ Approximately 73.7 percent of the total Summerly Development potable demands due to the fee credit that EVMWD issued the developer (EVMWD and Laing Developer's Agreement, 2008).

Table 2-8
Summary of Future Potable Water Demand

Demand Category	ADD (acre-ft/yr)	MDD (MGD) ¹	Wet Year Demand (acre-ft/yr) ²	Dry Year Demand (acre-ft/yr) ²
With Alberhill Villages and Alberhill Ridge Development	37,600	66.4	33,300	42,500
Without Alberhill Villages and Alberhill Ridge Development	32,300	56.9	28,600	36,500

¹ An ADD to MDD peaking factor of 2.0 is used (EVMWD WDSMP, 2008).

² Based on historical potable water demands, wet and dry year demands are 11.3 percent below and 13.1 percent above average demands, respectively.

Table 2-9
Summary of Existing and Future Recycled Water Demands (with Alberhill Villages and Alberhill Ridge Development)

Demand Category	ADD (acre-ft/yr)	MDD¹ (MGD)	Wet Year Demand (acre-ft/yr)²	Dry Year Demand (acre-ft/yr)²
Existing Demands	450	1.1	400	510
Inactive Account Demands (Future) ³	0	0.0	0	0
Will-Serve Demands (Future) ⁴	0	0.0	0	0
Recycled Water Conversions (Future) ⁵	1,200	3.0	1,060	1,360
Summerly Development (Future) ⁶	0	0.0	0	0
Alberhill Villages and Alberhill Ridge Development (Future) ⁷	0	0.0	0	0
Total Demand⁸	1,650	4.1	1,460	1,870

¹ An ADD to MDD peaking factor of 2.77 is used (Kennedy-Jenks Wildomar Recycled Water Master Plan, 2004).

² Based on historical potable water demands, wet and dry year demands differ by 11.3 and 13.1 percent of average demands, respectively.

³ It is assumed that all of the inactive account demands are potable and none are recycled.

⁴ It is assumed that all of the will-serve demands are potable and none are recycled.

⁵ According to the Letter from EVMWD to the State Water Resources Control Board on June 1, 2009, the future recycled water conversion demand (phase 1 and 1a) is approximately 1,200 acre-ft/year. There are existing users that currently use potable water to irrigate. These existing potable water users will be converted to recycled water in the future. The Summerly (Golf Course) demand (approximately 300 acre-ft/yr) is included in the total.

⁶ Based on the agreement between EVMWD and Laing - CP Lake Elsinore, LLC (Laing), Laing has a potable water fee credit of approximately 73.7 percent. However, Laing Currently the Summerly Development project does not have a recycled water fee credit, thus, it is assumed at this time that the project has zero recycled water demand in the future. The Summerly (Golf Course) is existing and assumed to be converted to recycled water in the future (see note 5).

⁷ To ensure a conservative analysis, it is assumed that all of the Alberhill Villages and Alberhill Ridge Development demands are potable and none are recycled.

⁸ Total Demands are rounded to nearest 100.

Table 2-10
Summary of Future Demands with Alberhill Villages and Alberhill Ridge Development

Demand Category	ADD (acre-ft/yr)	MDD (MGD)	Wet Year Demand (acre-ft/yr)¹	Dry Year Demand (acre-ft/yr)¹
Potable Demands ²	37,600	66.4	33,300	42,500
Recycled Demands ³	1,650	4.1	1,400	1,900
Total Demand	39,300	70.5	34,700	44,400

¹ Based on historical potable water demands, wet and dry year demands are 11.3 percent below and 13.1 percent above average demands, respectively.

² An ADD to MDD peaking factor of 2.0 is used (EVMWD 2010 UWMP).

³ An ADD to MDD peaking factor of 2.77 is used (Kennedy-Jenks Wildomar Recycled Water Master Plan, 2004).

Section 3

Water Supply Sources

The following section outlines EVMWD's current and projected water supplies based on information contained in its most recently adopted UWMP (MWH, 2011), the Water Resources Master Plan (WRMP), and the Ground Water Management Plan (GWMP). This includes a description of the capacity of each water supply source in average/normal year, wet year, single dry year and multiple dry years and a discussion of EVMWD's plans for future water supply development. In addition, the ability of each supply source to meet current and projected maximum day demand is identified.

As required by Water Code Section 10910(d), this section identifies EVMWD's existing water supply entitlements, water rights, or water service contracts, and describes the quantities of water received in prior years by EVMWD under these agreements. EVMWD is relying on the Metropolitan Water District of Southern California (Metropolitan) Integrated Resources Plan (IRP) dated October 2010, MWD 2010 Regional UWMP and 2010 EVMWD UWMP for the reliability of imported water supplies. EVMWD has adopted the same definitions for single and multiple dry years as used in the Metropolitan reports.

EXISTING POTABLE WATER SUPPLIES

EVMWD obtains its potable water supplies from local groundwater, local surface water from Canyon Lake, and imported water. The locations of these sources are presented in **Figure 3-1**. **Table 3-1** summarizes EVMWD's available water supplies to meet peak demands during average/normal, single-dry, multiple-dry, and wet years. **Table 3-2** summarizes the available water supplies to meet average annual demands during average/normal, single-dry, multiple-dry, and wet years.

For this Water Supply Assessment, the following definitions are utilized for average/normal, single-dry, multiple-dry, and wet years:

- Average/normal year – Statistical average of 50 years of historical hydrologic observations.
- Single dry year – A repeat of the 1977 hydrologic conditions, except where noted.
- Multiple dry years – A repeat of the 1990 – 1992 multi-year drought condition that occurred twice in the past 77 years.
- Wet year – A repeat of the 1998 above normal hydrologic condition.

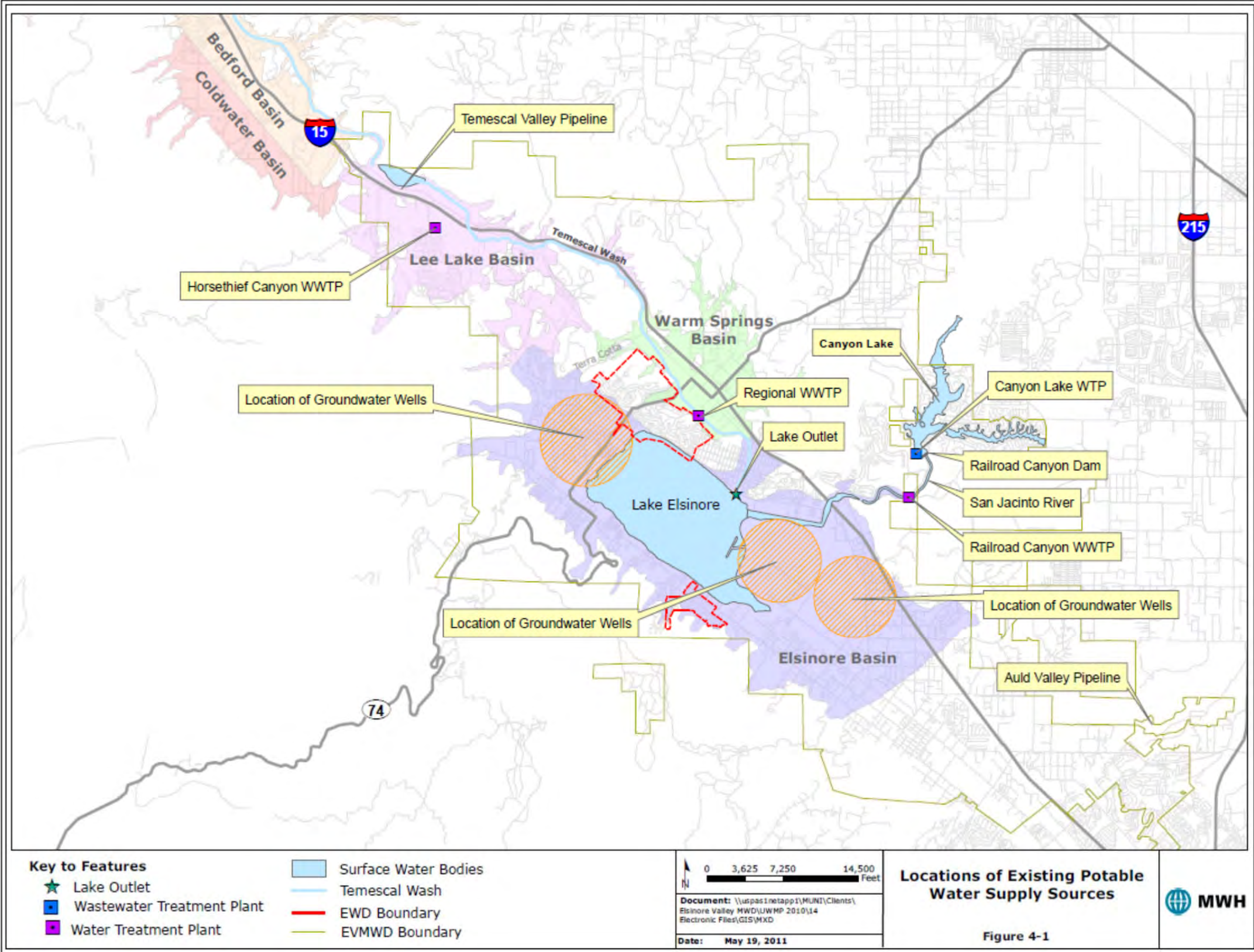


Figure 3-1
Existing Water Supply Sources

Section 3 – Water Supply Sources

Figure 3-2 graphs the annual production of each supply source for the period 1992 to 2010. However, over the past few years with the implementation of Back Basin groundwater storage projects, EVMWD has progressed in reducing groundwater pumping to an amount approximately equal to the natural recharge in the basin. Local surface water supplies can be variable and dependent on local runoff conditions. Imported water deliveries have increased significantly in the last five years in response to growth trends.

Table 3-1
Available Existing Water Supplies for Maximum Day Demands

Water Supply Source	Units are in mgd					Comments
	Capacity	Average Year	Single-Dry Year	Multiple-Dry Years	Single Wet Year	
Canyon Lake	7.0	7.0	7.0	7.0	7.0	Assumes WTP is operational in all years
Groundwater	15.4	15.4	15.4	15.4	15.4	Full well capacity
TVP	12.7	12.7	12.7	12.7	12.7	12.7 mgd capacity of TVP without pumping
AVP	24.2	24.2	24.2	24.2	24.2	Source can be used at full capacity
Total Potable Supplies	59.3	59.3	59.3	59.3	59.3	

Source: Final Groundwater Management Plan (MWH, 2005b) and EVMWD 2010 UWMP

Note: 1) To meet the MDD conditions, the Canyon Lake WTP is run at full capacity as raw water can be purchased from MWD.

Table 3-2
Available Existing Water Supplies for Average Annual Demands

Water Supply Source	Units are in acre-ft/yr					Comments
	Capacity	Average Year	Single-Dry Year	Multiple-Dry Years	Single Wet Year	
Canyon Lake	8,000	4,900	2,500	3,000	8,000	
Groundwater Extraction ⁶	17,300	3,700	11,300	10,000	3,400	
Groundwater Injection	(7,600)	(6,100)	0	0	(6,900)	
TVP ⁴	14,200	12,700	12,700 ¹	12,700 ¹	12,700	12.7 mgd capacity of TVP without pumping
AVP ⁴	27,000	22,500	18,500 ^{2, 3}	18,500 ^{2, 3}	22,500	Source can be used at full capacity
Total Potable Supplies	66,500	43,800	45,000	44,200	46,600	

Source: EVMWD 2010 UWMP.

1) Accounts for 83% of TVP capacity.

2) Accounts for 83% of AVP capacity.

3) Based on Metropolitan's agreement with EVMWD on groundwater storage program (Elsinore Basin Conjunctive Use Program), 4,000 acre-ft/yr is deducted from Metropolitan's deliveries to EVMWD during single dry year & multiple dry years.

4) Refer to page 3-12 for detail explanation on capacity of TVP and AVP connections.

5) Numbers are rounded to nearest 100

6) To improve the groundwater stability, groundwater is injected during average years and wet years and is extracted during dry and multiple dry years.

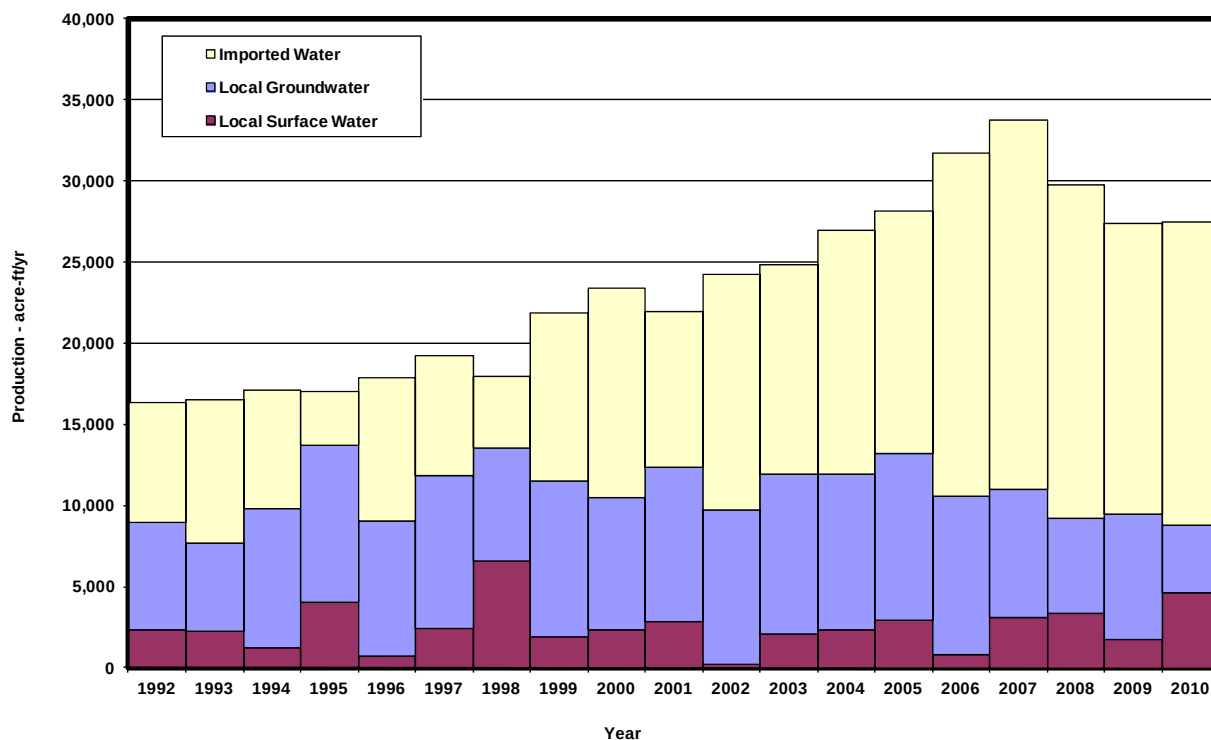


Figure 3-2
Historical Water Production by Source

Groundwater

EVMWD has access to groundwater from three main sources – Elsinore Basin, Temescal Valley groundwater basins and Bunker Hill/Riverside groundwater basins.

Elsinore Basin Groundwater

The Elsinore Groundwater Basin is the major source of groundwater supply for EVMWD, and private groundwater producers. The Elsinore Basin is located in a graben (a down-dropped geologic block) created by two major fault zones: the Glen Ivy Fault Zone to the northeast and the Wildomar Fault Zone to the southeast. The groundwater basin encompasses approximately 25 square miles of valley fill including Lake Elsinore, which covers about 3,600 acres of the basin. The surface water drainage area tributary to the basin consists of 42 square miles of mountain and valley area. Major streams include McVicker Canyon, Leach Canyon, Dickey Canyon, and the San Jacinto River which drain into Lake Elsinore and provide a portion of the basin recharge. **Figure 3-3** presents the location of the groundwater basin, the tributary watershed that drains into the basin, surrounding streams and other bodies of water.

The California Department of Water Resources has designated the Elsinore Basin as Basin No. 8-4 and is located within the Santa Ana River watershed. Information on the basin from DWR Bulletin 118 California's Groundwater (January 2006) including a description of the basin is

presented in **Appendix E**. The groundwater well locations are shown in **Figure 3-1** and all wells are located within Elsinore Basin.

EVMWD prepared a groundwater management plan (GWMP) for the Elsinore Basin pursuant to the California Water Code § 10750 *et seq.* This plan was adopted by the EVMWD Board of Directors on March 24, 2005. The GWMP presents detailed information on the Elsinore Basin including a plan to reduce the overdraft and improve groundwater supply reliability. Direct recharge projects that utilize the groundwater basin as a storage facility and allow for the extraction of stored water for use during drought and high demand periods were identified, designed, and constructed. These direct recharge projects were funded by the Metropolitan as part of a groundwater storage program. During any fiscal year (beginning on July 1st and ending on June 30th) Metropolitan may deliver up to 3,000 acre-ft of water for storage in the Elsinore Basin. EVMWD's dual-purpose wells are used to inject these deliveries in the Elsinore Basin. Metropolitan may also extract up to 4,000 acre-ft of water stored in the Elsinore Basin as part of the Groundwater Storage Program provided that much amount of water is stored by MWD in the Elsinore Basin. During a fiscal year when stored Metropolitan deliveries are extracted, supply from the EVMWD's imported water sources is reduced by an equal amount (EVMWD 2010, UWMP).

The GWMP also summarizes inflows to the Elsinore Basin which include infiltration of local precipitation, runoff from the surrounding watershed, infiltration from the San Jacinto River prior to reaching Lake Elsinore, and return flows from either irrigation or domestic use. Groundwater inflows are estimated to average 5,500 acre-ft/yr based on a 41-year (1961-2001) hydrologic analysis conducted for the GWMP. This natural inflow is roughly equal to the average yield of the basin because there are no natural outflows from the basin. Groundwater pumping to meet water demands accounts for essentially the entire outflow from the basin. Active groundwater management and conjunctive use programs have been implemented by EVMWD to balance the Elsinore Basin inflows and outflows. DWR Bulletin 118 does not identify the Elsinore Basin to be in a state of overdraft.

EVMWD has seven operating potable groundwater wells with a total capacity of 15.4 million gallons per day (mgd) as presented in **Table 3-3**. This includes the capacity of Diamond and Summerly Wells which were equipped in 2008. Joy Street, Lincoln Street and Machado wells are all blended together to comply with arsenic maximum containment level. The total of seven wells does not include Cereal 1 and Corydon Street wells which stopped production in 2008 due to high arsenic. Cereal 3 and 4 wells are treated at the Back Basin Treatment Plant for arsenic removal. EVMWD constructed a pipeline in 2011 from the Diamond and Summerly wells to blend with the Cereal 1 and Corydon Street wells to comply with the arsenic maximum containment level.

Groundwater supplied 20 to 44 percent of EVMWD demands in the past ten years. **Table 3-4** summarizes EVMWD's wells total production in the last seven years. Over the past few years EVMWD has actively implemented groundwater management to ensure the long-term, sustainable yield of the basin.

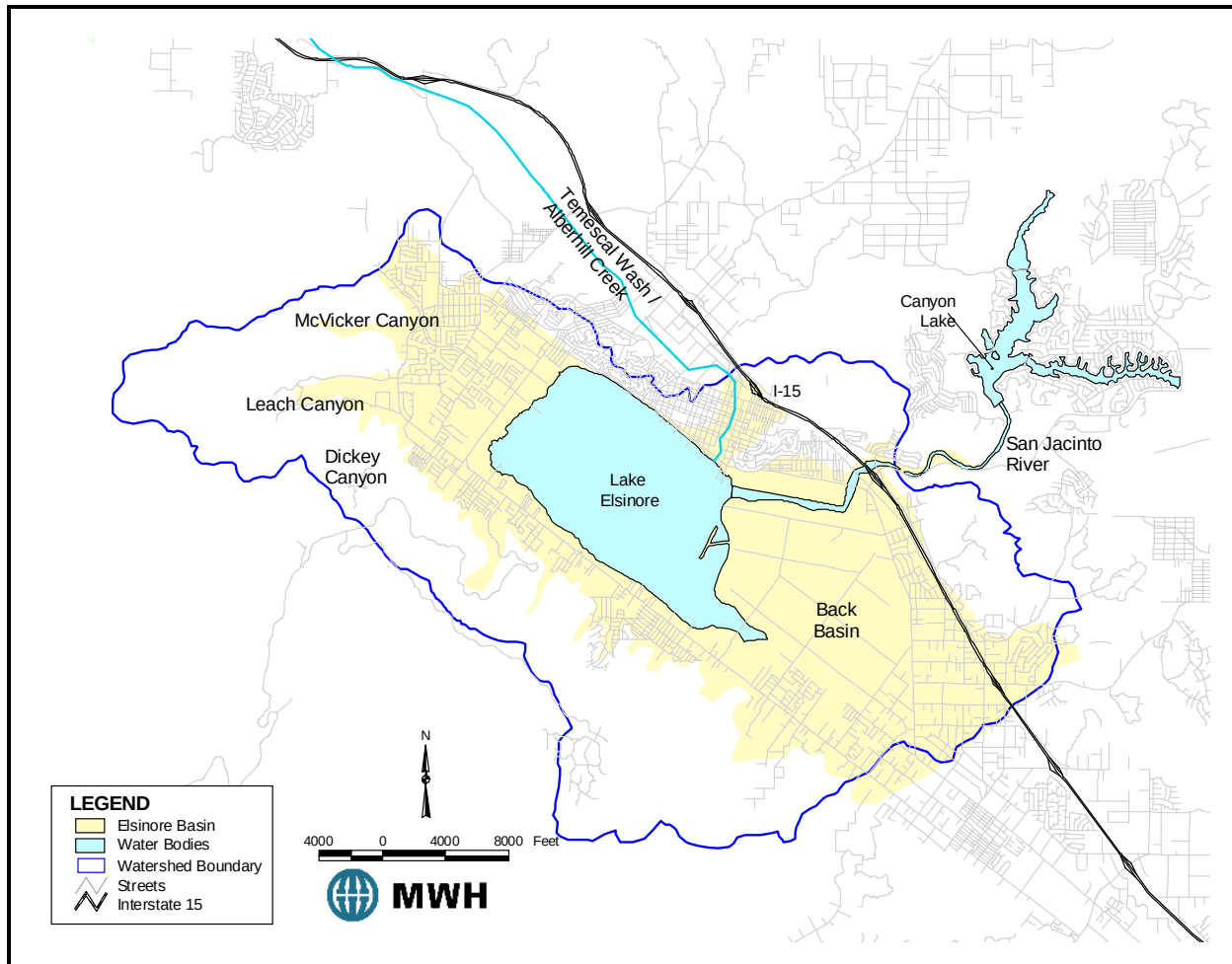


Figure 3-3
Elsinore Groundwater Basin

Table 3-3
Existing Active EVMWD Groundwater Wells Production Capacity

Groundwater Well	Capacity	
	(gpm)	(mgd)
Cereal St # 3	2,000	2.9
Cereal St # 4	2,000	2.9
Joy St	1,000	1.4
Lincoln St	800	1.2
Machado	1,250	1.8
Summerly	1,790	2.6
Diamond	1,780	2.6
Total	10,620	15.4

Source: EVMWD 2010 UWMP, Water Supply Optimization (MWH, 2009)

Section 3 – Water Supply Sources

Table 3-4
EVMWD Groundwater Wells Production

(Units are in acre-ft)

Groundwater Well	2003	2004	2005	2006	2007	2008	2009	2010	Average
Cereal St # 1	978	1,457	1,040	1,098	1,451	700	0	0	960
Cereal St # 3	1,309	888	1,919	2,300	914	130	1,320	670	1,254
Cereal St # 4	2,293	1,964	2,024	1,834	1,040	591	1,625	902	1,625
Corydon St	939	1,486	1,368	1,395	1,100	449	0	0	962
Joy St	1,160	1,353	1,230	1,202	1,048	728	654	184	1,054
Lincoln St	604	439	612	285	441	664	393	114	491
Machado	1,915	1,686	1,699	1,672	1,400	1,475	1,422	740	1,610
Palomar St	358	335	391	0	0	0	0	0	155
Summerly Well	0	0	0	0	457	575	1,142	516	311
Diamond Well	0	0	0	0	0	592	1,231	972	260
Total - Potable	9,555	9,606	10,284	9,786	7,852	5,904	7,786	4,133	8,682

Reference: EVMWD Monthly Production Sheets provided by EVMWD staff. All data shown are for calendar years.

Water rights for the Elsinore Groundwater Basin are not adjudicated (MWH, 2005b). According to the GWMP, approximately 99 percent of groundwater produced by the basin is pumped by EVMWD and its predecessor agencies. Local pumpers with private wells only account for less than one percent of basin production (MWH, 2005b). Water is generally pumped from two regions of the Elsinore Basin, in regions to the north and south of Lake Elsinore, commonly called the North Basin and the Back Basin.

The GWMP identified conjunctive use projects as an important element of basin management. Conjunctive use is the coordinated operation of surface, imported and groundwater supplies to maximize supply reliability. Direct recharge projects that utilize the groundwater basin as a storage facility and allow for the extraction of stored water for use during drought and high demand periods were identified, designed, and constructed. The construction of two wells, Summerly and Diamond, were funded by Metropolitan as part of a groundwater storage program. Under this program, during any fiscal year (beginning on July 1st and ending on June 30th) Metropolitan may deliver up to 3,000 acre-ft/yr of water for storage in the Elsinore Basin, the maximum storage amount is 12,000 acre-ft. The District's dual-purpose wells are used to inject these deliveries in the Elsinore Basin. Availability of water for injection under this program is contingent upon Metropolitan having surplus imported supplies. Imported water can only be used for groundwater storage during low demand periods when sufficient imported water and local surface water supplies treated at the Canyon Lake WTP are available to meet water system demands as well as storage needs.

As part of this program, during any fiscal year, Metropolitan may extract up to 4,000 acre-ft/yr of water stored in the Elsinore Basin as part of the Groundwater Storage Program. When stored Metropolitan deliveries are extracted, supply from the District's imported water sources is reduced by an equal amount.

Surface Water

The second water supply source for EVMWD is surface water obtained from Canyon Lake, also referred to as the Railroad Canyon Reservoir. Canyon Lake was constructed in 1928 by the TWC to store water for agricultural use in the area. Formed by Railroad Canyon Dam, Canyon Lake impounds water from the San Jacinto River, Salt Creek and local surface runoff. With a spillway elevation of 1381.76 ft msl, the reservoir originally had a capacity of about 12,000 acre-ft. However, siltation has decreased the capacity of the lake. Based on information in the WDSMP, Canyon Lake's current storage capacity is approximately 4,600 acre-feet (1,500 MG). The lake is being dredged to restore a portion of the lost capacity. The Railroad Canyon Storage Agreement between EVMWD and TWC that was approved in October 1955 allowed EVMWD to store approximately 3,000 acre-feet of water in Canyon Lake and treat that water at the Canyon Lake Water Treatment Plant (WTP) before distribution. In August 1989, EVMWD acquired the assets and water rights of the TWC including Canyon Lake. The Canyon Lake Property Owners Association (POA) leases the surface rights to the lake and fringe land around the lake for recreational purposes under an agreement dating from 1968. The lease agreement between EVMWD and the Canyon Lake POA requires that the minimum lake elevation be kept at 1,372 ft msl at any time of the year. EVMWD typically discontinues operation of its WTP if the lake level is expected to drop below 1,372 ft. If the level falls below 1,372 feet, EVMWD is required to purchase Metropolitan water to maintain the minimum lake elevation. During fiscal year 2001-02, the EVMWD purchased 1,055 acre-feet of imported water to maintain the level of the lake at the contractually specified level.

There is limited hydrologic data documenting the inflows to the lake. The United States Geological Survey (USGS) maintains gauging stations on the San Jacinto River (and Salt Creek upstream of Canyon Lake). Both gauges only have approximately nine year history. During periods of high runoff, Canyon Lake fills and spills into the San Jacinto River where it flows into Lake Elsinore. The USGS gauge on the San Jacinto River below Railroad Canyon Dam (No. 11070500) has an 89 year history (USGS, 2005). Over the last 30 years, significant spills from Canyon Lake occurred in 1980, 1983, 1993, 1995, 1998 and 2005.

Through the acquisition of the TWC, EVMWD has the rights to divert up to 12,000 acre-ft/yr of natural drainage from the San Jacinto River from about December 1 to about June 1 of each season and store that water in the Railroad Canyon Reservoir pursuant to Water Rights License 1533 (SDPW, 1935). A subsequent license allows the diversion 2.4 cfs of San Jacinto River water from about April 1 to about May 31 of each season pursuant to Water Rights License 6327 (SWRB, 1961). In settlement of litigation regarding the release of water into Lake Elsinore, EVMWD and the City of Lake Elsinore agreed that EVMWD would not treat more than 8,000 acre-ft/yr (about 7.1 mgd continuous flow) of San Jacinto River flows in any water year at EVMWD's Canyon Lake Water Treatment Plant. This 8,000 acre-ft/yr limit applies only to San Jacinto River runoff and excludes any imported water conveyed in the river channel (2010 UWMP).

Other sources of water for Canyon Lake include untreated imported water from Metropolitan connections WR-18A (Colorado River water) and WR-31 (SWP water). Each of these two imported water connections has a capacity of 69 cfs (44.6 mgd). EVMWD could purchase the imported water from Metropolitan through WMWD, which would be discharged into the San

Section 3 – Water Supply Sources

Jacinto River near Nuevo and flow downstream to Canyon Lake. EVMWD has not purchased water from the Metropolitan connection WR-18A since 1989 because the high TDS in Colorado River supply adversely affects wastewater effluent quality. Construction of Metropolitan connection WR-31 was completed in December 2003. Because the cost of treating raw Metropolitan water is relatively expensive, it is typically more cost-effective to purchase treated water from the AVP or the TVP instead of purchasing untreated imported water from these sources. In addition, some percentage of the water released into the San Jacinto River percolates into the intervening groundwater basins before it reaches Canyon Lake. It is estimated that approximately 89 percent of any water purchased from these connections reaches the lake (2010 UWMP). Consequently, such releases are typically made in the wet season when the river has natural flows to minimize losses. In spite of the lack of recent use, EVMWD currently has the ability to supplement its Canyon Lake supply with raw imported water from Metropolitan.

The Canyon Lake WTP is located north of Railroad Canyon Dam and has a design capacity of 9 mgd (13.9 cfs). However, running the plant at a capacity of no greater than 7 mgd (10.9 cfs) results in more optimal water quality. Thus, a maximum supply of 7 mgd is considered for this analysis as being available from the Canyon Lake WTP. Water from Canyon Lake is pumped to the treatment plant through the intake pumping station. The plant normally operates between April and October to provide additional water for summer demands (MWH, 2002). **Figure 3-4** graphs the amount of water treated at the Canyon Lake WTP for EVMWD in fiscal years 1992 to 2009. The figure shows that the average water treated at the Canyon Lake WTP and distributed to the EVMWD service area is approximately 2,526 acre-ft/yr. **Table 3-5** lists average year, wet year, and dry year flows to Canyon Lake, based on historical flows from natural runoff through the WTP from 1992 through 2009 (with 2002 excluded due to the plant modifications that year).

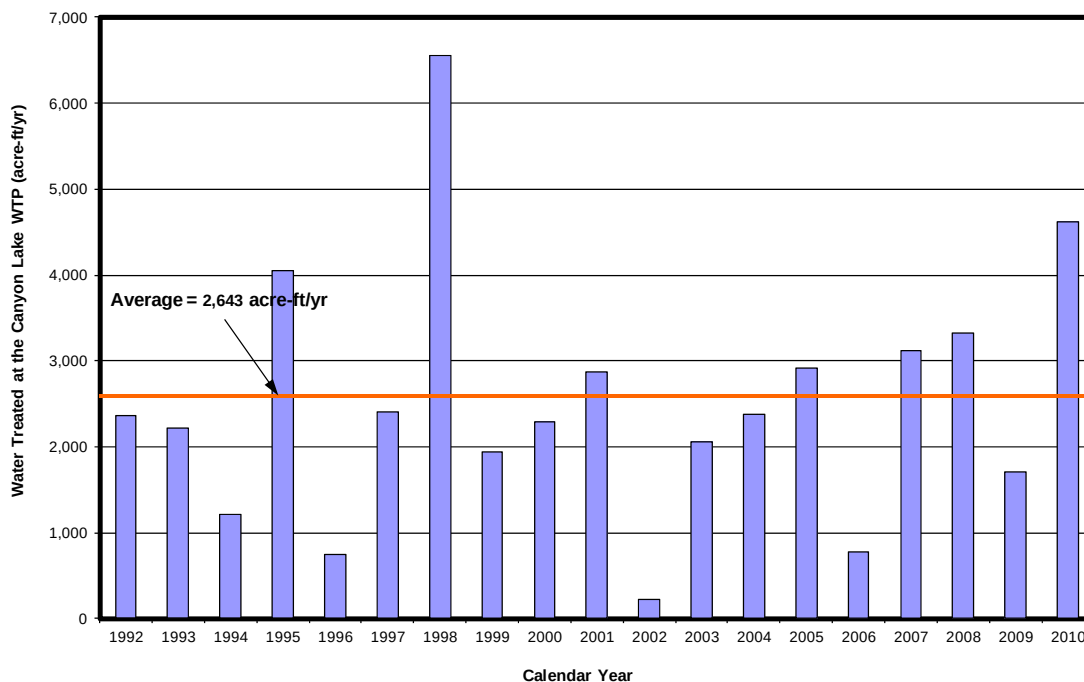


Figure 3-4
Canyon Lake WTP Production

Table 3-5
Summary of Historical Flows to Canyon Lake WTP, 1993 through 2009

Criteria	Annual Flows (acre-ft/yr)	Assumed Maximum Day Flows (mgd)
Average	2,640	7.0
Minimum	750	7.0
Maximum	6,550	7.0
Minimum, 3-Year Average	1,930	7.0

1. Maximum Day flows assume that the WTP is operated for four months a year, at a constant rate.
2. Year 2002 production is excluded because the WTP was not operational due to construction at the facility.

The data shown only reflects the natural runoff to Canyon Lake WTP; the Metropolitan connections provide an additional source of supply. However, for the purpose of this assessment, it is assumed that during dry years and multiple-dry years, additional water from MWD is not available for Canyon Lake. Based on the conjunctive use program, additional groundwater will be pumped during dry and multiple-dry years to offset the reduced surface water supply. EVMWD has the flexibility to fill Canyon Lake using the raw imported water and operate the Canyon Lake WTP at full capacity of 7 mgd when needed. However, that capacity is not accounted for the purpose of this assessment. The use of imported water to supplement local runoff is not included in the 8,000 acre-ft/yr limit imposed by the Lake Elsinore Settlement Agreement. Based on Metropolitan's reliability analysis, the imported water is fully reliable through 2035 (MWD - IRP 2010). **Table 3-6** presents the anticipated surface water deliveries from the Canyon Lake WTP.

Table 3-6
Anticipated Surface Water Deliveries without Supplemental Imported Water

Water Year Type	San Jacinto River Water (acre-ft/yr)	Maximum Capacity (mgd)
Wet Year	6,550	7.0
Normal Year	2,590	7.0
Single Dry Year	750	7.0
Multiple Dry Years	1,930	7.0

Treated Imported Water

Metropolitan was formed in 1928 by an act of the State Legislature to provide supplemental water for its member agencies in Southern California. Western Municipal Water District (WMWD) was formed in 1954 under the Municipal Water District Act of 1911 to bring supplemental water from Metropolitan to growing western Riverside County. Following WMWD's annexation to Metropolitan, EVMWD annexed to Western's service area in 1954. As a member agency of Western, EVMWD purchases treated imported Metropolitan water from WMWD through the Auld Valley Pipeline (AVP) and the Temescal Valley Pipeline (TVP). The AVP and the TVP are located on the southeastern and northwestern end of EVMWD's distribution system, respectively (2010 UWMP).

Auld Valley Pipeline

EVMWD entered into the Water Facility Capacity Agreement for the AVP with the EMWD on November 21, 1986. Based on this agreement, EVMWD has the rights to purchase or acquire a maximum flow rate of 37.5 cfs (24.2 mgd or approximately 27,100 acre-ft/yr if used continuously) from EMWD through the Metropolitan Connection EM-17. EMWD sells imported water for the AVP to WMWD, which in turn sells the water to EVMWD through an Interagency Water Sales Agreement (September 14, 1988). To reserve capacity for maximum day demand conditions, it is assumed EVMWD will be able to obtain 83 percent of source capacity (annual capacity divided by 1.2), or 22,500 acre-ft/yr from the AVP on an annual basis during average year and wet years. This factor provides reserve capacity to meet maximum day demands and is based on the difference between maximum day and maximum month demands. Based on the MWD 2010 Regional UWMP and 2010 IRP indicate complete delivery reliability over the next 20-year (2010 UWMP). So, it is assumed that EVMWD will be able to obtain 22,500 acre-ft/yr from the AVP on an annual basis during dry year and multiple dry years. This imported water is a blend of State Water Project (SWP) and Colorado River Aqueduct water. Prior to conveyance to the AVP, the water is treated at Metropolitan's R. A. Skinner Filtration Plant. It is then pumped into the Loop Zone and Cal Oaks Zone at the California Oaks Pumping Station located on Hancock Avenue.

Temescal Valley Pipeline

In addition to the AVP, EVMWD obtains imported water from the TVP through WMWD. The source of this water is SWP water that originates from Metropolitan's Mills Filtration Plant in Riverside. The Mills Gravity Pipeline (also known as the Woodcrest Pipeline), which is owned, operated and maintained by WMWD, runs westerly to its termination point near the intersection of Cajalco Road and Temescal Valley Road. According to EVMWD's 2008 WDSMP, the EVMWD connection at the pipeline terminus has a design capacity of 41 cfs (26.5 mgd or approximately 29,700 acre-ft/yr). Water is transferred to the TVP from the Mills Gravity Pipeline at the Woodcrest vault, located in Corona at the intersection of Temescal Canyon Road and La Gloria Street, (MWH, 2006) completed in February 2002. The current hydraulic capacity of the TVP is 19.6 cfs (12.7 mgd or 14,190 acre-ft/yr) based on gravity flow from the Woodcrest Pipeline. The TVP was designed to convey up to 41 cfs (26.5 mgd or 29,700 acre-ft/yr) with the construction of a booster pumping station. Like the AVP, it is assumed that EVMWD can obtain up to 83 percent of the current hydraulic capacity, or 12,700 acre-ft/yr from the TVP on an annual basis. Based on the MWD 2010 Regional UWMP and 2010 IRP indicate complete delivery reliability over the next 20-year (2010 UWMP). So, it is assumed that EVMWD will be able to obtain 12,700 acre-ft/yr from the TVP on an annual basis during dry year and multiple dry years. The TVP project was developed to provide additional water supplies from sources located north of the EVMWD service area. It includes an 8 MG terminal storage reservoir, transmission mains, and appurtenances.

On August 23, 2001, EVMWD entered into a reciprocal use agreement with WMWD that provided EVMWD with a conditional right to use 9 cfs of capacity in the Mills Gravity Pipeline. In return for the imported water capacity, EVMWD granted WMWD entitlement to water acquired from the Meeks and Daley rights (EVMWD 2001a, 2001b). This agreement is

automatically extended annually unless terminated by either party in accordance with termination provision of the agreement.

A separate lease agreement between EVMWD and WMWD provides EVMWD with the ability to use up to 5 cfs (3.2 mgd or 3,620 acre-ft/yr) of additional capacity from the Mills Gravity Pipeline on a temporary basis (EVMWD, 2001c). On August 8, 2002, the EVMWD Board of Directors approved an amendment to the lease agreement to lease an additional 7 cfs (4.5 mgd or 5,068 acre-ft/yr) from the Mills Pipeline, increasing the total lease capacity to 12 cfs (7.8 mgd or 8,688 acre-ft/yr) (EVMWD, 2002b). In addition to the lease capacity from the Mills Pipeline, EVMWD also has an “exchange of assets” with the Temescal Water Division to supply a capacity of 9 cfs (5.8 mgd or 6,516 acre-ft/yr) (EVMWD, 2002c). Thus, EVMWD can currently obtain up to 21 cfs (13.6 mgd or approximately 15,200 acre-ft/yr) of water from the TVP. However, it would require additional pumping capacity for supply greater than 14,200 acre-ft/yr.

Imported Water Supply Reliability

Metropolitan and its member agencies utilize an Integrated Resources Planning (IRP) approach to determine the appropriate level of supply reliability and establish cost-effective approaches to achieve that goal. The 1996 IRP process identified a Preferred Resource Mix that relied on a diverse mix of resources to achieve a goal of 100 percent reliability for full service water demands through 2020. The IRP established regional targets for conservation, local supplies, SWP supplies, Colorado River supplies, groundwater banking and water transfers. In October 2010, Metropolitan’s IRP Update was completed which extended the reliability outlook and resources plan to provide 100 percent reliability through the year 2035. As part of its update, Metropolitan increased its targets for conservation, water recycling and groundwater recovery, SWP and Colorado River supplies, and Central Valley storage and transfers. The goal of these increased targets are to ensure a minimum 10 percent planning reserve or buffer between supplies and demands in the event that certain supplies cannot be developed as planned. In addition to its supply planning activities, Metropolitan is committing to collaborate with its member agencies to achieve water use savings of 20 percent by year 2020 in accordance with the 2009 enactment of Water Code section 10608 *et seq.*, commonly referred to as SBX7-7.

Additionally, Metropolitan has developed the Water Surplus and Drought Management (WSDM) Plan. The WSDM Plan is based on the strategy of storing surplus supplies in wet periods for use during drought periods. It consists of five water surplus stages and seven water shortage stages that define progressive actions to be taken depending on available supplies. For example, in a Stage 1 shortage, Metropolitan would make withdrawals from Diamond Valley Lake storage. As the severity of shortage increases, Metropolitan would withdraw water from out-of-region storage, suspend deliveries to local long term storage and replenishment programs, withdraw water from groundwater storage and SWP terminal reservoirs and call for extraordinary conservation. Water allocations for full-service customers would not be implemented until a Stage 7 Shortage is reached. The overriding goal of the WSDM is to never reach a Stage 7 Shortage. Metropolitan staff provides its board of directors with status reports throughout each year on water supply and demand forecasts that are used to determine appropriate management actions. Based on its water supply development in conjunction with the WSDM Plan, Metropolitan’s supplies for full-service deliveries are expected to be fully reliable through 2035. The main factors affecting reliability of Metropolitan supplies are hydrologic variations in

Section 3 – Water Supply Sources

Metropolitan's two main supply sources: the State Water Project and the Colorado River. The WSDM planning is integral part of the WMWD's water supply planning (per WMWD's 2010 UWMP).

Per Metropolitan's Regional Water Urban Water Management Plan (2010), Metropolitan indicates that its existing supplies are adequate to meet the projected demands in all hydrologic conditions through 2035. Implementation of planned supplies increases reliability and maintains an adequate reserve. Based on Metropolitan's 2010 UWMP, it is assumed that imported water is fully reliable during average and wet years. As indicated above, in critically dry years, if there is a shortfall of water supplies, Metropolitan may implement its WSDM and Water Supply Allocation Plan in relation to its member agencies including WMWD and EMWD. In that case, it is expected that WMWD would implement water supply planning strategies among its wholesale water customers, including EVMWD, such as surcharges for higher tiers of water use, similar to those imposed by Metropolitan under its WSDM. Based on Metropolitan's 2010 UWMP, Metropolitan supplies are fully reliable through year 2035 for full service deliveries. WMWD's 2010 UWMP and EVMWD's 2010 UWMP have incorporated similar conclusions with respect to the availability and reliability of imported water supplies. (Water Code § 10631(k)). Accordingly, this WSA utilizes the same information and analyses in projecting that Metropolitan will have sufficient supplies to meet imported water demands within its service area (including EVMWD) during wet, average, dry and multiple dry years.

Since EVMWD's population is expected to increase in the next 20 years, additional water supply sources are necessary to meet future potable water demands. The following section describes EVMWD's plans for future water supply development. Future supplies include the construction of a pump station that would increase the TVP capacity and plans to enhance the availability of supplies from the Elsinore Basin through the implementation of the Back Basin Groundwater Storage Project (BBGSP) as part of the Elsinore Basin GWMP. **Table 3-7** provides a summary of these water supply sources and their annual average and maximum day capacities during average/normal, single-dry, multiple-dry, and wet years.

**Table 3-7
Future Water Supply Sources**

Water Supply Source	Average Year	Single-Dry Year	Multiple-Dry Years	Wet Year	Comments
Annual Average Demands (acre-ft/yr)					
Cereal 1 & Corydon	0	2,000	1,600	0	
Palomar Well Replacement	0	1,000	800	0	
Terra Cotta Well (North Basin Well)	0	1,400	1,300	0	
Additional Capacity from TVP ¹	12,900	12,900	12,900	12,900	Up to full capacity of connection
Total	12,900	17,300	16,600	12,900	
Maximum Day Demands (Peaking Capacity – mgd)					
Cereal 1 & Corydon	3.8	3.8	3.8	3.8	
Palomar Well Replacement	0.7	0.7	0.7	0.7	One well at 500 gpm
Terra Cotta Well (North Basin Well)	1.7	1.7	1.7	1.7	One well at 1,200 gpm
Additional Capacity from TVP	13.8	13.8	13.8	13.8	Up to full capacity of pipeline
Total	20.0	20.0	20.0	20.0	

1. Construction of TVP pump station is required to utilize additional capacity of the TVP.,
2. Multiply mgd with 1120 to get acre-feet/year.

Groundwater

EVMWD intends to enhance and expand its use of the Elsinore Groundwater Basin to meet long-term potable and non-potable water demands, principally through the implementation of groundwater storage projects. The GWMP and the BBGSP are designed to maximize effective management of the basin's resources, enhance water quality, and improve the overall water supply reliability of the basin.

Groundwater Management Plan

MWH prepared a Final Draft GWMP for EVMWD in June 2003 (MWH, 2003a). This document was subject to public review for more than one year. Following the required public hearings, the EVMWD Board of Directors adopted the GWMP on March 24, 2005. The main objective of the GWMP is to provide a guideline for maximizing the beneficial use of groundwater resources in the Elsinore Basin (2010 UWMP). Four alternatives are identified based on analysis of current and projected water supplies and demands. These alternatives aim to achieve a balanced groundwater basin through: 1) a conjunctive use program using 14 dual-purpose injection-extraction wells; 2) spreading basins in Leach and McVicker Canyons with the installation of five new extraction wells; 3) a combination of in-lieu recharge and water conservation; 4) use of recycled water for lake recharge; and 5) a basin monitoring program. The alternatives evaluated are as follows:

Section 3 – Water Supply Sources

- Alternative 1 – Groundwater recharge by dual purpose injection/extraction wells
- Alternative 2 – Groundwater recharge by surface spreading
- Alternative 3 – In-lieu recharge and water conservation
- Alternative 4 – Combination of dual purpose wells, in-lieu recharge, increased water recycling and conservation

Alternative 4 was selected as the “recommended plan” because it includes water conservation and increased recycled water use for replenishment of Lake Elsinore in addition to groundwater replenishment using dual purpose wells. The total capital cost of the “preferred alternative” is \$24.3 million. The GWMP provides a detailed breakdown of the capital cost, and annual operation and maintenance (O&M) costs (MWH, 2005b). **Table 3-8** summarizes the components of the “recommended plan,” such as reliability, water quality, costs, compliance with regulatory standards, and water supplies.

Table 3-8
Summary of Groundwater Management Plan

Element	Description
Water Supplies	• 9 Existing EVMWD Wells • 4 Existing EWD Wells • Canyon Lake WTP • AVP Connection at 24.2 mgd • TVP Connection with new PS at 26.5 mgd • Equipping Joy Street Well as dual purpose • Conversion of 6 existing wells to dual purpose wells • 7 new dual purpose wells (two have been constructed to date) • 4 wells for peaking
Lake Replenishment	• up to 17.7 mgd of Recycled Water • 3 Island Wells
Special Projects (in addition to the peaking wells)	Dual Purpose Wells with imported water: • 3 deep wells north of Lake Elsinore • 6 deep wells south of Lake Elsinore • 5 shallow wells south of Lake Elsinore • 30-inch diameter pipeline (4,000 feet) • 800 HP pumping station between Cal Oaks and the Back Basin
Basin Monitoring	• Water Quality, • Groundwater levels, Groundwater production & Lake levels • Surface flow rates, Rainfall
Ability to Reduce Overdraft	• Groundwater balance is achieved. • 5,900 acre-ft/yr injected. • 600 acre-ft/yr in-lieu recharge. • Slightly increasing water levels. • Storage Deficit = 0 acre-ft/yr.
Funding	• Capital Cost \$24 million. • Equitable distribution of investments. • Potential Grant Funding • District Funding.

Reference: Final Elsinore Basin GWMP (MWH, 2005b).

Terra Cotta Well

Three of the dual-purpose wells recommended in the GWMP would be located in the area north of Lake Elsinore, with one existing well converted to dual-purpose and the installation of two new dual-purpose deep wells. The Terra Cotta Well is one of the proposed deep wells in the area north of Lake Elsinore. Groundwater production has not been initiated at the Terra Cotta well as well is currently not equipped, though the well has been constructed. Approximately 1,200 gpm of additional supply capacity would be made available through this well. During winters of wet and average years, water will be injected into the groundwater basin, while water will be extracted from the groundwater basin during summers of average and dry years. The required permits for equipping the Terra Cotta Well and their status are summarized in **Table 3-9**. The well is drilled and is estimated to be equipped by 2014.

**Table 3-9
Required Permits for Terra Cotta Well Equipping**

Agency	Permit or Approval	Approximate Processing Time	Current Status
California Environmental Quality Act (CEQA)	Mitigated Negative Declaration	150-180 days	Completed
California Regional Water Quality Control Board, Santa Ana Region	NPDES General Discharge Action Plan, notice of compliance during discharging of test water; Monitoring and Reporting Program, notice of compliance during discharging of test water	150-180 days	Not started
California Regional Water Quality Control Board, Santa Ana Region	Cooperative Agreement to Protect Water Quality and Encourage Conjunctive Use of Imported Water in the Santa Ana Basin	Negotiated Agreement	Completed
South Coast Air Quality Management District	Rule 403 Fugitive Dust compliance plan (Erosion, Siltation, Dust Control) for construction and operation	90-120 days	To be handled by Contractor
City of Lake Elsinore, Department of Public Services	Public Property Encroachment Permits for new pipelines in City streets	60-90 days	Not started
Department of Health Services, Drinking Water Branch	Amendment to Treated Water System Permit to tie new production wells into the existing distribution system	90-120 days	Not started

Pipeline Blending

Due to higher arsenic level in the ground water pumped from Cereal 1 and Corydon, these wells are not operated currently. EVMWD has constructed a pipeline from Diamond and Summerly to

Section 3 – Water Supply Sources

blend water from Cereal 1 and Corydon to comply with maximum containment level of arsenic. The 20-inch diameter pipeline was constructed in 2011 and will be used to blend the water from Diamond, Summerly with Cereal 1 and Corydon St Wells. C Start-up of the pipeline gives EVMWD an additional pumping capacity of approximately 2,700 gpm from these two wells.

Palomar Well Replacement

The District has proposed a plan to replace the Palomar well by year 2015. Approximately 500 gpm of additional capacity will be available with the replacement of this well. Environmental documentation has not begun for the Palomar well replacement. The required permits for the Palomar well replacement and their status are summarized in **Table 3-10**. The Palomar well replacement is currently not budgeted and is estimated to be included in 2013-2014 budget to complete the well replacement construction by year 2016.

Table 3-10
Required Permits for Palomar Well Replacement

Agency	Permit or Approval	Approximate Processing Time	Current Status
California Environmental Quality Act (CEQA)	Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report	150-180 days	Not Started
California Regional Water Quality Control Board, Santa Ana Region	NPDES General Discharge Action Plan, notice of compliance during discharging of test water; Monitoring and Reporting Program, notice of compliance during discharging of test water	150-180 days	Not started
California Regional Water Quality Control Board, Santa Ana Region	Waste Discharge Permit for injection of water in dual-purpose production wells	150-180 days	Not started
South Coast Air Quality Management District	Rule 403 Fugitive Dust compliance plan (Erosion, Siltation, Dust Control) for construction and operation	90-120 days	To be handled by Contractor
Riverside County Health Services Agency, Department of Environmental Health			
City of Lake Elsinore, Department of Public Services	Public Property Encroachment Permits for construction of well on City property and new pipelines in City streets	60-90 days	Not started
Department of Health Services, Drinking Water Branch	Amendment to Treated Water System Permit to tie new production wells into the existing distribution system	90-120 days	Not started

Treated Imported Water**Temescal Valley Pipeline Pumping Station**

The TVP was designed to deliver up to 41 cfs (26.5 mgd). However, to achieve this capacity a pumping station is required to increase the hydraulic grade line sufficiently to overcome the increased headloss associated with the higher flow rate. EVMWD will budget for the construction of the pumping station as part of its FY 2013-14 budget. Preliminary design is completed and with final design to begin in 2013 and construction to be completed in FY 2013-14. EVMWD has already located a site for this pump station at this time.

There is currently unallocated capacity in the Mills Gravity Pipeline. EVMWD intends to contract for additional capacity in the Mills Gravity Pipeline with WMWD when the capacity is required and has already begun discussions with WMWD about acquiring the needed capacity to increase TVP deliveries. This will allow EVMWD to avoid the standby charge WMWD imposes on unused pipeline capacity.

EVMWD has completed a program environmental impact report (PEIR) on the TVP pump station. The Project-level impacts of the TVP Pump Station are covered in the PEIR ; EVMWD is in the process of preparing a tiered environmental document for the pump station. The required permits for the TVP pump station and their status are summarized in **Table 3-11**. The budget of \$ 6,009,929 for the TVP Pump station was included in 2008-2009 budgets. The preliminary design of the pump station is completed. The final design and construction will be included in 2014 budget.

Table 3-11
Required Permits for Temescal Valley Pipeline Pump Station

Agency	Permit or Approval	Approximate Processing Time	Current Status
CEQA	Environmental Impact Report	150-180 days	Completed
California Regional Water Quality Control Board, Santa Ana Region	NPDES General Discharge Action Plan, notice of compliance during discharging of test water; Monitoring and Reporting Program, notice of compliance during discharging of test water	150-180 days	Not started
South Coast Air Quality Management District	Rule 403 Fugitive Dust compliance plan (Erosion, Siltation, Dust Control) for construction and operation	90-120 days	To be handled by Contractor
City of Lake Elsinore, Department of Public Services	Public Property Encroachment Permits for construction of new pipelines in City streets	60-90 days	Not started – need depends on selected site

Water Supply Summary

EVMWD's existing water supplies are surface water from Canyon Lake, groundwater pumping, and imported water from Metropolitan via the TVP and AVP. A summary of supply capabilities of the existing and proposed water sources is presented in **Table 3-12**. Future water supply sources include implementation of the Back Basin Groundwater Storage Project, imported raw water from Metropolitan Connection WR-31, and imported treated water by adding a pump station on the TVP.

Table 3-12
Summary of Existing and Future Potable Water Sources

Water Supply Source	Capacity (mgd)	Average Year (acre-ft/yr)	Single Dry Year (acre-ft/yr)	Multiple-Dry Years (acre-ft/yr)	Single Wet Year (acre-ft/yr)
Existing Supplies					
Canyon Lake (Natural Runoff)	7.0	4,900	2,500	3,000	8,000
Groundwater - Extraction	15.4	3,700	11,300	10,000	3,400
Groundwater Injection	(6.8)	(6,100)	0	0	(6,900)
TVP	12.7	12,700	12,700 ²	12,700 ²	12,700
AVP	24.2	22,500	18,500 ^{3, 4}	18,500 ^{3, 4}	22,500
Total - Existing Supplies	59.3	43,800	45,000	44,200	46,600
Future Supplies					
Cereal 1 & Corydon (including Injection)	3.8	0	2,000	1,600	0
Terra Cotta Well ¹ (including Injection)	1.7	0	1,400	1,300	0
Palomar Replacement	0.7	0	1,000	800	0
TVP Pumping Station	13.8	12,900	12,900	12,900	12,900
Total - Future Supplies	20.0	12,900	17,300	16,600	12,900
Total	79.3	56,700	62,300	60,800	59,500

1 –Yield is included in BBGSP values.

2- Accounts for 83% of TVP capacity (2010 UWMP).

3- Accounts for 83% of AVP capacity (2010 UWMP).

4- Based on Metropolitan's groundwater storage program, 4,000 acre-ft/yr is deducted from Metropolitan's deliveries during single dry year & multiple dry years (2010 UWMP).

RECYCLED WATER SUPPLIES

EVMWD serves customers with recycled water for irrigation. In addition, EVMWD uses tertiary treated wastewater to maintain water levels in Lake Elsinore during normal and dry years.

Existing Recycled Water Supplies

EVMWD's non-potable demands are supplied by tertiary treated wastewater from the Regional WRF, Railroad Canyon WRF, and Horsethief WRF. Historically, EVMWD has used the treated effluent from Railroad Canyon WRF and Horsethief WRF for irrigation, except during storm events when the influent from Railroad Canyon WRF is bypassed to the Regional WRF and/or the effluent is discharged into percolation ponds. The Horsethief WRF is a peaking plant that balances supply with demand. If demand is low, supply is low and vice versa. Excess effluent from the Horsethief WRF that cannot be used for recycled water irrigation is sent to Regional WRF. Effluent from the Regional WRF is typically discharged into the Temescal Wash for supporting uses along Temescal Creek when Lake Elsinore levels are high (2010 UWMP).

Table 3-13 summarizes EVMWD's recycled water production. It should be noted that a portion of the wastewater flows collected by EVMWD is diverted to the RCWD Santa Rosa WRF (Southern) for treatment and disposal.

Table 3-13
Historical Recycled Water Available Production

Year ¹	Horsethief Canyon WRF (MGD)	Railroad Canyon WRF (MGD)	Regional WRF (MGD)	RCWD Santa Rosa WRF (MGD) ²	Total Production (MGD)
1999	0.22	0.93	3.70	0.80	5.65
2000	0.26	0.95	3.71	0.80	5.72
2001	0.32	0.93	3.79	0.81	5.85
2002	0.38	0.91	3.73	1.18	6.19
2003	0.47	0.88	4.09	1.25	6.69
2004	0.43	0.88	4.46	1.28	7.05
2005	0.42	0.75	5.63	1.37	8.18
2006	0.43	0.84	5.53	1.26	8.06
2007	0.40	0.83	5.31	1.26	7.80
2008	0.39	0.79	5.53	0.99	7.70
2009	0.38	0.83	5.36	0.88	7.45
2010	0.38	0.78	5.61	0.81	7.57

Source: 2010 UWMP

- 1 Years shown are fiscal years for 1999 to 2008 and calendar year for 2009 except for RCWD Santa Rosa WRF which is fiscal year.
- 2 EVMWD influent portion only

Railroad Canyon WRF and Horsethief Canyon WRF

The effluent from Railroad Canyon WRF and Horsethief Canyon WRF receives tertiary treatment and meets Title 22 requirements. The current rated capacity for Railroad Canyon WRF and Horsethief Canyon WRF are 1.2 mgd and 0.5 mgd, respectively. Based on the number of active accounts (2010 UWMP), in 2009, the flows are approximately 0.70 mgd to Railroad Canyon WRF and 0.38 mgd to Horsethief Canyon WRF. Most of the treated wastewater from

Railroad Canyon WRF is directed to the Canyon Lake Golf Course during the summer months, with excess effluent either to on-site percolation ponds or bypassed to the Regional WRF. Treated recycled water from Horsethief Canyon is distributed to local landscape irrigation users with excess effluent sent to local percolation ponds.

Regional WRF

The Regional WRF has a current rated capacity of 8 mgd. The wastewater effluent is treated with tertiary treatment to Title 22 requirements and then discharged to Temescal Wash and/or Lake Elsinore. Based on data provided by EVMWD, the annual average flow at the Regional WRF in 2009 was 4.9 mgd normalized (2010 UWMP).

Beginning in June 2002, effluent from the Regional WRF and from EMWD was used for replenishing Lake Elsinore as part of a 2-year pilot test program. The purpose of this program was to evaluate the effects of using recycled water for lake replenishment as part of an overall lake management strategy. In March 2005, EVMWD received a revised NPDES permit from the Regional Board to discharge effluent into the lake and discharge to lake Elsinore has continued since then except in cases of high lake levels.

In addition, EVMWD has an agreement with EMWD to purchase excess recycled water from EMWD for lake stabilization. Under this agreement, EVMWD can purchase between 5,000 and 30,000 acre-ft/yr of surplus effluent. This recycled water originates from EMWD's Moreno Valley and Perris Valley WRFs and normally only available during wet periods when EMWD's recycled water usage is low and its storage facilities are full; however, EVMWD usually only needs to augment Lake Elsinore during normal and dry years. This recycled water would be delivered to EVMWD through EMWD's Temescal Pipeline that parallels the San Jacinto River and terminates at Wasson Sill, a topographic divide on the Temescal Wash that separates flows between Lake Elsinore and Santa Ana River.

EMWD and RCWD

EMWD currently operates the Temecula Valley Regional WRF and RCWD operates the Santa Rosa WRF (Southern). The Temecula Valley Regional WRF has a current capacity to treat 12 mgd to Title 22 requirements and the Southern facility has the capacity to treat up to 1.54 mgd of EVMWD's wastewater flow. EMWD completed construction of the Temecula Valley Effluent Disposal Pipeline (TVEDP) that would convey effluent from the Temecula Valley Regional WRF and RCWD Santa Rosa WRF to Temescal Wash for disposal. This facility allows EMWD and RCWD to avoid costly nutrient removal facilities required for discharge to the Santa Margarita River. This pipeline passes through EVMWD's service area. Since EVMWD contributed approximately 0.99 mgd of flow in 2008 to RCWD (EVMWD CAFR, 2008), EVMWD is entitled to receive this amount of recycled water from this facility per an agreement between EVMWD, RCWD, and EMWD. Under this agreement, EVMWD is entitled to up to 1.54 mgd of recycled water via the TVEDP, but not more than the amount of raw wastewater that EVMWD conveys to RCWD's Santa Rosa WRF. In addition, under this agreement EMWD has the option to sell EVMWD additional recycled water through the TVEDP on an as-needed basis. EMWD currently retains and stores as much recycled water as possible within its system and is entitled to supply its customers before other agencies' are supply. Once its storage ponds

Section 3 – Water Supply Sources

are full, EMWD discharges water to Temescal Wash through the TVEDP (primarily in the winter months, 2010 UWMP).

Future Recycled Water Supplies

EVMWD plans to utilize its existing recycled water supply capacity prior to constructing any additional facilities. Currently EVMWD is not using its entire recycled water supply capacity. Analysis of historical per connection water usage and wastewater production data (EVMWD CAFR, 2009) shows that approximately 34 percent of potable water usage becomes wastewater. By assuming 34 percent of the future potable water demand (as discussed in Section 2), the generated wastewater flow of the future potable water demand can be determined, as shown in **Table 3-14**.

Table 3-14
Future Recycled Water Production based on Future Potable Water ADD

Supply Category	Horsethief Canyon WRF (MGD) ¹	Railroad Canyon WRF (MGD) ¹	Regional WRF (MGD) ¹	RCWD Santa Rosa WRF (MGD) ^{1,2}
Existing ³	0.03	0.34	0.00	0.00
Inactive Accounts (Future) ⁴	0.00	0.00	0.00	0.00
Will-Serve (Future) ⁵	0.00	0.00	0.27	0.00
Summerly Development (Future) ⁶	0.00	0.00	0.19	0.00
Alberhill Villages and Alberhill Ridge Development (Future) ⁷	0.00	0.00	1.56	0.00
Total Supply	0.03	0.35	2.05	0.00

¹ A 34 percent potable water usage to generated wastewater flow is used.

² EVMWD influent portion only.

³ Based on existing recycled water demand (see Section 2).

⁴ Assumed that there will be a certain percentage of inactive accounts within EVMWD's service area in the future, thus it is more conservative to assume that wastewater flow is not generated from those inactive accounts.

⁵ The majority of will-serves are situated in the Regional WRF collection basin and the wastewater generated in the Horsethief Canyon and Southern basins is insignificant (0 AFY and 1 AFY, respectively).

⁶ The Summerly Development is situated in the Regional WRF collection basin.

⁷ The Alberhill Villages and Alberhill Ridge Development is situated in the Regional WRF collection basin for the immediate future based on telephone conversation with Ken Crawford at KWC Engineers. Flows may be diverted to a proposed Alberhill WRF in the long-term future.

The total available future recycled water production capacity that EVMWD may have access to is 23.2 mgd, as shown in

Table 3-15.

Table 3-15
Maximum Available Future Recycled Water Production Capacity

Treatment Facility	Maximum Capacity (MGD)	Maximum Capacity (acre-ft/yr)
Horsethief WRF	0.5	600
Railroad Canyon WRF	1.2	1,300
Regional WRF	8.0	9,000
Santa Rosa WRF (Southern) ¹	1.5	1,700
Temecula Valley Regional WRF ²	12.0	13,400
Total Supply	23.2	26,000

¹ The maximum recycled water supply that EVMWD is entitled to under the agreement with RCWD is 1.54 mgd, but cannot be greater than the raw wastewater that EVMWD sends to Southern WRF.

² EMWD has the option to sell the recycled water to EVMWD on an as-needed basis.

Section 4

Comparison of Supply and Demand

This section evaluates the available water supply with the projected water demands, for recycled water, and for potable water, under both annual average and maximum day demand conditions. This section demonstrates that EVMWD's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection are sufficient to meet the projected water demand associated with the proposed project, in addition to EVMWD's existing and planned future water demands, including agricultural and manufacturing uses. Proposed developments that have not obtained a will-serve letter or other written agreement that commits EVMWD to serve a particular development are not included in the future demand projections, including developments that may have had a WSA in the past. However, the urban growth and projected water demands associated with Alberhill Villages and Alberhill Ridge projects fall within the forecasted growth and projected water demands that are generally identified in the District's 2010 UWMP. Thus the projected demand identified in the UWMP at year 2035 is much higher than the projected demands identified in this WSA as UWMP projects the demand based on population projection includes other projects apart from Alberhill Villages and Alberhill Ridge. Similarly, the WSA only identifies and acknowledges the near future planned supplies and not all the projected supplies that may be developed in 20 year horizon. Additional long term future supplies are not identified in the WSA as near term future supplies are sufficient to meet the committed demands and demands that will be generated by Alberhill Villages and Alberhill Ridge project.

RECYCLED WATER SUPPLY VERSUS DEMAND COMPARISON

The majority of potential recycled water demands can be supplied by a specific source, with no connectivity or intermingling of recycled water supplies (2010 UWMP). Horsethief Canyon recycled water demands will be supplied from the existing Horsethief WRF. Canyon Lake recycled water demands will be supplied from Railroad Canyon WRF. Lake Elsinore replenishment water will be supplied from Regional WRF and Eastern MWD. The Wildomar, Tuscany Hills, and Summerly, recycled water demands will be supplied from return flows from Rancho California WD's Santa Rosa WRF. To ensure conservative analysis, it is assumed that the Alberhill Villages and Alberhill Ridge projects will not be served with the recycled water.

Table 4-1 compares recycled water demands and supplies on an annual and maximum day basis for the planned future demands. The supply data shown is from **Section 3**, and the demand data is as discussed in **Section 2** of this WSA.

Railroad Canyon WRF will continue to serve Canyon Lake recycled water demands. Due to increased demands from the Canyon Hills development, EVMWD is planning to supplement Railroad Canyon WRF effluent with recycled water from Eastern MWD. The connection to Eastern MWD's Temecula Valley Effluent Disposal Pipeline (TVEDP) is not ensured to be sufficient for meeting the demand for conversion of existing potable water customers and new recycled water developments in the Wildomar, Summerly, and Tuscany Hills regions. EVMWD

Section 4 – Comparison of Supply and Demand

is guaranteed up to a maximum 1.54 MGD (1,725 acre-ft/yr) of flow from the TVEDP, but not more than EVMWD's wastewater generated flow to RCWD Santa Rosa WRF. Eastern MWD has the option of selling more recycled water to EVMWD on an as-needed basis after Eastern MWD's needs are met. If Eastern MWD does not have excess recycled water supply to sell to EVMWD, then excess recycled water demands will be met by potable water. The Wildomar recycled water system will require approximately 100 acre-ft/yr of potable make-up water in an average year. Supplies show that there is sufficient recycled water generated at the Horsethief Canyon WRF to meet projected ADD and MDD recycled water demands in the Horsethief Canyon area.

**Table 4-1
Recycled Water Supply and Planned Demand**

Demand Category	Average Year Demand	Wet Year Demand	Dry Year Demand	Source	Supply ¹
Annual Average Supply and Demand Comparison (acre-ft/yr)					
Existing Canyon Lake	420	360	470	Railroad Canyon WRF	785
Existing Horsethief Canyon	30	25	35	Horsethief Canyon WRF	425
Existing Potable to Recycled conversion	1,200	1,000	1,400	EMWD/RCWD WRF ²	1,110
Total⁴	1,700	1,400	1,900		2,300
Maximum Day Supply and Demand Comparison (mgd)³					
Existing Canyon Lake	1.0	0.88	1.17	Railroad Canyon WRF	0.70
Existing Horsethief Canyon	0.07	0.06	0.08	Horsethief Canyon WRF	0.38
Existing Potable to Recycled conversion	3.0	2.52	3.36	EMWD / RCWD WRF ²	0.99
Total	4.0	3.5	4.6		2.0

¹ Supplies shown are based on existing and projected development (2010 UWMP).

² Flows from Rancho California WD are based on existing EVMWD wastewater treated at the Santa Rosa WRF. Remaining flows will be purchased from Eastern MWD.

³ An ADD to MDD peaking factor of 2.77 is used (Kennedy-Jenks Wildomar Recycled Water Master Plan, 2004).

⁴ Total number is rounded to nearest 100.

Potable Water Supply versus Demand Comparison

Projected potable water demands are calculated in **Section 2**. Here, those demands are compared with water supplies, showing that EVMWD's existing and planned future water supplies (such as TVP Pumping Station, Terra Cotta Well, and BBGSP) are sufficient during normal, single dry and multiple dry years over the next 20-year projection to meet the projected water demand associated with the proposed project, in addition to EVMWD's existing and planned future water demands, including agricultural and manufacturing uses. Additionally, with the implementation of these future supplies, there will be sufficient supply capacity to meet an additional 9,000 EDUs under average day demand conditions.

Section 4 – Comparison of Supply and Demand

Potable Water Supply versus Committed Demands

Based on the findings in the recycled water supply-demand comparison, the annual committed potable water demands can be adjusted to reflect existing potable customers to be served by recycled water in future.

Revised potable demands are shown in **Table 4-2**. The recycled water deficit is calculated by taking the difference between the supply and demand for each demand category and corresponding supply source. For ADD, a recycled water deficit is experienced only for the recycled water conversions supplied by EMWD/RCWD WRF. Maximum day demands are based on a conservative peaking factor of 2.0 times average day demand, except for recycled water conversions in which case a 2.77 peaking factor is used. This MDD is adequate for planning purposes in all demand years. For MDD, a recycled water deficit is experienced for the Canyon Lake area supplied by Railroad Canyon WRF and for the recycled water conversions supplied by EMWD/RCWD WRF.

Table 4-2
Revised Potable Water Demands – 20 years and Committed Development

Water Demand Component	Average Year	Wet Year	Dry Year
Annual Demand, acre-ft/yr			
Existing Demands	30,400	27,000	34,400
Inactive Accounts	1,600	1,400	1,800
Conversion to Recycled	(1,200)	(1,100)	(1,400)
Committed Future Demands (with will-serves)	900	800	1,000
Summerly Development	600	500	700
Alberhill Villages and Alberhill Ridge Development	5,300	4,700	6,000
Recycled Water Deficit	100	0	200
Total Annual Demand	37,700	33,300	42,700
Maximum Day Demand, mgd¹			
Existing Demands	54.3		
Inactive Accounts	2.9		
Conversion to Recycled	(3.0)		
Committed Future Demands (with will-serves)	1.6		
Summerly Development	1.1		
Alberhill Villages and Alberhill Ridge Development	9.5		
Recycled Water Deficit	2.0		
Total Maximum Day Demand	68.4		

¹ An ADD to MDD peaking factor of 2.0 is used (2010 UWMP).

Section 4 – Comparison of Supply and Demand

Comparing the adjusted potable water demands with existing supplies on an annual basis, as shown in **Table 4-3**, depicting a comparison of committed demands, demands for the Alberhill projects, and existing and planned water supplies over the next 20 years. Planned future water supplies will provide redundancy and support future growth.

Table 4-3
Comparison of Potable Supply and Projected Demand, Annual Basis
20 Year and Development

Water Supply Source	Average Year	Single Dry Year	Multi-Dry Years	Single Wet Year
Canyon Lake WTP (Local Runoff)	4,900	2,500	3,000	8,000
Groundwater Extraction	3,700	11,300	10,000	3,400
Groundwater Injection	(6,100)	0	0	(6,900)
TVP	12,700	12,700	12,700	12,700
AVP	22,500	18,500	18,500	22,500
Total Potable Supplies	43,800	45,000	44,200	46,600
Committed Potable Demands with Alberhill Villages and Alberhill Ridge Development	37,700	42,700	42,700	33,300
Existing Supply Surplus	6,100	2,300	1,500	13,300
Cereal 1 and Corydon	0	2,000	1,600	0
Terra Cotta Well	0	1,400	1,300	0
Palomar Replacement	0	1,000	800	0
Additional Capacity from TVP	12,900	12,900	12,900	12,900
Total Supplies with Additional Sources	56,700	62,300	60,800	59,500
Supply Surplus with Additional Supplies	19,200	19,800	18,300	26,300

* All values shown are in acre-ft/yr (Table 5-12, 2010 UWMP)

Conversely, for maximum day, the projected future supplies are sufficient to meet the maximum day demand. The maximum day demand and supply capacity comparison is shown in **Table 4-4**. Additional supply capacity is required to meet the maximum day demands during dry years. Proposed facilities as previously identified in section 3 which are required to meet these deficiencies under maximum demand conditions are also shown in **Table 4-4**. Consequently, EVMWD will need to develop additional water supply peaking capacity to meet this demand projection.

In addition to the BBGSP and imported raw water into the San Jacinto River, EVMWD is planning for additional supplies to meet future demands. These include a connection to the Riverside-Corona Feeder to use the existing Meeks and Daley water rights, an additional imported water connection with Eastern MWD and future recycled water supplies to offset potable demands. These facilities are expected to be constructed after 2015.

Section 4 – Comparison of Supply and Demand

Table 4-4
Comparison of Potable Supply and Demand, Maximum Day Basis
20 Year and Development

Water Supply Source	Average Year
Canyon Lake	7.0
Groundwater	15.4
TVP	12.7
AVP	24.2
Total Potable Supplies	59.3
Projected Potable Demands	68.4
Supply Deficit	(9.1)
Cereal 1 and Corydon (Blending Pipeline)	3.8
Terra Cotta Well	1.7
Palomar Replacement	0.7
Additional Capacity from TVP ¹	13.8
Total Supplies with Additional Sources	79.3
Supply Surplus with Additional Supplies	10.9

1) All values shown are in mgd

Projected Remaining Supplies

Under Average day demand (ADD) conditions, there is supply surplus during average, dry, multiple dry and wet years as shown in **Table 4-3**. The planned future water supply is sufficient to meet all of EVMWD's committed demands with Alberhill Villages and Alberhill Ridge Projects during the max day scenario. EVMWD is taking steps on three future water sources – Cereal 1, Corydon and Palomar Wells, Terra Cotta Well and TVP Pumping Station, which adds additional supply capacity of 20.0 mgd. Therefore, when these three supplies are constructed, there is a supply surplus relative to committed demands of 10.9 mgd. This excess supply capacity can be used to supply future developments that do not currently have will-serve letters. The existing potable water supplies, plus these three proposed water sources, will be sufficient to meet the expected growth through 2035.

Based on **Table 2-3**, one EDU has a total annual average demand of 500 gal/day. Converting this to a maximum day demand (peaking factor of 2.0 for MDD), one EDU has a maximum day demand of 1,000 gal/day. Therefore, when Cereal 1, Corydon, Palomar, and Terra Cotta wells and the TVP Pumping Station are completed, EVMWD will have the supply capacity to meet the demands of an additional 1,900 EDUs beyond those that have already received will-serves.

CONCLUSIONS

EVMWD has the following existing supplies: surface water from Canyon lake WTP, groundwater supplies, imported water from Metropolitan through EMWD through the AVP and from Metropolitan through Western MWD through TVP. The additional supplies EVMWD is pursuing are the start-up of Cereal 1 and Corydon, replacement of the Palomar well, equipping

Section 4 – Comparison of Supply and Demand

the Terra Cotta well, the TVP pump station, and purchase of recycled water from EMWD to meet recycled water demands. Based on the existing water sources and listed future sources, considering the projected demands and planned water supplies as shown in EVMWD's 2010 UWMP, EVMWD has sufficient water to meet projected water demands for all developments with active will serves, plus the Alberhill Villages and Alberhill Ridge development over the next 20 years.

Appendix A

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Appendix B

Alberhill Villages and Alberhill Ridge Project Site Location Figures

Alberhill Villages and Alberhill Ridge (as of December 2011) is a master planned, mixed-use development within the City of Lake Elsinore.

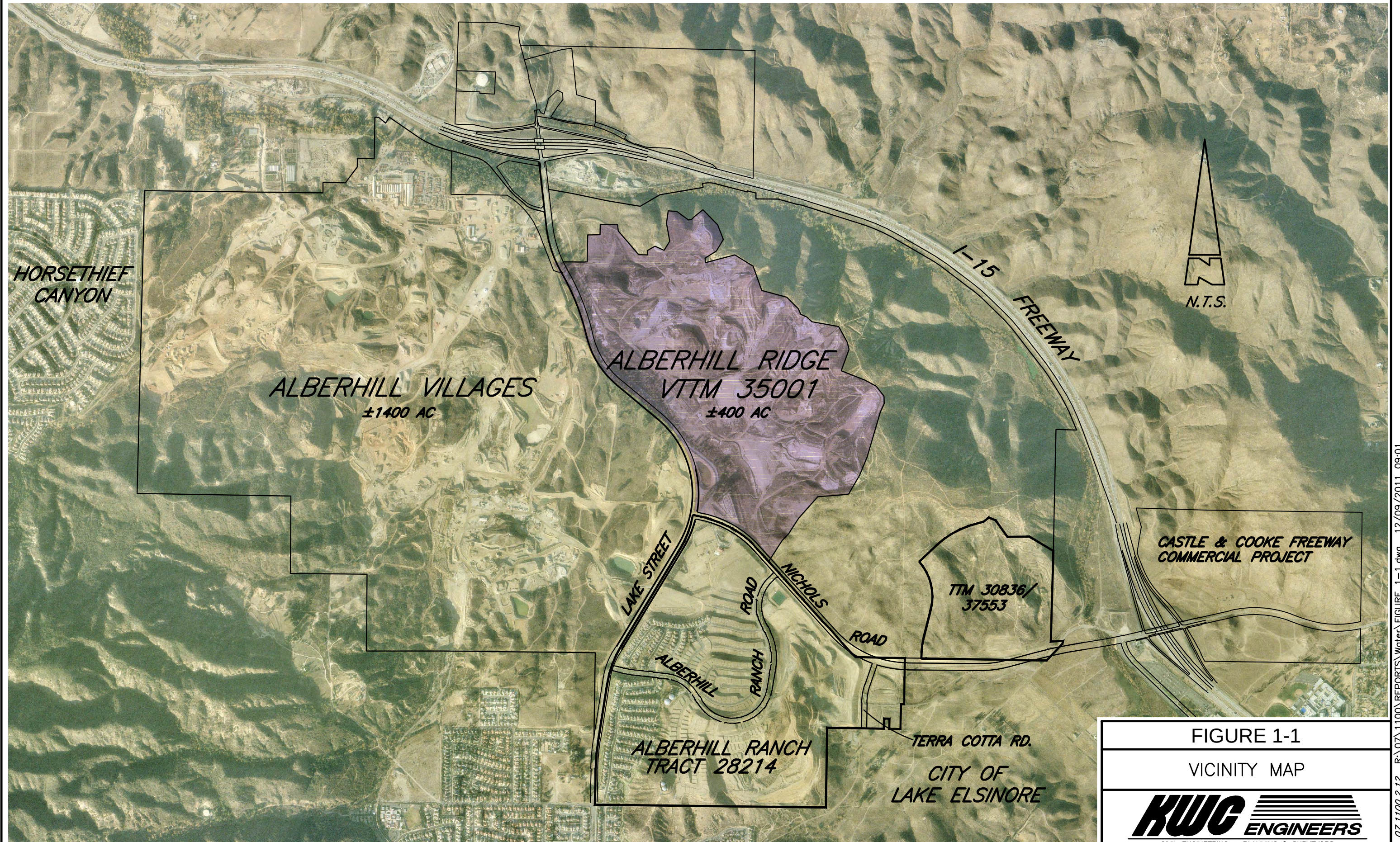
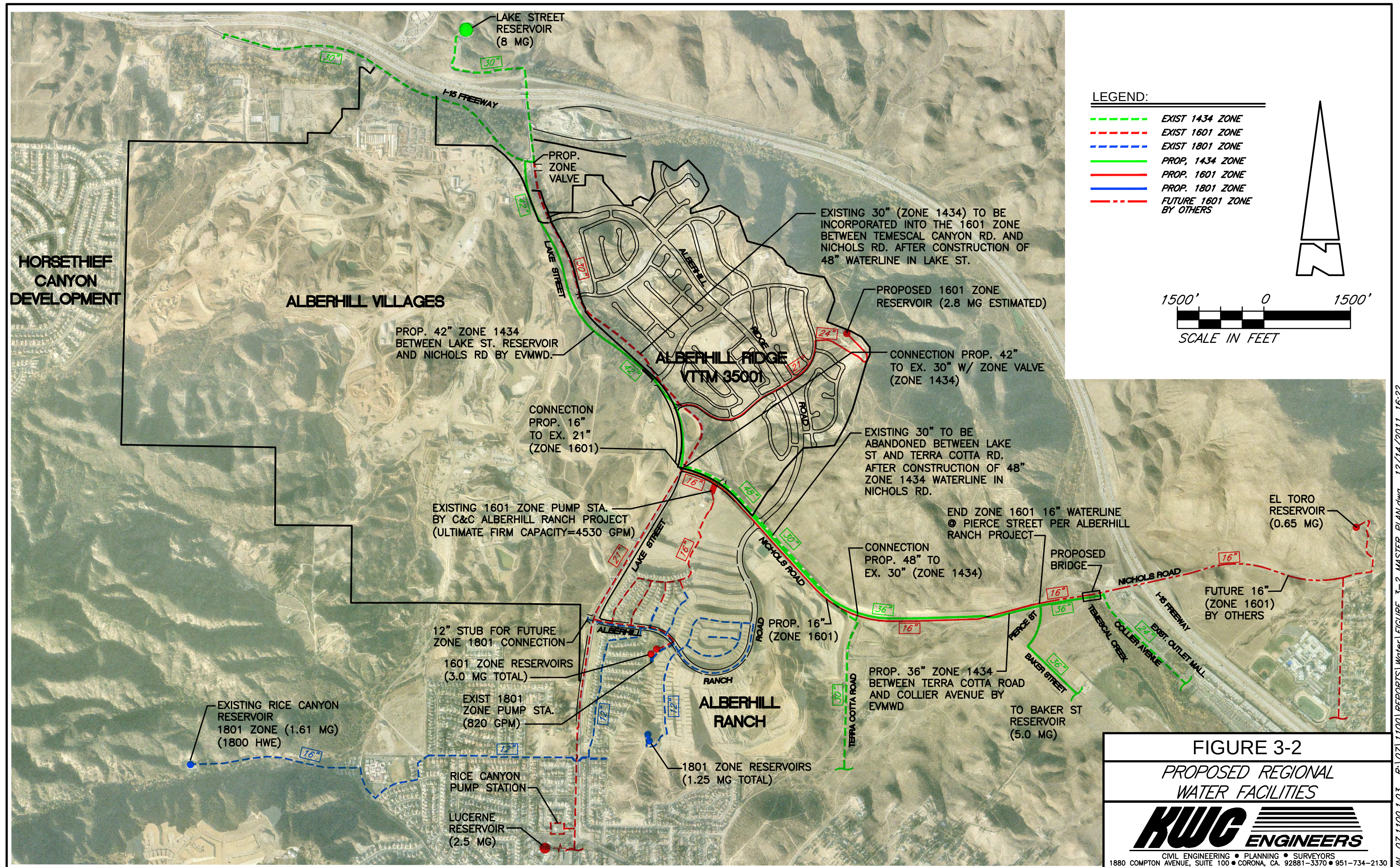


FIGURE 1-1

VICINITY MAP

KWC ENGINEERS

CIVIL ENGINEERING • PLANNING • SURVEYORS
1880 COMPTON AVENUE, SUITE 100 • CORONA, CA. 92881-3370 • 951-734-2130



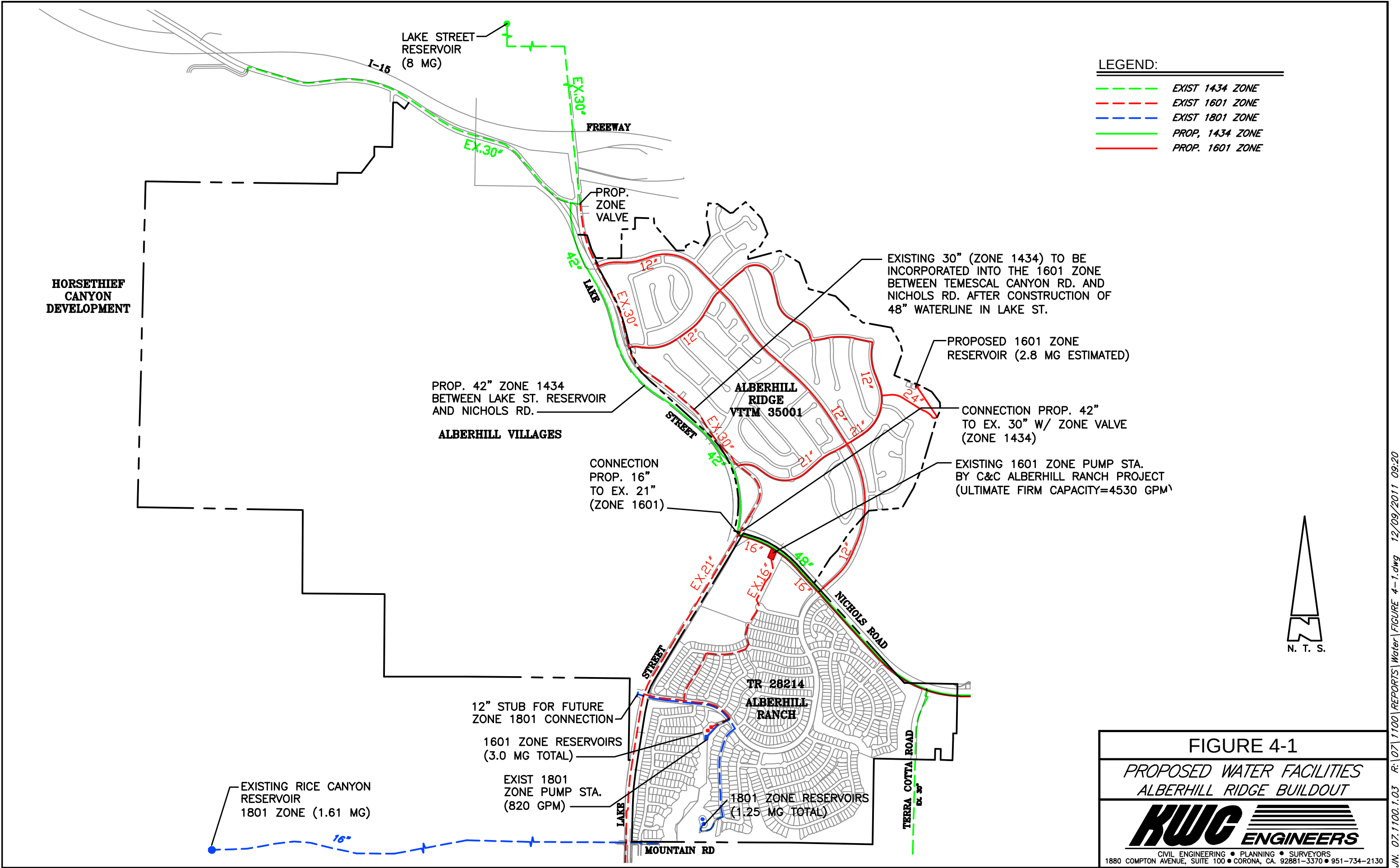


FIGURE 4-1

PROPOSED WATER FACILITIES
ALBERHILL RIDGE BUILDOUT

KWC

ENGINEERS

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JN. 07.1100.1.03 R: 1071100 | REPORTS | Water | FIGURE 4-1.dwg 12/09/2011 09:20

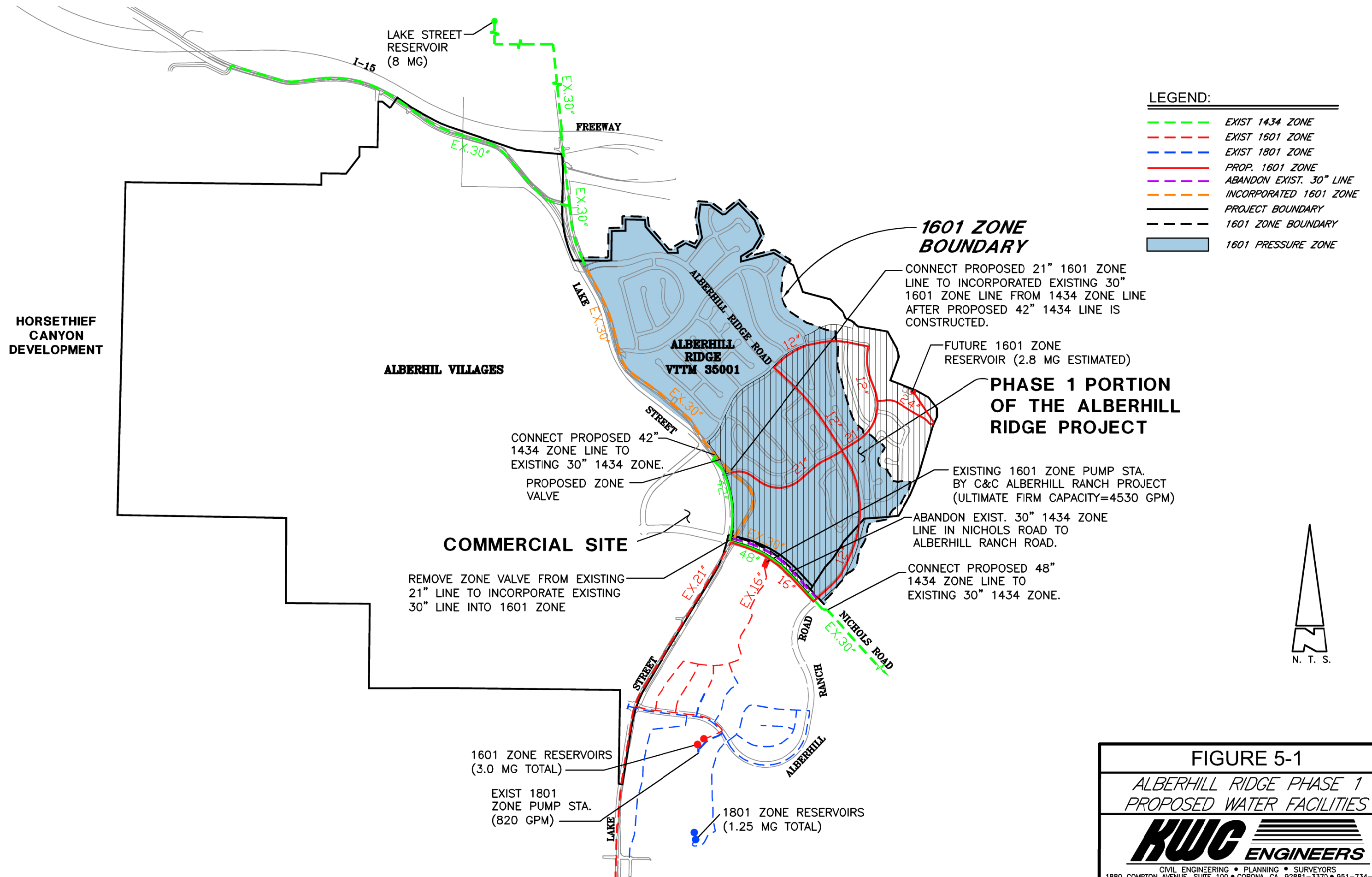


FIGURE 5-1

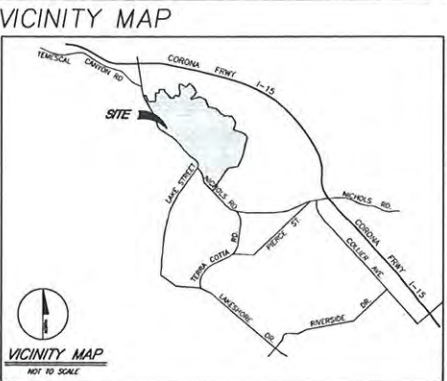
*ALBERHILL RIDGE PHASE 1
PROPOSED WATER FACILITIES*

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ALBERHILL RIDGE VTTM 35001 - LOTTING STUDY/LAND USE PLAN

CITY OF LAKE ELSINORE, CA



PREPARED FOR:
 CASTLE & COOKE LAKE ELSINORE WEST, INC.
 4113 PEARL STREET
 LAKE ELSINORE, CA 92530
 (951) 245-0476

PREPARED BY:



STUDY DATE	IDENTIFIER
08/08/11	BY: MCT
08/08/11	DATE OF REVISION

VICINITY MAP

NOT TO SCALE



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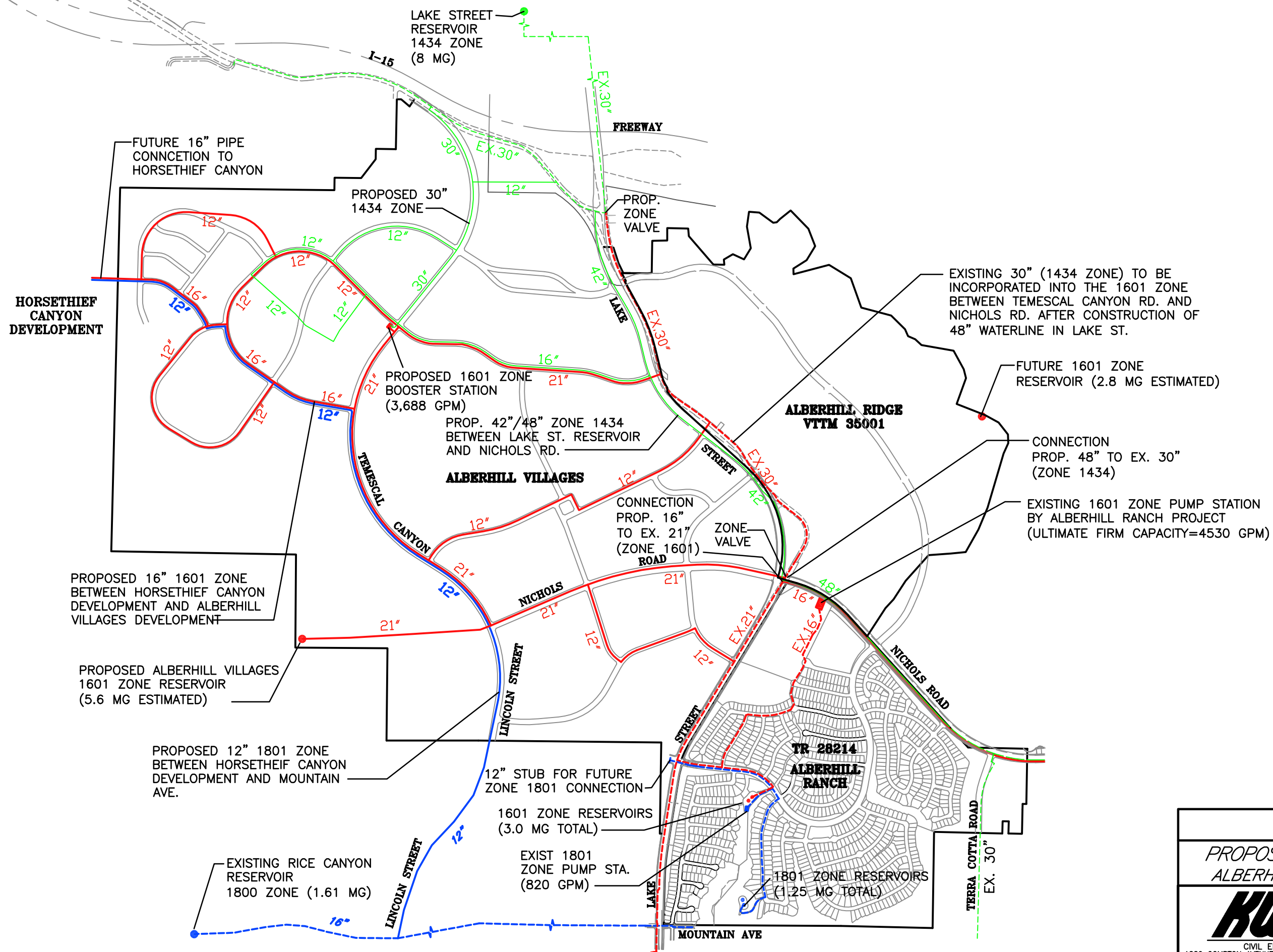


FIGURE 4-1
PROPOSED WATER FACILITIES
ALBERHILL VILLAGES PROJECT

The logo for KWC ENGINEERS. It features the letters "KWC" in a large, bold, italicized sans-serif font. To the right of "KWC" is a graphic element consisting of five horizontal parallel lines of increasing length, creating a sense of motion or a stylized "E". Below this graphic, the word "ENGINEERS" is written in a smaller, bold, italicized sans-serif font.

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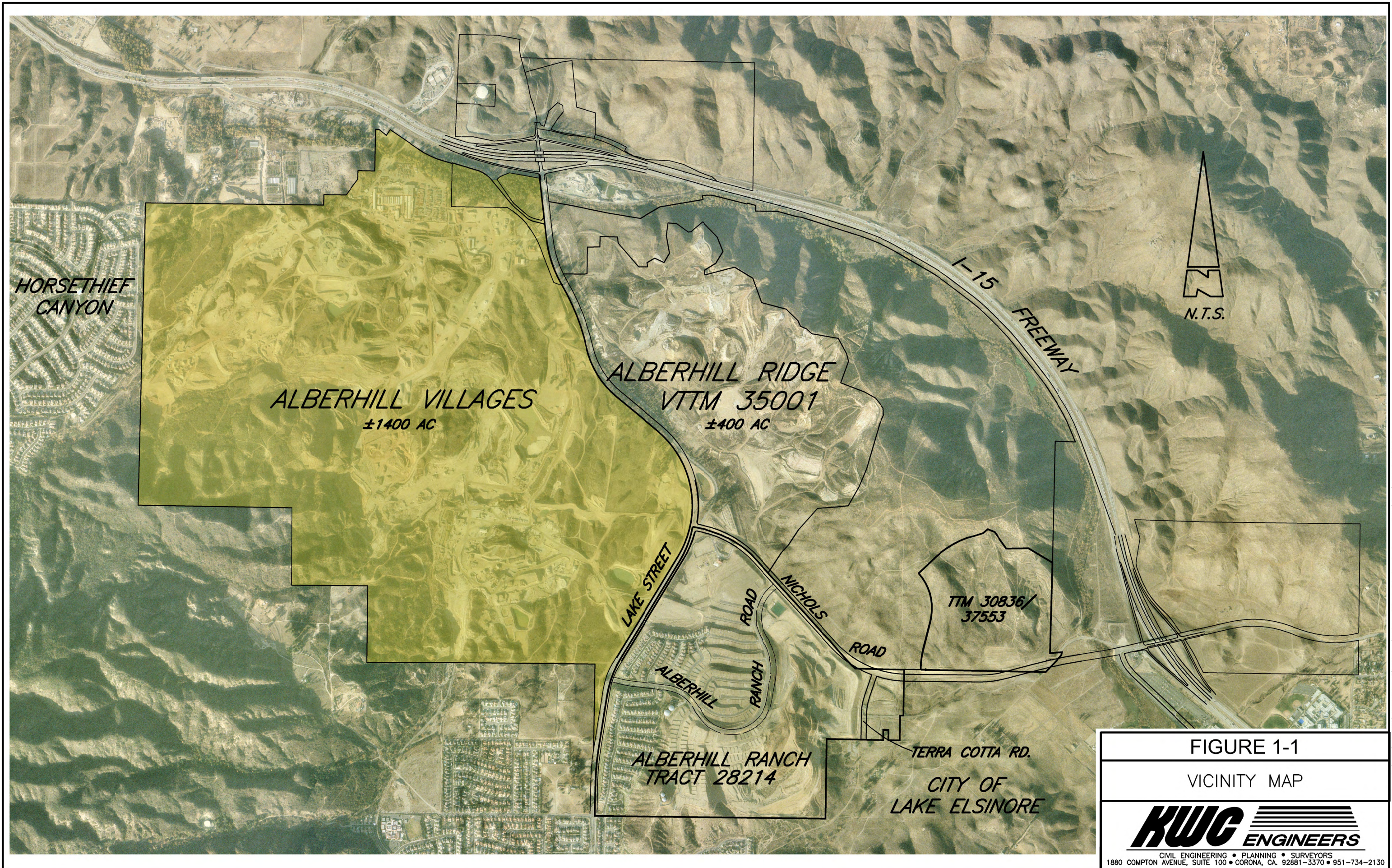
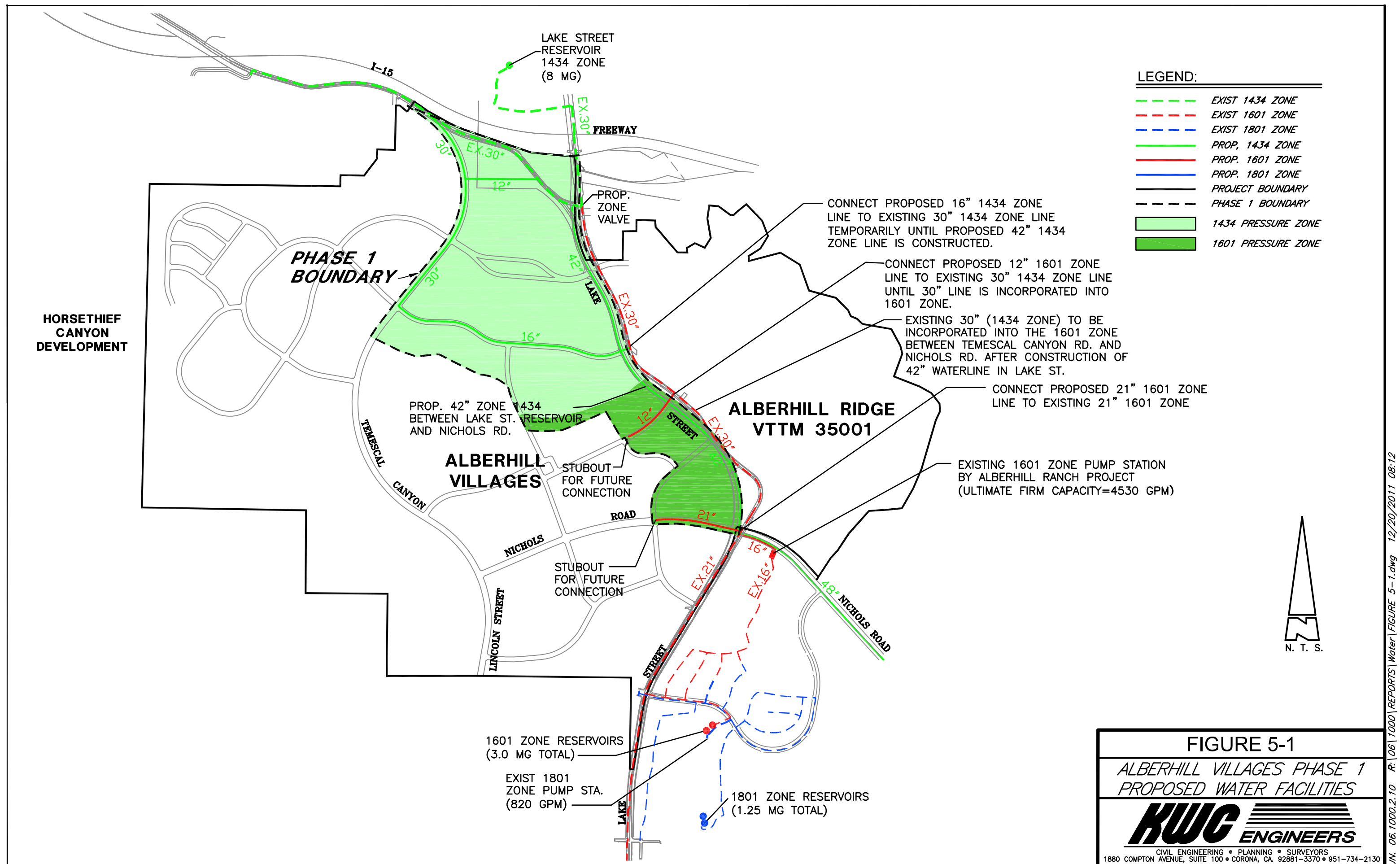


FIGURE 1-1

VICINITY MAP



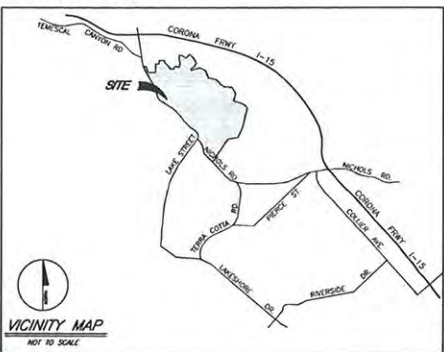
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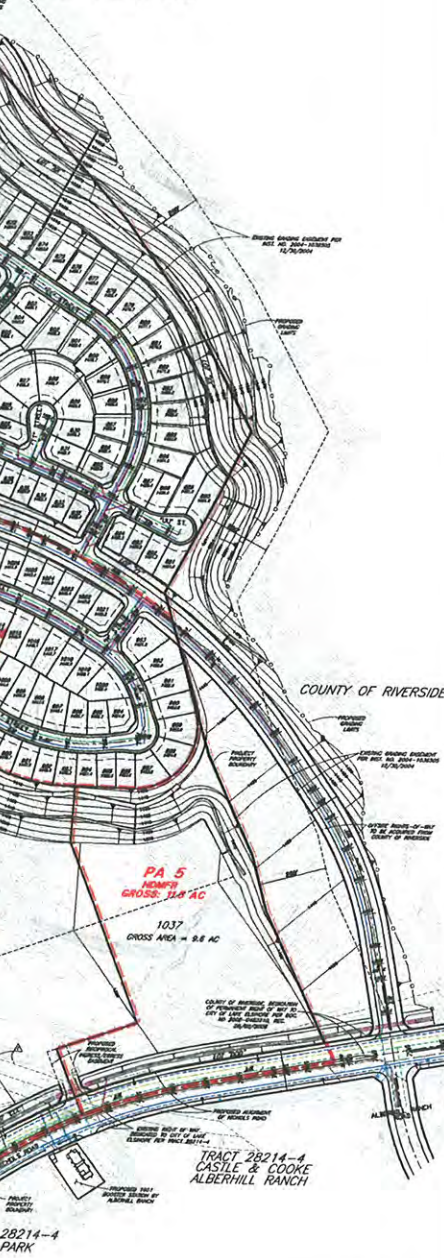
ALBERHILL RIDGE VTTM 35001 - LOTTING STUDY/LAND USE PLAN

CITY OF LAKE ELSINORE, CA

VICINITY MAP



COUNTY OF RIVERSIDE



STUDY DATE	IDENTIFIER
08/08/11	BY: MCT
08/08/11	DATE OF REVIEW

PREPARED BY:



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PREPARED FOR:

CASTLE & COOKE LAKE ELSINORE WEST, INC.
4113 PEARL STREET
LAKE ELSINORE, CA 92530
(951) 245-0476



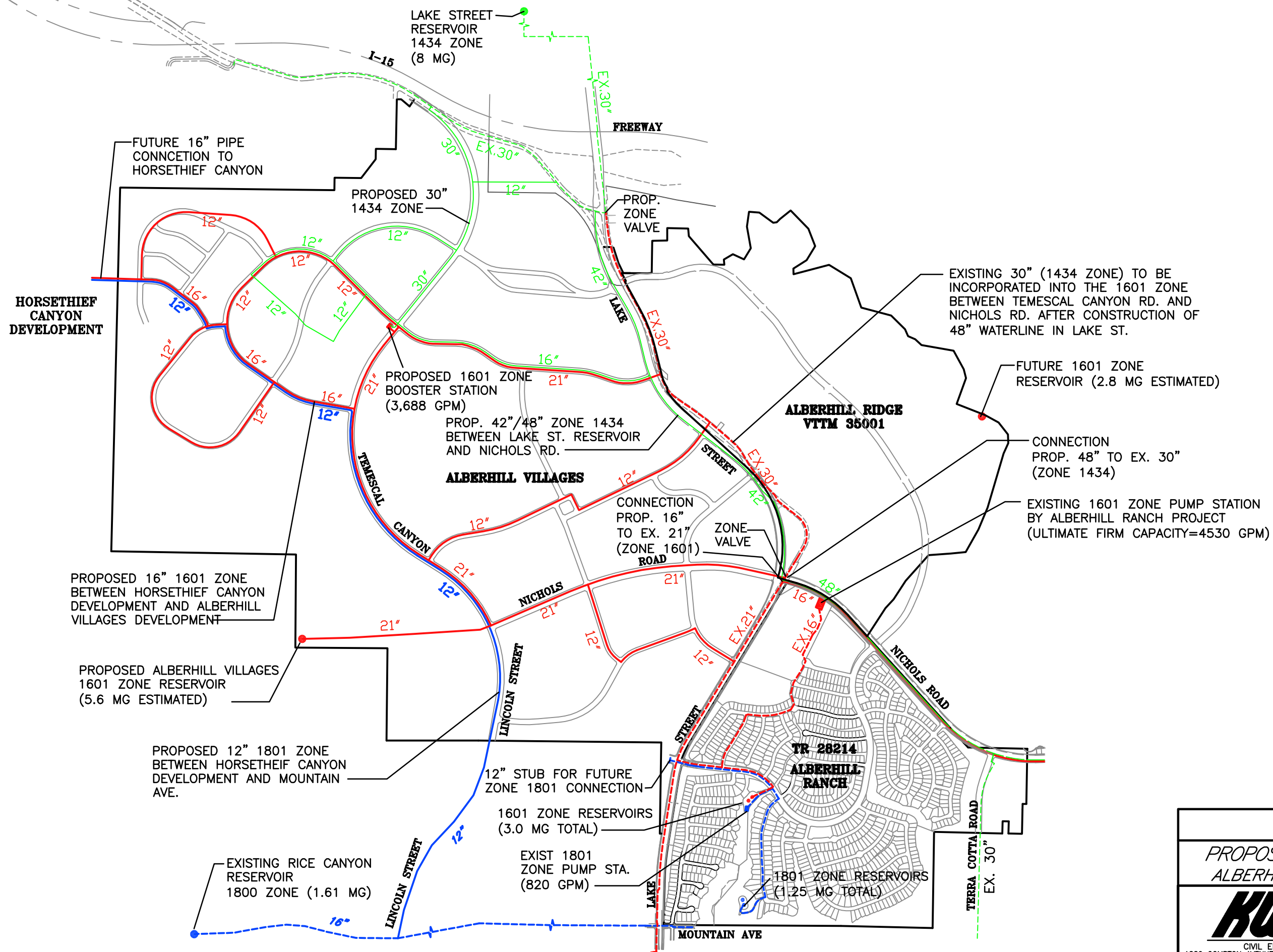


FIGURE 4-1
PROPOSED WATER FACILITIES
ALBERHILL VILLAGES PROJECT

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Appendix C

Demand Calculation (KWC Engineer –Facilities Master Plan -Appendix E)

Detailed land use description and water demands calculated in the KWC Engineers report of December 2011 for Alberhill Villa Villagesges and Alberhill Ridge projects

PRELIMINARY WATER FACILITIES PLAN

for ALBERHILL RIDGE PROJECT

in the City of Lake Elsinore,
County of Riverside, California



PREPARED FOR :



Castle & Cooke Lake Elsinore West, Inc.
6455 Alberhill Ranch Road
Lake Elsinore, CA 92530

PREPARED BY:



KWC Engineers
1880 Compton Avenue, Suite 100
Corona, CA 92881
Tel: (951) 734-2130
www.kwcengineers.com

December 06, 2011

Mike C. Taing, RCE 64263

E

ESTIMATED PROJECT WATER DEMANDS

Alberhill Ridge Project (from VTTM 35001 Lotting Study/Land Use Plan Dated 08/08/11)

1601 Zone Projected Water Demands (per conceptual Land Use Plan)						
Watershed ID	Contributory Area (AC)	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)	
VTTM 35001 Dated 08/08/11						
PA 1 - Mixed Use						
Retail/Office	9.8	General Commercial	0.02	0.05	0.11	J9
PA 2a						
Single Family-5DU/AC (per unit basis)	144	Medium Density	0.07	0.14	0.32	J30
PA 2b						
Single Family-5DU/AC (per unit basis)	185	Medium Density	0.09	0.19	0.42	J8
PA 2c						
Single Family-5DU/AC (per unit basis)	125	Medium Density	0.06	0.13	0.28	J6
PA 2d						
Park	5.9	Open Space/Recreation	0.02	0.05	0.11	J12
PA 2e						
Elementary School	850	Public Inst/Schools	0.05	0.10	0.23	J5
PA 3 - Mixed Use						
Retail/Office	34.6	General Commercial	0.09	0.17	0.39	J3
PA 4						
Single Family-5DU/AC (per unit basis)	65	Medium Density	0.03	0.07	0.15	J5
PA 5 - HDMFR						
Multi Family-24DU/AC	11.5	High Density	0.06	0.12	0.26	J4
PA 8a						
Single Family-5DU/AC (per unit basis)	71	Medium Density	0.04	0.07	0.16	J15
PA 8b						
Single Family-5DU/AC (per unit basis)	112	Medium Density	0.06	0.11	0.25	J11
PA 8c						
Single Family-5DU/AC (per unit basis)	157	Medium Density	0.08	0.16	0.35	J14
PA 8d						
Single Family-5DU/AC (per unit basis)	100	Medium Density	0.05	0.10	0.23	J10
Total for Alberhill Ridge 1601 Zone			0.72	1.45	3.25	

Project Water Demand Summary Table

Watershed ID	Ultimate Flows		
	Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)
Alberhill Ridge			
1601 Zone	0.72	1.45	3.25

Reservoir Storage Requirement Table

	Maximum Daily Demand (mgd)	Required Operational & Emergency Storage (MG)	Required Fire Flow Storage (MG)	Total Required Storage (MG)
Alberhill Ridge				
1601 Zone	1.45	1.88	0.96	2.84

Note: Fire Flow Demand is set at 0.96 MG (4000 GPM for 4 hours) when there is a school present.

Water		
	Average Daily Demand	
Single Family or Duplex	500	gal/unit
	2500	gal/acre
Multi Family Low Rise	400	gal/unit
	4000	gal/acre
Multi Family High Rise	300	gal/unit
Commercial Use	3000	gal/acre
Commercial/Industrial Mix	100	gal/1000 sq. ft.
Commercial Residential Mix	120	gal/1000 sq. ft.
Hotels	350	gal/unit
Schools, Parks	60	gal/student
	4000	gal/acre

PRELIMINARY WATER FACILITIES PLAN

for ALBERHILL VILLAGES SPECIFIC PLAN in the City of Lake Elsinore, County of Riverside, California



PREPARED FOR :



Pacific Clay Products, Inc.
14741 Lake Street,
Lake Elsinore, CA 92530

PREPARED BY:



KWC Engineers
1880 Compton Avenue, Suite 100
Corona, CA 92881
Tel: (951) 734-2130
www.kwcengineers.com

December 20, 2011

Mike C. Taing, RCE 64263

E

ESTIMATED PROJECT WATER DEMANDS

Alberhill Villages (from Specific Plan)

1434 Zone Projected Water Demands (per conceptual Land Use Plan)						
Watershed ID	Contributory Area (AC) or Units	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)	
University Village, University Town Center						
PA 1a						
College Campus	62	School	0.25	0.50	1.12	J3
Multi-Family-35DU/AC (per Unit Basis)	445	Multi Family High Rise	0.13	0.27	0.60	J4
PA 1b- Commercial/Mixed Use						
Residential-52DU/AC (per Unit Basis)	1000	Multi Family High Rise	0.30	0.60	1.35	J6
Office	11.5	Commercial Office	0.03	0.07	0.16	J9
Retail	34.0	General Commercial	0.09	0.17	0.38	J9
PA 1c- Office Medical						
Office	18.0	Commercial Office	0.05	0.11	0.24	J7
Retail	4.5	General Commercial	0.01	0.02	0.05	J7
Multi Family High Rise (per Unit Basis)	1100	Multi Family High Rise	0.33	0.66	1.49	J7
Subtotal			1.20	2.39	5.38	
Parkview Village						
PA 2a						
Multi-Family-35DU/AC (per Unit Basis)	440	Multi Family High Rise	0.13	0.26	0.59	J5
PA 2b						
Multi-Family-35DU/AC (per Unit Basis)	595	Multi Family High Rise	0.18	0.36	0.80	J12
Multi-Family-35DU/AC (per Unit Basis)	490	Multi Family High Rise	0.15	0.29	0.66	J12
PA 2c						
Single Family-7DU/AC	25.5	Medium High Density	0.08	0.15	0.34	J10
Subtotal			0.53	1.07	2.40	
Lakeside Village						
PA 4a						
Multi-Family-35DU/AC (per Unit Basis)	595	Multi Family High Rise	0.18	0.36	0.80	J4
Multi-Family-35DU/AC (per Unit Basis)	210	Multi Family High Rise	0.06	0.13	0.28	J4
Single Family-10DU/AC	13.0	Medium High Density	0.04	0.08	0.18	J4
Single Family-10DU/AC	9.0	Medium High Density	0.03	0.05	0.12	J4
Park	40.0	Parks/Landscaping	0.16	0.32	0.72	J2 and J3
PA 4c- Entertainment						
Residential-30DU/AC (per Unit Basis)	75	Multi Family High Rise	0.02	0.05	0.10	J2
Retail	8.5	General Commercial	0.02	0.04	0.10	J2
Subtotal			0.51	1.02	2.30	
Total for Alberhill Villages 1434 Zone			2.24	4.48	10.09	

Alberhill Villages (from Specific Plan)

1601 Zone Projected Water Demands (per conceptual Land Use Plan)						
Watershed ID	Contributory Area (AC) or Units	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)	
Parkview Village						
PA 2a						
Single Family-4.5DU/AC	4.0	Medium Density	0.01	0.02	0.04	J17
Single Family-4.5DU/AC	11.5	Medium Density	0.03	0.05	0.12	J21
Single Family-4.5DU/AC	11.0	Medium Density	0.03	0.05	0.11	J21
Single Family-4.5DU/AC	8.5	Medium Density	0.02	0.04	0.09	J17
Single Family-4.5DU/AC	7.1	Medium Density	0.02	0.03	0.07	J19
Single Family-4.5DU/AC	7.9	Medium Density	0.02	0.04	0.08	J21
Single Family-4.5DU/AC	43.0	Medium Density	0.10	0.20	0.45	J18
Single Family-5DU/AC	35.0	Medium Density	0.08	0.16	0.36	J21
Worship	7.5	Public Institutional	0.02	0.03	0.08	J9
PA 2c						
Park	16.0	Parks/Landscaping	0.06	0.13	0.29	J10
Elementary School	13.0	School	0.05	0.10	0.23	J15
Single Family-6DU/AC	18.0	Medium Density	0.04	0.08	0.19	J16
		Subtotal	0.47	0.94	2.11	
Highland Village						
PA 3b						
OS/Park	55.5	Open Space/Rec./Slopes	0.11	0.22	0.50	J8
		Subtotal	0.11	0.22	0.50	
Lakeside Village, Ridgeview Village, Alberhill Town Center						
PA 4a						
Single Family-5.5DU/AC	7.5	Medium Density	0.02	0.03	0.08	J9
Single Family-5.5DU/AC	19.0	Medium Density	0.04	0.09	0.20	J9
Single Family-5DU/AC	19.0	Medium Density	0.04	0.09	0.20	J8
Single Family-5DU/AC	12.0	Medium Density	0.03	0.06	0.12	J8
Single Family-7DU/AC	13.0	Medium High Density	0.04	0.08	0.18	J11
Single Family-5DU/AC	9.5	Medium Density	0.02	0.04	0.10	J11
Single Family-5.5DU/AC	17.5	Medium Density	0.04	0.08	0.18	J9
PA 4b						
Single Family-10DU/AC	14.0	Medium High Density	0.04	0.08	0.19	J12
Single Family-10DU/AC	8.5	Medium High Density	0.03	0.05	0.11	J12
Single Family-10DU/AC	13.0	Medium High Density	0.04	0.08	0.18	J12
Single Family-7DU/AC	11.0	Medium High Density	0.03	0.07	0.15	J12
Multi-Family-16DU/AC	10.0	High Density	0.05	0.10	0.23	J5
Multi-Family-16DU/AC	16.0	High Density	0.08	0.16	0.36	J12
Park	37.0	Parks/Landscaping	0.15	0.30	0.67	J12
PA 5a						
Middle School	26.0	School	0.10	0.21	0.47	J1
Single Family-5DU/AC	22.0	Medium Density	0.05	0.10	0.23	J1
PA 5b						
Single Family-7DU/AC	11.5	Medium High Density	0.03	0.07	0.16	J2
Multi-Family-16DU/AC	12.0	High Density	0.06	0.12	0.27	J2
Single Family-6DU/AC	26.0	Medium Density	0.06	0.12	0.27	J13
Worship	7.5	Public Institutional	0.02	0.03	0.08	J13
PA 6a						
Residential-42DU/AC (per Unit Basis)	200	Multi Family High Rise	0.06	0.12	0.27	J3
Office	4.5	Commercial Office	0.01	0.03	0.06	J3
Retail	13.5	General Commercial	0.03	0.07	0.15	J3
PA 6b						
Residential-42DU/AC (per Unit Basis)	200	Multi Family High Rise	0.06	0.12	0.27	J3
Office	4.5	Commercial Office	0.01	0.03	0.06	J3
Retail	13.5	General Commercial	0.03	0.07	0.15	J3
		Subtotal	1.19	2.38	5.36	
Total for Alberhill Villages 1601 Zone			1.77	3.54	7.97	

Alberhill Villages (from Specific Plan)

1801 Zone Projected Water Demands (per conceptual Land Use Plan)						
Watershed ID	Contributory Area (AC) or Units	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)	
Highland Village						
PA 3a						
Hillside Residential (per Unit Basis) *	25	Low Density	0.02	0.04	0.08	NOT MODELED
		Subtotal	0.02	0.04	0.08	
Total for Alberhill Villages 1801 Zone			0.02	0.04	0.08	

* Estimated 25 Estate Homes.

Project Water Demand Summary Table

Watershed ID	Ultimate Flows		
	Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)
Alberhill Villages			
1801 Zone	0.02	0.04	0.08
1601 Zone	1.77	3.54	7.97
1434 Zone	2.24	4.48	10.09
Total	4.75	9.51	21.39

Reservoir Storage Requirement Table

	Maximum Daily Demand (mgd)	Required Operational & Emergency Storage (MG)	Required Fire Flow Storage (MG)	Total Required Storage (MG)
Alberhill Villages				
1801 Zone	0.04	0.05	0.24	0.29
1601 Zone	3.54	4.61	0.96	5.57
1434 Zone	4.48	5.83	0.96	6.79

Note: Fire Flow Demand is set at 0.96 MG (4000 GPM for 4 hours) when there is a school present.
 Fire Flow Demand for 1801 Zone within Alberhill Villages is based on (1000 GPM for 4 hours).

Water		
	Average Daily Demand	
Single Family or Duplex	500	gal/unit
	2500	gal/acre
Multi Family Low Rise	400	gal/unit
	4000	gal/acre
Multi Family High Rise	300	gal/unit
Commercial Use	3000	gal/acre
Commercial/Industrial Mix	100	gal/1000 sq. ft.
Commercial Residential Mix	120	gal/1000 sq. ft.
Hotels	350	gal/unit
Schools, Parks	60	gal/student
	4000	gal/acre

Water (from master plan FEB 2008)

Land Use category	Recommended Return-to-sewer ratio (%)	Recommended Wastewater flow factor	
Residential			
Mountainous (0-.1du/ac)		250	gpd/acre
Very Low Density (.1-.5du/ac)		400	gpd/acre
Low Density (.5-2du/ac)		800	gpd/acre
Low Medium Density (2-4du/ac)		2000	gpd/acre
Medium Density (4-6du/ac)		2300	gpd/acre
Medium High Density (6-12du/ac)		3000	gpd/acre
High Density (12-24du/ac)		5000	gpd/acre
Mixed Use (24du/ac max)		2300	gpd/acre
Non-Residential			
Business Park		1200	gpd/acre
Commercial office		3000	gpd/acre
Freeway Business		1300	gpd/acre
General Commercial		2500	gpd/acre
Industrial		3000	gpd/acre
Limited Industrial		900	gpd/acre
Neighborhood Commercial		1000	gpd/acre
Open Space/Recreation/Slopes		2000	gpd/acre
Public Institutional		2300	gpd/acre
Schools		4000	gpd/acre
Tourist Commercial		2500	gpd/acre
Parks/Landscaping		4000	gpd/acre

Water for Residential DU (master plan FEB 2008)

Land Use category	Recommended Wastewater flow factor	
Residential		
Low Density (<2du/ac)	750	gpd/du
Low Medium Density (2-4du/ac)	600	gpd/du
Medium Density (4-6du/ac)	500	gpd/du
Medium High Density (6-12du/ac)	450	gpd/du
High Density (12-24du/ac)	350	gpd/du

PRELIMINARY WATER FACILITIES PLAN

for ALBERHILL RIDGE PROJECT

in the City of Lake Elsinore,
County of Riverside, California



PREPARED FOR :



Castle & Cooke Lake Elsinore West, Inc.
6455 Alberhill Ranch Road
Lake Elsinore, CA 92530

PREPARED BY:



KWC Engineers
1880 Compton Avenue, Suite 100
Corona, CA 92881
Tel: (951) 734-2130
www.kwcengineers.com

December 06, 2011

Mike C. Taing, RCE 64263

E

ESTIMATED PROJECT WATER DEMANDS

Alberhill Ridge Project (from VTTM 35001 Lotting Study/Land Use Plan Dated 08/08/11)

1601 Zone Projected Water Demands (per conceptual Land Use Plan)						
Watershed ID	Contributory Area (AC)	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)	
VTTM 35001 Dated 08/08/11						
PA 1 - Mixed Use						
Retail/Office	9.8	General Commercial	0.02	0.05	0.11	J9
PA 2a						
Single Family-5DU/AC (per unit basis)	144	Medium Density	0.07	0.14	0.32	J30
PA 2b						
Single Family-5DU/AC (per unit basis)	185	Medium Density	0.09	0.19	0.42	J8
PA 2c						
Single Family-5DU/AC (per unit basis)	125	Medium Density	0.06	0.13	0.28	J6
PA 2d						
Park	5.9	Open Space/Recreation	0.02	0.05	0.11	J12
PA 2e						
Elementary School	850	Public Inst/Schools	0.05	0.10	0.23	J5
PA 3 - Mixed Use						
Retail/Office	34.6	General Commercial	0.09	0.17	0.39	J3
PA 4						
Single Family-5DU/AC (per unit basis)	65	Medium Density	0.03	0.07	0.15	J5
PA 5 - HDMFR						
Multi Family-24DU/AC	11.5	High Density	0.06	0.12	0.26	J4
PA 8a						
Single Family-5DU/AC (per unit basis)	71	Medium Density	0.04	0.07	0.16	J15
PA 8b						
Single Family-5DU/AC (per unit basis)	112	Medium Density	0.06	0.11	0.25	J11
PA 8c						
Single Family-5DU/AC (per unit basis)	157	Medium Density	0.08	0.16	0.35	J14
PA 8d						
Single Family-5DU/AC (per unit basis)	100	Medium Density	0.05	0.10	0.23	J10
Total for Alberhill Ridge 1601 Zone			0.72	1.45	3.25	

Project Water Demand Summary Table

Watershed ID	Ultimate Flows		
	Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)
Alberhill Ridge			
1601 Zone	0.72	1.45	3.25

Reservoir Storage Requirement Table

	Maximum Daily Demand (mgd)	Required Operational & Emergency Storage (MG)	Required Fire Flow Storage (MG)	Total Required Storage (MG)
Alberhill Ridge				
1601 Zone	1.45	1.88	0.96	2.84

Note: Fire Flow Demand is set at 0.96 MG (4000 GPM for 4 hours) when there is a school present.

Water		
	Average Daily Demand	
Single Family or Duplex	500	gal/unit
	2500	gal/acre
Multi Family Low Rise	400	gal/unit
	4000	gal/acre
Multi Family High Rise	300	gal/unit
Commercial Use	3000	gal/acre
Commercial/Industrial Mix	100	gal/1000 sq. ft.
Commercial Residential Mix	120	gal/1000 sq. ft.
Hotels	350	gal/unit
Schools, Parks	60	gal/student
	4000	gal/acre

Appendix D

Will-Serve List (as of August 2010)

All developments that EVMWD has committed (as of December 2011) to serve with potable water are included on the will-serve list.

Pending Will Serve Connections

Regional

PAID - CONNECTED IN FULL - FEES DUE

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
1303-1	9/18/2008	Regency Center, LP: 36068 Hidden Springs Rds, Suite K, Wildomar, CA	Commerical-Charo Chicken	18816	9.18	4.50	2.17	0.00
1605-1	9/15/2008	China Buffet: 31712 Casino Drive, Suite B&C, Lake Elsinore, CA	Restaurant-Café China Buffet		4.34	12.50	23.03	0.00
2076-0	8/8/2007	Hassan Paris Roostai: 31681 Riverside Drive, Lake Elsinore, CA	Commerical - Restaurant	Lots: 1	0.57	1.00	2.22	0.00
2167-1	5/22/2008	Dana Te: 19980 Grand Avenue, Unit C, Lake Elsinore, CA	Commerical-Fly High Chinese Express Restaurant	Lots: 1	1.01	12.50	1.34	0.00
2201-0	9/16/2008	Westmar Property Management , LLC: 23905 Clinton Keith Road, Suites 101 & 102, Wildomar, CA	Commerical-Extreme Pizza	Lots: 1	7.18	1.60	7.18	0.00
851-1	9/23/2008	Xiang Kaizhang: 31810 Grape Street, Unit C, Lake Elsinore, CA 92530	Commerical -Peony Restaurant		9.35	4.50	4.67	0.00
981-1	5/29/2009	Yeun Jo: 31712 Casino Drive, #5A, Lake Elsinore	Restaurant-Nana's Café	Lots: 1	7.61	12.50	8.75	0.00
					39.23	49.10	49.35	0.00

PAID - NEVER CONNECTED

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
1861-4	11/30/2010	Southern CA Primary Care Medical: 31581 Canyon Estates Drive, Lake Elsinore, CA	Commercial - Medical Ctr Bldg.	PM 30832, Parcel 5 Lots: 1	0.00	0.00	4.92	2.60
2041-0	6/19/2007	City of Lake Elsinore: 41725 Rosetta Canyon Drive, Lake Elsinore, CA	Commerical-Fire Station	Parcel A Lots: 1	0.00	0.00	2.62	3.20
					0.00	0.00	7.54	5.80

PAID - PARTIALLY CONNECTED

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water

Pending Will Serve Connections

Regional

PAID - PARTIALLY CONNECTED

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
1156-17	8/1/2011	D. R. Horton: SW of Ramsgate Drive & Elsinore Hills Drive	Tract	31792 Lots: 39 of 190	128.00	128.00	62.00	62.00
1177-7	5/10/2011	Richmond American Homes: De La Rosa Project	Residential	32503 Lots: 36	25.00	25.00	35.00	35.00
1183-0	5/26/2004	Civil Solutions: Watkins Circle, Wildomar, CA	Residential	PM 12317 Lots: 3	0.00	1.00	0.00	2.00
1298-0	8/30/2005	Brandon Wesselink: 5 Lots Joy Avenue, Lake Elsinore, CA	Residential	Lots: 5	0.00	2.00	0.00	3.00
1586-13	7/25/2011	Ryland Homes: Alberhill Ranch	Tract	Tr 28214-5 Lots: 51	160.00	160.00	60.00	60.00
1686-11	8/31/2011	Lennar Homes: Palomar Street northerly of Clinton Keith, Wildomar, CA	Tract	30939 Lots: 13	41.00	41.00	3.00	3.00
1809-4	1/2/2008	Elsinore Homes: Wildomar, CA 92530	Residential	Tr 30997 Ranches II Lots: 33	26.00	26.00	7.00	7.00
1923-6	10/25/2010	Pardee Construction Company: Canyon Hills	Tract	30493-6, PA 21-A Lots: 204	132.00	132.00	72.00	72.00
1924-10	9/7/2011	Richmond American Homes: Canyon Hills	Tract	31706, -1, -4, PA 23 Lots: 93	161.00	161.00	93.00	93.00
1927-6	12/4/2009	Pulte Homes: Canyon Hills	PA 21-B, PA-24	30493 & -4-5-6-7-8 Lots: 274	145.00	145.00	129.00	129.00
1929-9	1/21/2011	Richmond American Homes: Ramsgate Project	Residential	25477 Lots: 24	202.00	202.00	11.00	11.00
2012-13	4/20/2011	K. Hovnanian: Westerly of McVicar Canyon Park Road, Lake Elsinore, CA	Tract	Tr 32337-2 Lots: 105	11.00	11.00	94.00	94.00
2013-8	5/19/2009	K. Hovnanian: Easterly of McVicar Canyon Park Road, Lake Elsinore, CA	Tract	Tr 32337-1 Lots: 94	79.00	79.00	15.00	15.00
2037-8	7/2/2010	Pardee Homes: Canyon Hills, PA 29	Tract	30494-3 Lots: 102	2.00	2.00	100.00	100.00

Pending Will Serve Connections

Regional

PAID - PARTIALLY CONNECTED

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2038-12	8/9/2011	Pardee Homes: Canyon Hills, PA 30A	Tract	30494-1 Lots: 165	7.00	7.00	151.00	151.00
2039-8	8/12/2011	Pardee Homes: Canyon Hills, PA 30B	Tract	30494-2 Lots: 157	80.00	80.00	66.00	66.00
2059-2	8/19/2008	W. L. Homes LLC dba John Laing Homes: Westerly of Mission Trail, Lake Elsinore, CA	Residential-East Lake Specific Plan	Tr 31920-4, -5, -6 Lots: 223	9.00	9.00	214.00	214.00
2082-4	4/21/2009	Van Daele Development Carmel Oakmont 222, LLC: Clinton Keith btwn I-15 & George Avenue, Wildomar, CA	Tract	30155 Lots: 218	208.00	208.00	10.00	10.00
2165-2	8/7/2008	Wesco Homes: Tiller Lane, Lake Elsinore, CA	Residential	32996 Lots: 48	3.00	3.00	45.00	45.00
2207-4	8/8/2011	K. Hovnanian Homes: Gateway Drive, Lake Elsinore, CA	Residential	32337-F Lots: 110	0.00	0.00	110.00	110.00
2240-2	2/17/2010	Clark Contractors, Inc.: 32406 Clinton Keith Road, Wildomar, CA 92595	Commerical	Plot Plan 22461 Lots: 1	0.00	0.00	6.68	1.00
2257-1	1/25/2010	Dan Morrar: 32374 Clinton Keith Road, Wildomar, CA	Commerical	Lots: 21	0.00	0.00	0.00	0.00
2279-2	7/2/2010	Pardee Homes: Canyon Hills, PA 29	Tract	30494-5 Lots: 36	0.00	0.00	0.00	0.00
2287-7	7/25/2011	Meritage Homes: South of Catt Road, East of Palomar, Wildomar, CA 92530	Tract	31353 Lots: 75	0.00	0.00	0.00	0.00
2292-1	9/7/2010	SMP Realty Holdings, Inc. c/o Broadway St Trust: 16395 Broadway Street, Lake Elsinore, CA	Residential - Home/Casita	Census Tract Lots: 1	0.00	0.00	0.00	0.00
2317-0	5/25/2010	Modesto Gudino: 22151 San Joaquin Drive, Canyon Lake, CA 92587	Residential	Tr 3718, Lot 292 Lots: 1	0.00	0.00	0.00	0.00
2343-3	11/1/2011	Bridge Housing: Bndry of Pottery St./Sumner Ave/Langstaff St/Flood Control Channel	Multi Family (R-3 High Density)	TPM 36193 Lots: 1	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

PAID - PARTIALLY CONNECTED

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2356-0	6/3/2011	Richmond American Homes: Cypress Tract, Canyon Hills, Lake Elsinore, CA	Tract	30493, -6,-7,-8 Lots: 131	0.00	0.00	0.00	0.00
2357-0	1/4/2011	Antonio Rodriguez: 33085 Garner Road, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
2385-1	11/3/2011	Richmond American Homes: Summerly Tract	Residential	31920-4 Lots: 74	0.00	0.00	0.00	0.00
2399-1	11/3/2011	Beazer Homes: Summerly Tract	Tract	31920-6 Lots: 66	0.00	0.00	0.00	0.00
686-0	1/6/2003	James Heiser: 33168 & 33197 Friar Tuck Way, Lake Elsinore, CA 92530	Residential	Lots: 1	0.00	1.00	0.00	1.00
763-5	8/22/2007	Greystone Homes, Inc.: Machado Street/Grand Avenue, Lake Elsinore	Residential	28748, 28748-1 Lots: 97	72.00	72.00	25.00	25.00
801-3	1/2/2008	Meeker Companies: South of Catt Road, East of Palomar, Wildomar, CA 92530	Tract	31353 Lots: 115	9.00	9.00	106.00	106.00
879-7	6/24/2011	D. R. Horton: Canyon Drive, Lake Elsinore, CA 92530	Tract	31345 Lots: Lot 49	19.00	19.00	31.00	31.00
915-0	5/28/2004	George Roudenaz: 21347, 21357, 21359, 21361 Darby Street, Wildomar	Residential	Lots 17, 18, 19, 22 Lots: 4 Lots	0.00	2.00	0.00	2.00
951-0	9/23/2003	Hagan Inv., Inc.: 1311 Heald Avenue, Lake Elsinore, CA	Residential	Lots: 1	2.00	2.00	2.00	2.00
972-9	5/5/2009	KB Home Coastal Inc.: Northwesterly corner of Corydon/Palomar Streets	Tract	30846 Lots: 232	214.00	214.00	19.00	19.00
					1,735.00	1,741.00	1,466.68	1,469.00

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
1121-1	11/20/2008	East West Bank: De Palma Road	Residential	TTM 30760 Lots: 290	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
1280-1	11/16/2007	Lake Elsinore 521, LLC: Southerly of Wasson Canyon Road, Lake Elsinore	Tract	TT 31593 Lots: 521	0.00	0.00	0.00	0.00
1822-1	1/21/2008	Pacific Coast Land Consultants, Inc.: SW Corner of Catt Rd/Hidden Spgs Rd, Wildomar, CA	Commerical	35733 Lots: 2	0.00	0.00	0.00	0.00
1899-1	1/29/2009	Paul Peck & Associates: 12250 Temescal Canyon Road, Corona, CA 92883	Commerical-Reel Lumber	Lots: 1	0.00	0.00	0.00	0.00
2027-1	7/14/2008	Sam Gregory: 405 S. Spring Street, Lake Elsinore, CA 92530	Commerical-Office	Lots: 1	0.00	0.00	0.00	0.00
2123-1	11/12/2008	David Horenstein: Southeasterly corner Clinton Keith/Hidden Springs Road, Wildomar	Commerical-Wildomar Square	Lots: 1	0.00	0.00	75.75	29.50
2131-0	1/7/2008	Toyota Motor Sales, U.S.A., Inc.: Casino Drive, Lake Elsinore, CA	Commerical-Auto Dealership	Lots: 1	0.00	0.00	0.00	0.00
2137-0	1/22/2008	Milestone Wildomar, LLC: 36215 Jana Lane, Wildomar, CA	Commerical-RV Storage	Lots: 1	0.00	0.00	0.00	0.00
2138-0	1/22/2008	SB & O, Inc.: Clinton Keith Road/George Avenue, Wildomar, CA	Commerical-6 Buildings	PM 9806 Lots: 1	0.00	0.00	0.00	0.00
2139-0	1/22/2008	Kenny Robles: Palomar Street/Kilgore Lane, Wildomar, CA	Commerical-Retail	PP22249 Lots: 1	0.00	0.00	0.00	0.00
2142-0	2/5/2008	Holmes Ontiveros Holmes, Inc.: 21275 River Road, Perris, CA	Residential	Lots: 4	0.00	0.00	0.00	0.00
2143-0	2/5/2008	Kish North: Franklin St / Conklin Avenue, Lake Elsinore, CA	Residential	Lots: 2	0.00	0.00	0.00	0.00
2144-0	2/13/2008	MDMG, Inc.: 32150 Clinton Keith Road, Wildomar, CA	Commerical	Lots: 2	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2145-0	2/15/2008	Mr. Benito Navarro: 30338 Baum Avenue, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
2146-0	2/20/2008	Palm Desert Development: Catt Road, Wildomar, CA	Residential-209 Apartment Complex	Lots: 5	0.00	0.00	0.00	0.00
2147-0	2/12/2008	Grace Properties, Inc.: Main Street, Lake Elsinore, CA	Commerical-Coffee Café, Sandwich Deli, Office	Lots: 5	0.00	0.00	0.00	0.00
2148-0	2/12/2008	Carolyn Maguire: Corner of Lowell and Flint Streets	Residential	Lots: 1	0.00	0.00	0.00	0.00
2151-0	4/17/2008	Hall & Foreman, Inc.: Lakeshore Drive-East Lake Specific Plan, Lake Elsinore, Ca	Residential/Retail/Hotel/Marina/Storage/Etc.	TTM 31839 Lots: Unknown	0.00	0.00	0.00	0.00
2152-0	3/4/2008	Hall & Foreman, Inc.: Between Lucerne & Margorie Streets, Lake Elsinore, CA	Residential	Tr 35463 Lots: 48	0.00	0.00	0.00	0.00
2155-0	3/4/2008	Corman Leigh Communities: Lakeshore Drive at Gunnerson Street, Lake Elsinore, CA	Residential-Multi Family	34837 Lots: 1	0.00	0.00	0.00	0.00
2156-0	3/11/2008	Ram Cam Engineering: 29301 Riverside Circle, Lake Elsinore, CA	Commerical-3 Buildings		0.00	0.00	0.00	0.00
2157-0	3/18/2008	City of Lake Elsinore: Spring & Sulphur Sts & Limited Avenue, Lake Elsinore	Commerical-35 Professional Offices	Lots: 2	0.00	0.00	0.00	0.00
2159-0	3/25/2008	FDC Corporation: Channing Way, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
2162-0	4/11/2008	Mayers & Associates Civil Engineering, Inc.: Canyon Hills & Kalanchoe Roads, Lake Elsinore, CA	Elementary School	30493-1, Lot 409 Lots: 1	0.00	0.00	0.00	0.00
2163-0	4/11/2008	Matthew Fagan Consulting Services: Grand Avenue, Lake Elsinore, CA	Residential-25 Townhomes	TTM 35869 Lots: 1	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2169-0	4/17/2008	Jones, Cahl & Associates, Inc.: Northwest corner of Conard and Central Avenues, Lake Elsinore, CA	Commerical-Elsinore Self Storage	PM 20158 Lots: 3	0.00	0.00	0.00	0.00
2172-0	4/28/2008	MDMG, Inc.: Corydon bwtm Melinda Ln and Bryant St, Wildomar, CA	Residential-Condo Complex	TPM 35963 PP22811 Lots: 1	0.00	0.00	0.00	0.00
2176-0	5/20/2008	Pablo Delgado: 29855 Reid Street, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	1.00	0.00
2180-0	6/10/2008	W. B. Allen Construction, Inc.: Mission Trail, Lake Elsinore, CA	Commerical-Retail Stores	PM 19767, Lot 3 Lots: 1	0.00	0.00	0.00	0.00
2181-0	6/10/2008	Hazim Abdulzahra: 28781 Hwy 75, Lake Elsinore, CA	Commerical/Car Wash & Lube, Store, Dry Cleaner	PP 18806 Lots: 1	0.00	0.00	0.00	0.00
2184-0	6/27/2008	Tim Webb: 16910 Monterey Road, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
2185-0	6/27/2008	Tim Webb: 16930 Monterey Road, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
2186-0	6/27/2008	Tim Webb: 16890 Monterey Road, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
2187-0	9/10/2008	Beador Construction Company: 12360 Temescal Canyon Road	Commerical-Offices	Lots: 1	0.00	0.00	0.00	0.00
2189-0	7/22/2008	Mayers & Associates Civil Engineering, Inc.: Canyon Hills Road & Railroad Cyn Road, Lake Elsinore, CA	Commerical-Community Park	30493-1, PA 18 Lots: 1	0.00	0.00	0.00	0.00
2211-0	10/28/2008	GreenbergFarrow: Wildomar Square, SW Corner Clinton Keith and I-15	Commerical-In-N-Out Burger	Lots: 1	0.00	0.00	0.00	0.00
2214-0	12/19/2008	Choa Murrieta, LLC: 23825 Catt Road, Wildomar, CA	Commerical-Candlewood Suites Hotel	Lots: 2	0.00	0.00	0.00	0.00
2218-0	12/19/2008	City of Lake Elsinore: 32040 Riverside Street, Lake Elsinore, Ca	Commerical-State Park	Lots: 1	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2236-0	4/6/2009	KWC Engineers: 28857 Lake Street, Lake Elsinore, CA	Commerical	CUP 2008-15 Lots: 5	0.00	0.00	0.00	0.00
2244-0	5/27/2009	Pfeiler Associates: Northeast corner of Clinton Keith Rd & George Avenue, Wildomar, CA	Commerical	CUP 03545 Lots: 1	0.00	0.00	6.42	13.50
2263-0	10/6/2009	Medofer Engineering, Inc.: Grand Avenue between Santa Rosa Drive and Magnolia St., Lake Elsinore, CA	Commerical		0.00	0.00	0.00	0.00
2264-0	10/7/2009	Ms. Cisneros: 19980 Grand Avenue, Suite M. Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2268-0	11/5/2009	Richard & Richard Co.: NW Corner of Clinton Keith and Stable Lane, Wildomar, CA	Commerical	09-0460 Lots: 2	0.00	0.00	0.00	0.00
2273-1	2/24/2010	Jubran Sarkis: 16746 Lakeshore Drive, Ste D-F, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2285-0	2/4/2010	George Oxenham: 32081 Corydon Street, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2291-0	2/24/2010	Paul Santos: 36068 Hidden Springs Road, Suite K, Wildomar, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2294-0	2/26/2010	Los Tres Amigos: 32391 Riverside Drive, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2295-0	2/26/2010	Haroon Ali: 31712 Casino Drive, Suite 5A, Lake Elsinore, CA	Commerical-Restaurant	Lots: 1	0.00	0.00	0.00	0.00
2296-0	3/1/2010	Celestino Barrios: 31715 Mission Trail Road, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2297-0	3/5/2010	Brett Woodall: 31949 Coyrdon Street, Suite 160, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2298-0	3/8/2010	Brett Woodall: 18333 E. Pasadena Street, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2299-0	3/11/2010	Jose Alvarez: 1503 Lakeshore Drive	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2302-0	3/17/2010	Judy Randie: 31700 Railroad Canyon Road, #1, Canyon Lake, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2303-0	3/25/2010	Williams Manufacturing: 558 Birch Street, Lake Elsinore, CA	Commerical-Manufacturing	Lots: 1	0.00	0.00	0.00	0.00
2304-0	3/25/2010	Manuel Lopez: 311 Minthorn Street, Unit 1, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2307-0	4/29/2010	Frank Conriquez: 581 Birch Street, Unit D, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2308-0	4/30/2010	Rebecca Mendoza: 17600 Collier Avenue, Suite 147A, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2309-0	4/30/2010	California Cart Builder: 29375 Hunco Way, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2310-0	5/11/2010	Jose T. Gill: 31947 Corydon Street Unit 100, Lake Elsinore, CA	Commerical	1,160 Sq Ft Unit Lots: 1	0.00	0.00	0.00	0.00
2311-0	5/11/2010	All Star Automotive Center: 158 Campbell Street, Unit A, Lake Elsinore, CA	Commerical	3,800 Sq Ft Lots: 1	0.00	0.00	0.00	0.00
2315-0	5/20/2010	Hyonghun (Hank) Han: 17600 Collier Avenue, Suite G159	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2316-0	5/21/2010	Martha Robles: 33982 Mission Trail, Unit B, Wildomar, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2318-0	6/10/2010	Richard Hopson: 25321 Railroad Canyon Road, Suite 504, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2319-0	6/21/2010	Roberto Ramos: 31736 Mission Trail, Suite C, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2321-0	6/24/2010	Sudberry Properties: 25341 Railroad Canyon Road,, Suite 601, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
2323-0	7/19/2010	Dale Pentz: 25321 Railroad Canyon Road, Suite 502, Lake Elsinore, CA	Commerical		0.00	0.00	0.00	0.00
2324-0	7/19/2010	Christopher Robinson: 31577 Canyon Estates Drive, Suite 100, Lake Elsinore, CA 92532	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2327-0	7/29/2010	Cam Teng: 31616 Riverside Drive, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2328-0	7/29/2010	Richard Doll: 32373 Corydon Street, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2329-0	8/4/2010	Rex Studios: 18285 Collier Avenue, Suite G, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2332-0	8/11/2010	Roman Medina: 18501 Collier Avenue, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2333-0	8/16/2010	Inland Empire Components: 18277 Pasadena Avenue, Suite 100	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2336-0	8/30/2010	American Fireglass: 592 Crane Street, Lake Elsinore, Ca 92530	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2337-0	8/30/2010	Shelly M. Conti: 21227 Victorian Lane, Wildomar, CA 92595	Residential	Lots: 1	0.00	0.00	0.00	0.00
2344-0	10/7/2010	Mark Frost Company: Bundy Canyon & Mission Trail Roads, Wildomar, CA	Commerical	Lots: 3 To 9	0.00	0.00	0.00	0.00
2350-0	11/1/2010	James P. Champion: 9355 Gum Tree Drive, Corona, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2352-0	12/1/2010	Collision Pros: 18425 Pasadena Street, #9, Lake Elsinore, CA 92530	Commerical	PM 30395 Lots: 1	0.00	0.00	0.00	0.00
2353-0	12/3/2010	Farias Tires & Batteries: 29350 Hunco Way, Suite B, Lake Elsinore, CA 92530	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2355-0	12/9/2010	Stasyi Barth: 371 Railroad Canyon Road, Suite A, Lake Elsinore, CA 92532	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2359-0	1/11/2011	Ken Landry, Jr.: 500 Chaney Street, Suite J, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2360-0	1/17/2011	Gerardo Chavez: 23865 Clinton Keith Road, Wildomar, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2361-0	1/31/2011	Jerry Roberts: 520 Crane Street, Unit D, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2362-0	2/18/2011	Jose Gomez: 311 W. Minthorn Street, Suite #4, Lake Elsinore, CA 92530	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2364-0	3/8/2011	Greenberg Farrow: Cambern Avenue btwn Central Ave & Third St.	Commerical	Lots: 7	0.00	0.00	0.00	0.00
2366-0	3/9/2011	George Rolla: 32081 Corydon Street, Wildomar, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2368-0	3/14/2011	Marina Manolakakis: 31574 Railroad Canyon Road, Suite A. Canyon Lake, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2370-0	3/16/2011	Sunbelt Communities, LLC: South of Bundy Cyn Rd, West of Sunset Avenue	Residential	Golden Hills Lots: 324	0.00	0.00	0.00	0.00
2376-0	4/25/2011	Stater Brothers Markets: 32281 Mission Trail, Lake Elsinore, CA 92530	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2378-0	4/28/2011	Bruce Blinn: 17465 Lakeshore Drive, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2379-0	4/28/2011	Don Pancho's Mexican Food: 32475 Clinton Keith Road, Suite 113, Wildomar, CA	Residential		0.00	0.00	0.00	0.00
2380-0	5/5/2011	Nick Vestakis: 23971 Clinton Keith Road, #101, Wildomar, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2384-0	6/14/2011	Patti Boggs: 31502 Riverside Drive, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2387-0	6/28/2011	Dan Cline Architects, Inc.: 31739 Riverside Drive Suite H, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2388-0	7/5/2011	Javier Rios: 141 N. Main Street, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2394-0	8/15/2011	Trans American Engineering: Highway 74, Across from Rosetta Canyon Road, Lake Elsinore, CA	Commerical	Lots: 2	0.00	0.00	0.00	0.00
2395-0	8/19/2011	Rodney A. Nielsen: 1604 Lakeshore (previously 18135) Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2398-0	8/31/2011	RBF Consulting: Canyon Hills Road and Hillside Drive, Lake Elsinore, CA	Commerical	PM 30962 Lots: 1	0.00	0.00	0.00	0.00
2400-0	9/2/2011	Francesco Dorigo: 1208 W. Flint Street, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2406-0	10/5/2011	Harrison French & Associates: 31805 Grape Street, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2414-0	11/14/2011	Ed Lambert: 17905 & 17915 Collier Avenue, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2415-0	11/21/2011	Elite Dog Detection: 571-I Crane Street, #A, Lake Elsinore, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE PLANNING LETTER

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2416-0	12/9/2011	Joel Perez: 502 Chaney Street, Lake Elsinore, CA 92530	Commerical	Lots: 1	0.00	0.00	0.00	0.00
					0.00	0.00	83.17	43.00

UNPAID - ACTIVE WILL SERVE

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
1685-5	8/31/2011	Lennar Homes: Palomar Street northerly of Clinton Keith, Wildomar, CA	Tract	30839 Lots: 42	0.00	0.00	42.00	42.00
2140-0	2/5/2008	Miguel Ruiz: 112 Lowell Street, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	1.00	1.00
2150-0	3/4/2008	Jeffrey M. Reilly: 31600 Shirley Drive, Lake Elsinore, CA	Residential	Lots: 1	0.00	1.00	1.00	0.00
2166-0	4/15/2008	John Greer: 27950 Robert Street, Perris, CA	Residential-Second Unit	Lots: 1	0.00	0.00	0.00	1.00
2170-0	4/25/2008	Joshua Hobbs: 34709 White Street, Wildomar, CA	Residential	Lots: 1	0.00	1.00	0.00	1.60
2171-0	4/28/2008	Dr. Michael Mahan: 1502 Heald Avenue, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	1.00	1.00
2173-0	5/7/2008	Wood Doctor Construction, Inc.: 20792 Palomar Street, Wildomar, CA	Residential-2 Homes	Lots: 1	0.00	1.00	0.00	1.60
2174-0	5/13/2008	Steve Dobihal: Lakeshore Drive, Lake Elsinore, CA	Unknown - Residential or Recreational	Lots: 1	0.00	0.00	1.00	1.00
2175-0	5/22/2008	Eliseo Sanchez: 183 S. Chestnut Street, Lake Elsinore, CA	Residential-Duplex	Lots: 1	2.00	1.00	0.00	1.60
2301-0	3/11/2010	Mayers & Associates Civil Eng.: Canyon Hills Road to EVMWD easterly boundary	Residential	36116 Lots: 125	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE WILL SERVE

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2347-1	3/29/2011	Charles Wise: 117 Lowell Street, Lake Elsinore, CA	Residential-Multi Family	Lots: 1	0.00	0.00	0.00	0.00
2365-1	9/29/2011	RBF Consulting: Greer Road, West & East	Residential	Lots: 2	0.00	0.00	0.00	0.00
2367-2	9/2/2011	MDMG, Inc.: 21517 & 21521 Waite Street, Wildomar, CA	Commerical		0.00	0.00	0.00	0.00
2375-1	11/3/2011	MDMG, Inc.: 21730 Bundy Canyon Road, Wildomar, CA 92525	Commerical	PM 16803 Lots: 1	0.00	0.00	0.00	0.00
2377-0	4/25/2011	Bundy I-15 LP: 22181 Bundy Canyon Road, Wildomar, CA 92595	Commerical	PM 32257 Lots: 1	0.00	0.00	0.00	0.00
2383-1	9/6/2011	Maricela Velasco: 21011 Walnut Street, Wildomar	Residential	Lots: 1	0.00	0.00	0.00	0.00
2396-0	8/19/2011	Clendenen Development: 32246 Clinton Keith Road, Wildomar, CA	Commerical	Lots: 1	0.00	0.00	0.00	0.00
2397-0	8/22/2011	Max Park: 19993 Grand Avenue, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
2402-0	9/19/2011	Violeta Carlos: 18465 Grand Avenue, Lake Elsinore, CA 92530	Residential	Lots: 1	0.00	0.00	0.00	0.00
2403-0	1/20/2011	Pacific Horizon Homes: 30201 Gutkaes Avenue, Lake Elsinore	Residential	Lots: 1	0.00	0.00	0.00	0.00
2407-0	10/6/2011	Mayers & Associates Civil Engineers: Canyon Hills Drive & Angel Falls Road, Lake Elsinore, CA	Tract	30495, PA 25 Lots: 132	0.00	0.00	0.00	0.00
2408-0	10/6/2011	Lakeshore Homes: 111 N. Poe Street, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
2409-0	10/11/2011	Ann Ward: 16770 & 16800 Gunnerson Road, Lake Elsinore, CA 92530	Residential	Lots: 2	0.00	0.00	0.00	0.00

Pending Will Serve Connections

Regional

UNPAID - ACTIVE WILL SERVE

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2410-0	10/12/2011	Jeanette Fisher: 18479 Grand Avenue, Lake Elsinore, CA	Residential	Lots: 1	0.00	0.00	0.00	0.00
					2.00	4.00	46.00	50.80

Total for Regional

1,776.23 1,794.10 1,652.75 1,568.60

Southern

PAID - PARTIALLY CONNECTED

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
1662-10	7/15/2009	KB Homes Coastal, Inc.: Clinton Keith Road	Tract	22948 Lots: 117	111.00	111.00	6.00	6.00
					111.00	111.00	6.00	6.00

UNPAID - ACTIVE WILL SERVE

ID:	Date	Project	Type	Tract / Lots	Connected EDUs		Pending EDUs	
					Sewer	Water	Sewer	Water
2404-0	9/28/2011	Bruce Lindquist: Corner of Clinton Keith	Commerical	Lots: 1	0.00	0.00	0.00	0.00
					0.00	0.00	0.00	0.00

Total for Southern

111.00 111.00 6.00 6.00

Appendix E

Elsinore Groundwater Basin Bulletin

Elsinore's Groundwater Basin characteristics are taken from California's Department of Water Resources Bulletin 118.

Elsinore Groundwater Basin

- Groundwater Basin Number: 8-4
- County: Riverside
- Surface Area: 25,700 acres (40.2 square miles)

Basin Boundaries and Hydrology

The Elsinore Groundwater Basin underlies the Elsinore Valley in western Riverside County. The basin is bounded on the southwest by the Santa Ana and Elsinore Mountains along the Willard fault, a splay of the active Elsinore fault zone. The basin adjoins the Temecula Valley Groundwater Basin on the southeast at a low surface drainage divide. The basin is bounded on the northwest by the Temescal Subbasin of the Upper Santa Ana River Valley Groundwater Basin at a constriction in Temescal Wash. The basin is bounded on the northeast by nonwater-bearing rocks of the Peninsular Ranges along the Glen Ivy fault. Average annual precipitation ranges from 12 to 14 inches. Lake Elsinore lies in a closed basin formed between strands of the active Elsinore fault zone.

Hydrogeologic Information

Water Bearing Formations

The Elsinore Groundwater Basin contains alluvial fan, floodplain, and lacustrine deposits, which are underlain by alluvium of the Pauba Formation (DWR 1981). The maximum thickness of sedimentary deposits reaches 2,300 feet beneath Lake Elsinore (DWR 1981). Specific yield for the basin ranges from about 6 to 16 percent and averages about 7.6 percent (SWRB 1956).

Alluvial Fan, Floodplain, and Lacustrine Deposits. These deposits are Late Pleistocene to Holocene in age and form the surficial materials of the basin. Alluvial fan deposits of gravel, sand, silt, and clay are found near the western and northeastern edges of the basin emanating from the adjacent crystalline mountains. The interior of the valley contains floodplain deposits that reach a thickness of about 200 feet and contain stringers of sand and gravel in finer silt and clay. In the zone of inundation of Lake Elsinore, fine-grained lacustrine deposits of sand, silt, and clay reach 800 feet in thickness (DWR 1981). The lake deposits have a specific yield of about 6 percent, whereas the floodplain deposits range from 9 to 12 percent (DWR 1981).

Pauba Formation. The Pleistocene age Pauba Formation is composed of alluvial sandstone and conglomerate members (Morton and others 1999) that reach a maximum thickness of about 2,200 feet beneath Lake Elsinore (DWR 1981). This is the principal water-bearing unit of the basin, with the most productive wells extracting from alluvial sand and gravel bodies that occur as stringers within less pervious silt- and clay-rich deposits. In general, sediments are coarser near the margins of the basin and become finer toward Lake Elsinore. Specific yield for the Pauba Formation averages about 9 percent (DWR 1981).

Restrictive Structures

Groundwater movement in the basin is strongly influenced by faults cutting the alluvial and lacustrine sediments in Elsinore Groundwater Basin. Differences in groundwater elevation are found across the Wildomar, Willard, and Glen Ivy faults, indicating that they are barriers to groundwater flow (DWR 1953, SWRB 1956; DWR 1981). As many as 8 separate fault bounded blocks are interpreted in the basin and there appears to be little groundwater movement across these bounding faults (DWR 1981).

Recharge Areas

The principal recharge of the basin is from infiltration of stream flow through alluvial fan deposits near the edges of the basin and through gravel deposits along the course of the San Jacinto River. Other contributing sources include infiltration from unlined channels overlying the basin, underflow from saturated alluvium and fractures within the surrounding bedrock mountains and hills, and spreading of water in recharge basins (WE 2000).

Groundwater Level Trends

Groundwater levels within Elsinore Groundwater Basin declined more than 100 feet between 1927 and 1950 (DWR 1953). A hydrograph from one well shows that water level declined about 110 feet in the southern part of the basin from 1967 through 1985. However, a hydrograph from a well in the northern part of the basin shows a rise in water level of about 65 feet from 1963 through 1980. Under natural conditions, groundwater should flow generally toward Lake Elsinore; however, because faults cutting the sediments impede groundwater movement, groundwater flow is dominantly contained within fault blocks in the basin.

Groundwater Storage

Groundwater Storage Capacity. Total storage capacity is estimated to be about 27,000 af (SWRB 1956, DWR 1975), 1,840,000 af (DWR 1981), and 1,400,000 af (EVMWD 2001).

Groundwater in Storage. Groundwater in storage in 1964 and 1975 was estimated to be about 1,000,000 af (DWR 1981). About 245,000 af of available dry storage in 1999 (EVMWD 2001) suggests that about 1,155,000 af of groundwater in storage was available.

Groundwater Budget (Type C)

Mean subsurface inflow is estimated to be about 800 af/yr (SWRB 1956). Total extraction for 1978 is estimated to have been 8,081 af (DWR 1981).

Groundwater Quality

Characterization. Groundwater northeast of Lake Elsinore is calcium sulfate character, whereas groundwater southeast of the lake is calcium bicarbonate (SWRB 1956). Groundwater in the central part of the basin has sodium sulfate-bicarbonate character (DWR 1981). Springs and wells near the town of Elsinore yield water of sodium sulfate character (DWR 1981). The range of TDS content for 17 public wells is 290 to 680 mg/L and the average TDS content is 460 mg/L.

Impairments. Fluoride content exceeding recommended levels has been found in groundwater near the town of Elsinore (DWR 1953; SWRB 1967).

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	18	1
Radiological	20	0
Nitrates	18	0
Pesticides	20	0
VOCs and SVOCs	20	1
Inorganics – Secondary	18	4

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: to 5,400 gal/min (DWR 1978)	Average:
	Total depths (ft)	
Domestic	Range:	Average:
Municipal/Irrigation	Range: to 2,306 ft (DWR 1978)	Average:

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
US Geological Survey	Groundwater levels	1
US Geological Survey	Miscellaneous water quality	1
Department of Health Services and cooperators	Title 22 water quality	18

Basin Management

Groundwater management: [Elsinore Valley Municipal Water District](#) has proposed a [groundwater management plan](#).

Water agencies

Public [Elsinore Valley Municipal Water District](#)

Private

References Cited

- California Department of Water Resources (DWR). 1953. *Elsinore Basin Investigation*. Bulletin No. 9.
- _____. Southern District. 1978. A Preliminary Evaluation of *Ground Water Conditions in the Vicinity of Lake Elsinore*. Southern District Technical Information Record 1080-A-1 34 p.
- _____. Southern District. 1981. *Investigatin of Ground Water Supply for Stabilization of Level of Lake Elsinore, Riverside County*. District Report to Department of Parks and Recreation under Interagency agreement 162083. 45 p.
- California State Water Resources Board (SWRB). 1956. *Santa Ana River Investigation*: State Water Resources Board Bulletin No. 15. 207 p. [nb: later published in 1959 as DWR Bulletin No. 15].
- Eastern Valley Municipal Water District (EVMWD). 2001. Elsinore Valley Pilot Recharge Demonstration Project Grant Application.
- Morton, D.M., Hauser, R.M., and Ruppert, K.R. 1999. *Preliminary digital geologic map of the Santa Ana 30'x60' quadrangle, southern California, version 1.0*. U.S. Geological Survey Open-File Report 99-172 15p., scale 1:100,000, 2 sheets.
- Wildermuth Environmental (WE). 2000. *TIN/TDS Study Phase 2A*.

Errata

Updated groundwater management information and added hotlinks to applicable websites.
(1/20/06)

Appendix F

EVMWD Administrative Code

Elsinore Valley Municipal Water District - Administrative Code Section

SECTION 3900. WATER SUPPLY ANALYSES, WATER & SEWER SERVICE AVAILABILITY (WILL-SERVE) COMMITMENTS AND PROJECT PLANNING (R-1233)

§ 3901. Water Supply Assessments, Written Verifications and Service Availability Letters.

- A. From time to time the District may be requested to prepare and adopt Water Supply Assessment (WSAs) pursuant to Water Code section 10910 et seq. and Written Verifications (WVs) pursuant to Government Code section 66473.7. WSAs and WVs are project-specific analyses generally intended to address whether the District's total projected water supplies available during normal, single dry, and multiple dry years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the District's existing and planned future uses, including agricultural and manufacturing uses. The analyses and conclusions set forth in a WSA or WV are based on information and water supply conditions understood by the District on the date of its adoption of a WSA or WV and may be affected by conditions or events occurring or not occurring thereafter. The analyses and conclusions set forth in a WSA or WV are also based on information received from the applicable lead agency or the project proponent regarding the projected water demand of the proposed project, the projected schedule for buildout of the project, and other factors. Any changes in that information may materially affect the analyses and conclusions of a WSA or WV. The District retains the right, in its sole discretion, to evaluate from time to time whether the projected demands associated with a proposed project, as set forth in a WSA or WV, continue to fall within the District's forecasted demand or planned future uses. In no case shall the District's preparation or adoption of a WSA or WV be intended as or construed to create a guarantee, right or entitlement to water service or any specific level of water service by the District, nor in any case shall the District's preparation or adoption of a WSA or WV be intended or construed to either create, impose, expand, or limit any duty concerning the obligation of the District to provide any certain type or level of water service to its existing customers, to any future potential customers, or to the project for which the WSA or WV is prepared. (Water Code § 10914(a)-(b); Govt. Code § 66473.7(m).) Neither a WSA nor a WV is a Service Availability

Letter. Rather WSAs and WVs are project-specific analyses that apply to certain types of development pursuant to the respective requirements of the WSA and WV statutes.

- B. The District reserves the right to charge, collect, and require advance deposit for all reasonable costs incurred by the District in preparing and adopting a WSA or WV, including but not limited staff, consulting, legal, and production costs.
- C. The Service Availability Letter will contain requirements and conditions which are a result of the District's initial planning review and are generally based upon preliminary information and/or tentative engineering maps. The District reserves the right at any time to re-evaluate, revise and update the requirement and conditions in any Service Availability Letter. The District considers the conditions to have expired automatically two years from the issuance date of the Service Availability Letter.
- D. The engineering design and subsequent approval of the project's improvement plans are considered valid for a period of two years from the date of the District General Manager's signature. The District will recognize the project designated as under construction when the developer/representative has paid the District's required inspection fees.

§ 3902. Conditions to Construct Regionally Sized Facilities.

- A. If a project is conditioned with regional water and/or sewer requirements, various financial arrangements must be made. It is the developer's (or his representative's) responsibility to coordinate these arrangements with the District's Administration, Engineering and Finance Department's guidelines and procedures.
- B. The developer has full financial responsibility for design, construction and inspection costs of any regionally sized facilities, required upgrades and/or oversizing of any existing facilities.
- C. The District's policy and primary method regarding participant financing of regional facilities is in developing a reimbursement agreement. On a case by case basis, the District will review the potential for crediting a proportionate amount of the construction costs of regional facilities against the required water and sewer

connection charges. This action is strictly discretionary and subject to the approval of the Board of Directors.

§ 3903. General.

- A. The District does not guarantee that water or sewer service to a project will be available at the time the developer/representative submits an application for service, due to potential limitations on water supplies.
- B. The District's Board of Directors has adopted mandatory water conservation measures by ordinance. The District may in some areas have insufficient supply for the ordinary requirements of its existing service commitments, including domestic, agricultural and irrigation, fire protection, grading, and construction water demands normally provided by the District's daily operations.
- C. All of the requirements referenced in a Service Availability Letter are subject to change without notice. Service commitments contained in a Service Availability Letter will expire automatically two years after the date of execution. Service commitments contained in a Service Availability Letter are not transferable to any other parcel or lot. The District's commitments for water and sewer service are expressly conditioned on the performance by the developer/representative of the conditions referenced in the Service Availability Letter.
- D. The developer will grant, or cause to be granted to the District, and without District cost, all necessary easements and/or access rights of way for construction, installation, maintenance and access to the system facilities to be installed. Said easements and accesses are to be executed by all necessary parties having an interest in affected lands and/or receiving service from said system facilities.
- E. The developer will grant, or cause to be granted to the District, and without District cost, all water rights including surface and groundwater rights over, upon and under all lands within the project. An offer of dedication and acceptance shall be provided on the record map, if applicable, or a separate instrument shall be prepared and executed prior to improvement plan approval. *(Minutes 2/25/98)*
- F. The developer shall convey to the District, in a proper grant deed/bill of sale, full ownership of onsite and/or offsite water and

sewer facilities serving the project, and such facilities will become the District's property upon acceptance of said grant deed by the District.

§ 3904. Fees.

A developer/representative is required to pay applicable water, sewer connection fees, capacity charges, facilities reimbursements, and make any other appropriate financial arrangements for service. The following information must be provided by the developer for final assessment and computation of fees:

- ï A tentative map or plot plan describing the project, with gross acres stipulated.
- ï The square footage of any structures to be served.
- ï The recommended size of domestic, irrigation, and fire service meters, computed by the project's engineer.

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