the future of southern california

Murrieta

General Plan Update

Appendix M2:

Regional Recycled Water Project Facilities Report_2006

Kennedy/Jenks Consultants

16855 West Bernardo Drive, Suite 360
San Diego, CA 92127
(858) 676-3620
Fax (858) 676-3625

Elsinore Valley Municipal Water District's Regional Service Area Recycled Water Project Facilities Planning Report Final Report

August 2006

Prepared for

Elsinore Valley Municipal Water District
31315 Chaney Street
Post Office Box 3000
Lake Elsinore, CA 92531-3000

K/J Project No. 0585001

Table of Contents

List of Tables ..... *v*
List of Figures ..... *vi*
List of Appendices ..... *vi*
List of Abbreviations and Acronyms ..... *vii*

Section 1: Executive Summary 1-1

1.1 Background 1-1
1.2 Regional WRF 1-1
1.3 Market Assessment 1-2
1.4 Water Recycling Alternatives Evaluation 1-2
1.4.1 Service Area and Customers 1-2
1.4.2 Recycled Water Distribution System Alternatives 1-4
1.5 Phasing Plan 1-4
1.6 Sources and Timing of Funds for Design and Construction 1-6

Section 2: Regional Service Area Characteristics 2-1

2.1 Introduction 2-1
2.2 Study Area Boundaries 2-1
2.3 Population Projections of Study Area 2-5
2.4 Service Area Characteristics 2-6
2.4.1 Hydrologic Features 2-6
2.4.2 Groundwater Basins 2-6
2.4.3 Land Use and Land Use Trends 2-10
2.5 Existing Recycled Water Facilities 2-10
2.6 Beneficial Uses of Receiving Waters 2-13

Section 3: Water Supply Characteristics and Facilities 3-1

3.1 Wholesale and Retail Entities 3-1
3.2 Sources of Water for Study Area 3-1
3.2.1 Water Billing Rates 3-2
3.3 Capacities of Present Facilities 3-5
3.3.1 Surface Water 3-5
3.3.2 Imported Water 3-5
3.3.3 Groundwater Wells 3-6
3.3.4 Storage Facilities 3-7
3.3.5 Limitations of Existing Facilities 3-7
3.4 Groundwater Management 3-7
3.5 Water Use Trends 3-7
3.6 Quality of Water Supplies 3-8
3.7 Sources for Additional Water 3-8
3.7.1 MWD Programs 3-8

3.7.1.1 EVMWD Specific MWD/WMWD Programs.....3-9
3.7.2 Back Basin Groundwater Storage Project.....3-9
3.7.3 Alberhill Recycled Water Facilities 3-10
3.7.4 Other Facilities.....3-10

Section 4: Regional Area Wastewater Characteristics and Facilities..... 4-1

Section 5: Treatment Requirements for Discharge and Reuse 5-1

5.1 General and Individual Recycled Water User Information & Requirements.....5-1
5.2 Disinfected Tertiary Recycled Water.....5-1
5.3 Health-related Water Quality or Treatment Requirements.....5-2
5.4 Wastewater Discharge Requirements.....5-2
5.4.1 Toxicity Related Requirements.....5-3
5.5 Individual Recycled Water User Information Needs and Requirements.....5-3
5.6 Health-related Water Quality or Treatment Requirements.....5-4
5.7 Other Wastewater Discharge Requirements.....5-4
5.7.1 Water Quality Objectives (WQOs) and Effluent Limits 5-6
5.7.2 Applicable Water Quality Objectives 5-6
5.7.3 Water Quality-Related Requirements of WDR No. 2000-165…….....5-8

Section 6: Regional Recycled Water Market Assessment..... 6-1

6.1 Market Assessment Methodology 6-1
6.2 Regional Service Area Recycled Water Markets 6-3
6.2.1 Downtown Zone.....6-8
6.2.2 Northwest Zone 6-11
6.2.3 Northeast Zone.....6-14
6.3 Users Sorted by Type.....6-17
6.3.1 Irrigation Use for Parks.....6-17
6.3.2 Irrigation Use by Schools.....6-17
6.3.3 Top Ten Recycled Water Users in the Regional Service Area…… 6-18
6.4 Temescal Canyon Area.....6-19
6.5 Recycled Water Use for Lake Elsinore.....6-20
6.6 Market Assessment Conclusion.....6-20

Section 7: Project Alternative Analysis 7-1

7.1 Planning Assumptions and Design Criteria.....7-1
7.1.1 Peaking Factors.....7-1
7.1.2 Pipeline Sizing Criteria 7-2
7.1.3 Reservoir Sizing Criteria.....7-2

7.1.4 Pump Sizing Criteria 7-3
7.2 Unit Costs 7-3
7.3 Water Recycling Alternatives Evaluation 7-5
7.3.1 Service Area and Customers 7-5
7.3.2 Pressure Zones 7-7
7.3.2.1 Evaluation of 1500 Versus 1540 Pressure Zones 7-7
7.3.3 Storage Alternatives 7-8
7.3.3.1 Reservoir Storage – 1540 Pressure Zone 7-10
7.3.3.2 Reservoir Storage – 1740 Pressure Zone 7-11
7.3.4 Distribution System Piping Alternatives 7-11
7.3.4.1 Description of Distribution System Piping Alternatives 7-11
7.3.4.2 Pumping Requirements 7-12
7.3.4.3 Reservoir Storage Requirements 7-16
7.3.4.4 Turnout Requirements 7-17
7.3.4.5 Cost Evaluation of Distribution System Piping Alternatives 7-17
7.3.4.6 Impact of the Wildomar System Inter-Tie and John Laing Homes 7-17
7.3.5 Treatment Alternatives 7-18
7.3.6 Market Alternatives 7-18
7.3.7 Storage Location Alternatives 7-18
7.3.8 Sub-Alternatives 7-18
7.3.9 Non-recycled Water Alternatives 7-18
7.3.9.1 Other Potentially Viable New Sources of Water 7-18
7.3.9.2 Economic Costs of New Sources of Water 7-18
7.3.9.3 Pollution Control Alternatives (if applicable) 7-18
7.3.9.4 No Project Alternative 7-18
7.3.10 Economic Analysis for Each Alternative 7-18
7.3.11 Energy Analysis for Each Alternative 7-19
7.3.12 Water Quality Impacts of Each Alternative 7-19
7.3.13 Comparison of Alternatives and Recommended Alternative 7-19
7.4 Phasing Plan 7-19
7.5 Water Conservation/Reduction 7-27
7.5.1 Analysis 7-27
7.5.2 Impact of Water Conservation/Reduction on Recycling 7-27
7.5.3 Recommendation 7-27
7.5.4 Implementation 7-27

Section 8: Recommended Plan 8-1

8.1 All Proposed Facilities and Basis for Selection 8-1
8.2 Preliminary Design Criteria and Refined Pipeline Routes 8-1

8.3 Cost Estimate Based on Time of Construction....8-1
8.4 All Potential Users....8-1
8.5 Reliability of Facilities as Compared to User Requirements....8-2
8.6 Implementation Plan....8-2
8.6.1 Coordination with Water/Recycled Water Suppliers....8-2
8.6.2 Ability and Timing of Users to Join System....8-2
8.6.3 Tentative Water Recycling Requirements of RWQCB....8-2
8.6.4 Commitments from Potential Users....8-2
8.6.5 Water Rights Impact....8-2
8.6.6 Permits, Right-of-Way, Design, and Construction....8-3
8.6.7 Land Use....8-3
8.6.8 Detailed Schedule....8-3
8.7 Operational Plan....8-3
8.7.1 Responsible People....8-3
8.7.2 Necessary Equipment....8-3
8.7.3 Monitoring....8-4
8.7.4 Irrigation Scheduling....8-4
8.7.5 On-site Retrofits....8-4

Section 9: Construction Financing Plan and Revenue Program....9-1

9.1 Sources and Timing of Funds for Design and Construction....9-1
9.1.1 Overview of Revenue Program and Construction Financing Plan....9-1
9.1.1.1 Revenue Program for EVMWD Regional FPR....9-1
9.1.1.2 Construction Financing Plan....9-1
9.2 Pricing Policy for Recycled Water....9-4
9.3 Water Pollution Control Costs....9-4
9.4 Annual Projections....9-4
9.4.1 Fresh Water Prices....9-4
9.4.2 Recycled Water Used....9-4
9.4.3 Annual Costs of Recycling Project....9-5
9.4.4 Allocation of Costs to Users....9-5
9.4.5 Unit Costs to Serve Users....9-5
9.4.6 Unit Price of Recycled Water....9-5
9.4.7 Sensitivity Analysis to Underutilization of Recycled Water....9-5
9.5 Sunk Costs and Indebtedness....9-5

Section 10: References....10-1

List of Tables

Table 1-1 Regional Service Area Top Ten Recycled Water Markets 1-2
Table 1-2 Availability of Recycled Water Supplies with Lake Restoration 1-3
Table 1-3 Summary of Capital Costs by Distribution System Alternative 1-4
Table 1-4 Recycled Water Demands by Project Phase 1-5
Table 1-5 Summary of Project Costs by Phase 1-6
Table 1-6 Recycled Water Costs by Project Phase 1-6
Table 2-1 Population and Employment Forecasts 2-5
Table 2-2 Percentages of Each Land Use Category by Acreage 2-10
Table 3-1 Elsinore Division Existing Sources of Water Supply and Actual Use [(a)] 3-2
Table 3-2 EVMWD Water Billing Rates 3-4
Table 3-3 Summary of Elsinore Division Projected Water Demands[(a)] 3-8
Table 5-1 Summary of Regional WRF Effluent Limitations for Discharge to the Temescal Wash 5-3
Table 5-2 EVMWD's TVRWRF Order No. 2000-165 and RCWD SRWRF Order No. 94-92 Effluent Limitations 5-6
Table 5-3 EVMWD's TVRWRF Order No. 2000-165 Water Quality Objectives 5-7
Table 5-4 RCWD's SRWRF Order No. 94-92 Water Quality Objectives 5-8
Table 6-1 Regional Service Area Potential Recycled Water Markets 6-6
Table 6-2 Irrigation Users in the Downtown Zone 6-9
Table 6-3 Irrigation Customers in the Northwest Zone 6-12
Table 6-4 Irrigation Customers in the Northeast Zone 6-16
Table 6-5 Parks within the Regional Service Area 6-17
Table 6-6 Schools in Northern Lake Elsinore Area 6-18
Table 6-7 Ten Largest Irrigation Users 6-19
Table 6-8 Irrigation Customers along Temescal Agricultural Line by Usage 6-22
Table 7-1 30-Year Average Precipitation and ET vs. Irrigation Requirement 7-1
Table 7-2 Recycled Water Pipeline Unit Costs 7-4
Table 7-3 Availability of Recycled Water Supplies with Lake Restoration 7-6
Table 7-4 Cost Evaluation of 1500 vs. 1540 Pressure Zones 7-8
Table 7-5 Summary of Reservoir Storage Requirements 7-9
Table 7-6 System Requirements for Two Reservoirs versus One 7-10
Table 7-7 Recycled Water Pump Stations Requirements 7-16
Table 7-8 Recycled Water Storage Requirements 7-16
Table 7-9 Summary of Alternative Capital and Annualized Costs for Each Alternative 7-17
Table 7-10 Recycled Water Demands by Project Phase 7-21
Table 7-11 Recycled Water Customers by Project Phase 7-23
Table 7-12 Recycled Water Costs by Project Phase 7-26
Table 8-1 Costs at Time of Construction 8-1
Table 9-1 Regional Recycled Water Project Revenue Program 9-2
Table 9-2 Monthly Cash Flow Analysis 9-3
Table 9-3 Recycled Water Annual Use 9-4

Table of Contents (cont'd)

List of Figures

Figure 2-1 Service Area Location and Vicinity Map 2-3
Figure 2-2 Recycled Water Facilities and EVMWD District Map 2-4
Figure 2-3 Regional Sewershed RW Planning Study Topographic Map 2-7
Figure 2-4 Elsinore Valley Watershed and Hydrologic Map 2-8
Figure 2-5 EVMWD's Groundwater Basin 2-9
Figure 2-6 EVMWD Sphere of Influence Land Use Types 2-12
Figure 6-1 Recycled Water Users by Type and Flow, Potential Recycled Water Users Map 6-5
Figure 6-2 Proposed and Existing Wildomar Facilities, Downtown Lake Elsinore Map 6-10
Figure 6-3 Recycled Water Users by Type and Flow, Northwest Area Potential Customers Map 6-13
Figure 6-4 Recycled Water Users by Type and Flow, Northeast Area Potential Customers Map 6-15
Figure 6-5 Potential Recycled Water Users by Usage, Temescal Canyon Agricultural Line Corridor 6-21
Figure 7-1 Diurnal Variations in Recycled Water Supplies and Demands 7-9
Figure 7-2 Alternative 1 Alignment 7-13
Figure 7-3 Alternative 2 Alignment 7-14
Figure 7-4 Alternative 3 Alignment 7-15
Figure 7-5 Proposed Phasing Plan 7-20
Figure 8-1 EVMWD Regional Recycled Water Project Schedule, Phases IA-III 8-5

List of Appendices

A Annual and Peak Irrigation Usage of Potential Recycled Water Users

B EVMWD Draft Recycled Water Ordinance

C Letter of Intent for John Laing Homes

D Resolution Adopting CEQA Documentation

E EVMWD Rules and Regulations for Recycled Water Use

List of Abbreviations and Acronyms

AAF	Annual average flow
ac	acre
Acre-ft	acre-feet
ADD	Average Day Demand
ADWF	Average dry weather flow
AFY	acre-feet per year
APN	Assessor Parcel Number
AWWF	Average wet weather flow
AVP	Auld Valley Pipeline
CCF	Hundred Cubic Feet
CCR	California Code of Regulations
CDHS	California Department of Health Services
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CIP	Capital Improvement Program
Cl	Chloride
COD	Chemical Oxygen Demand
CFD	Community Facilities District
CWA	Clean Water Act
DI	Ductile Iron
Dia	Diameter
District	Elsinore Valley Municipal Water District
DOF	California Department of Finance
EA	Environmental Assessment
EMWD	Eastern Municipal Water District
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EVMWD	Elsinore Valley Municipal Water District
EWD	Elsinore Water District
FONSI	Finding of No Significant Impact
fps	feet per second

GIS	Geographical Information System
gpd	gallons per day
gpm	gallons per minute
hp	Horsepower
HWL	High Water Level
I&I	infiltration and inflow
IWRP	Integrated Water Resources Plan
JLH	John Laing Homes
Kennedy/Jenks	Kennedy/Jenks Consultants
kWh	kilowatt-hour
LESJWA	Lake Elsinore and San Jacinto Watersheds Authority
lb	pound
LF	Linear foot
LS	Lift station
MDD	Maximum Day Demand
MDP	Master Drainage Plan
MWD	The Metropolitan Water District of Southern California
MG	million gallons
mgd	million gallons per day
MMRP	Mitigation Monitoring and Reporting Plan
MOU	Memorandum of Understanding
msl	mean sea level
MWC	The Farm Mutual Water Company
Na	Sodium
NPDES	National Pollution Discharge Elimination System
O&M	Operations & Maintenance

PDWF	Peak dry weather flow
PDD	Peak Day Demand
PHD	Peak Hour Demand
PEIR	Program Environmental Impact Report
PVC	Polyvinyl chloride (pipe material)
PRV	Pressure reducing valve
PWWF	peak wet weather flow
RCWD	Rancho California Water District
RWQCB	California Regional Water Quality Control Board
SAR	Santa Ana River
SAWPA	Santa Ana Watershed Projects Authority
SB	Senate Bill
SCAG	Southern California Association of Governments
SO_4	sulfate
SWRCB	California State Water Resources Control Board
TCOP	Temescal Creek Outfall Pipeline
TDH	Total Dynamic Head
TDS	Total dissolved solids
TIN	Total inorganic nitrogen
TMDL	Total maximum daily load
TN	Total nitrogen
TP	Total phosphorus
TVRWRF	Temescal Valley Regional Water Reclamation Facility (A major pipeline for conveying recycled water, owned and operated by EMWD)
USACE	U.S. Army Corps of Engineers
UWMP	Urban Water Management Plan
VCP	Vitrified clay pipe
VFD	Variable-Frequency Drives
WMWD	Western Municipal Water District
WTP	Water Treatment Plant

WRF	Water Reclamation Facility
WWMP	Wastewater Master Plan
WWTP	Wastewater Treatment Plant

Section 1: Executive Summary

The Elsinore Valley Municipal Water District (District) is preparing this recycled water study for the District's Regional Service Area, described in greater detail below with the assistance of a grant from the State Water Resources Control Board (SWRCB). This study has been prepared in accordance with the SWRCB's Recycled Water Funding Guidelines (Guidelines). The draft report was presented to the SWRCB in December 2005. This final report includes input received from the SWRCB, as well as the District and other project stakeholders.

1.1 Background

The District was formed in 1950 and provides water and wastewater services to a 96 square mile area around Lake Elsinore, located in western Riverside County. The Elsinore Valley is located within an arid region of southern California, and is situated east of the Cleveland National Forest within the San Jacinto River watershed. The service area includes the communities of Lake Elsinore, Wildomar, Canyon Lake, Alberhill, El Cariso, a portion of the city of Murrieta, and unincorporated areas of Riverside County. In general, all of these communities are experiencing rapid development and growth of residential communities, parks, school facilities with athletic fields, and commercial and industrial facilities. All of these community facilities have potential for recycled water use.

The District serves approximately 103,000 water customers and provides approximately 27,000 AFY of potable water. Water demands within the Elsinore Basin are projected to more than double by 2020 (from 23,400 AFY in 2000 to as much as 53,100 AFY in 2020). In order to meet the current and future water demands, the District will be increasingly dependent on both recycled and imported water supplies.

1.2 Regional WRF

In the areas serviced by sewers, wastewater is delivered to one of the three wastewater treatment plants: the Regional WRF; the Railroad Canyon Wastewater Treatment Plant (WWTP); and the Horsethief WWTP. The Regional WRF was expanded in 2004 to accommodate an average flow of 8.0 mgd, including tertiary treatment capabilities. Effluent from the Regional WRF meets Title 22 requirements for non-restricted recreational impoundments.

The Regional WRF currently collects and treats an average of 4.67 mgd of wastewater, while producing approximately 2.0 mgd of tertiary treated recycled water for seasonal replenishment of Lake Elsinore, and some irrigation demand at the Regional WRF site. The balance of the plant's tertiary treated effluent is currently discharged to the Temescal Wash.

The District recently completed a 2-year pilot program using approximately 2 mgd of water from the Regional WRF for replenishing Lake Elsinore water levels. The results of that program were used to evaluate the effects of using recycled water for lake replenishment as part of an overall lake level management strategy.

1.3 Market Assessment

The Regional service area has a potential recycled water demand of approximately 2,225 AFY. Service to the Wildomar system and John Laing Homes Development could utilize an additional 1,120 AFY of recycled water from the Regional WRF. However, service to the Wildomar system is expected to be intermittent, and would not include serving John Laing Homes' peak seasonal demands from the Regional system. Table 1-1 identifies the top ten potential recycled water users in the Regional service area.

Table 1-1
Regional Service Area Top Ten Recycled Water Markets

Name	Average Annual Irrigation Demand (AFY)
Rosetta Canyon Subdivision	309
Alberhill Community Plan	192
La Laguna Development	142
Lakeside High School	120
Alberhill Ranch Development	101
Terra Cotta Middle School	96
Temescal Canyon High	88
Lake Elsinore Market Place	68
Elsinore Valley Cemetery	67
Lake Elsinore Valley Development	66
TOTAL	**1,249**

1.4 Water Recycling Alternatives Evaluation

The development and analysis of the recycled water system alternatives are based on a set of planning assumptions and design criteria upon which the facilities and alternative are evaluated. The recycled water alternatives evaluations include analysis of the following recycled water system components:

- Service area and customers
- Pressure zones
- Storage
- Distribution system piping

1.4.1 Service Area and Customers

Potential uses of recycled water from the Regional WRF include:

- 5,900 AFY (average annual basis) for Lake Elsinore replenishment supply
- 2,225 AFY for recycled water markets within the Regional recycled water service area

- 1,120 AFY to serve the Wildomar system for service to John Laing Homes
- 3,342 AFY to serve agricultural users along the Temescal Canyon Agricultural Line Corridor

The total of these demands is 12,587 AFY. Accounting for maximum day demands within the Regional recycled water service area, the total maximum day demand of these potential service areas and customers is 13.3 mgd. However, projected flows to the Regional WRF are estimated to be 12.67 mgd in 2025. Given that the potential uses for recycled water from the Regional WRF exceed the projected supply availability, the service area and customer markets must be prioritized, with some service areas/markets being deferred or identified for service through other sources.

Because the Regional WRF effluent has low nutrient content, this water is preferred over other non-potable water supply sources for the purposes of lake replenishment. Providing water to the District's lake replenishment program is given the highest priority use of the four above-described service area customers.

With an average annual supply to lake replenishment of 5,900 AFY, the Regional WRF will have available capacity to ultimately supply about 8,300 AFY to other uses. However, as Table 1-2 shows, surplus recycled water will not be available from Regional WRF until about 2015, given dry year commitments for lake replenishment of 10,300 AFY (or 9.19 mgd).

Table 1-2
Availability of Recycled Water Supplies with Lake Restoration

Year	Regional Treatment Plant Flows (mgd)	Normal-Year Flows Required for Lake Restoration (mgd)	Normal-Year Available Supply for Recycled Water System (mgd)	Dry-Year Flows Required for Lake Restoration (mgd)	Dry-Year Available Supply for Recycled Water System (mgd)
2005	5.16	5.27	0	9.19	0
2010	7.08	5.27	1.81	9.19	0
2015	9.33	5.27	4.06	9.19	0.14
2016	9.678	5.27	4.41	9.19	0.48
2020	11.07	5.27	5.80	9.19	1.88
2022	11.71	5.27	6.44	9.19	2.52
2025	12.67	5.27	7.40	9.19	3.48

The second priority of service is therefore the Regional recycled water system customers. The Regional WRF will supply both average day and maximum day demands to the Regional recycled water service area customers.

An inter-tie between the Regional recycled water system and the Wildomar recycled water system will provide operational flexibility, and system redundancy. The inter-tie also allows the Regional recycled water system to deliver water to the ornamental lake being constructed as part of the John Laing Homes development. The District intends to include an inter-tie with the Wildomar recycled water system with enough capacity to supply average day demands to the John Laing Homes development, 1.0 mgd.

Using Regional WRF's recycled water to supply non-potable water to the Temescal Canyon Agricultural Line Corridor does not appear to be a preferred recycled water supply option at this time. As development in the area and flows to the Regional WRF continue to increase, the District may wish to consider reevaluating its ability to supply non-potable water to the Temescal Canyon Agricultural Line as part of future facilities planning updates.

1.4.2 Recycled Water Distribution System Alternatives

Analysis of the proposed recycled water system was performed by analyzing the potential recycled water users versus the recycled water supply sources, pump stations locations and reservoir siting needs for the Regional recycled water service area. From this review, three pipeline routing alternatives were identified. These alternatives (illustrated on Figures 7-2, 7-3, and 7-4) vary primarily in the piping routes. The pipeline routes were selected primarily to minimize the distance from the Regional WRF water source and the recycled water use sites. The pipeline sizing was determined in accordance with the design criteria for velocity, pressure, and minimum pipe diameter, with 6-inches selected as the minimum pipe size. Table 1-3 summarizes the capital, operations and maintenance costs for each of the 3 distribution system alternatives.

Table 1-3
Summary of Capital Costs by
Distribution System Alternative

	Alternative:		
Capital Cost Item	**1**	**2**	**3**
Piping Costs	$24,260,000	$24,533,000	$22,273,000
Pump Costs	$1,175,000	$1,175,000	$1,175,000
Turnout Costs	$210,000	$210,000	$210,000
Reservoir Costs	$5,840,000	$5,840,000	$5,840,000
TOTAL CAPITAL COST	**$31,485,000**	**$31,758,000**	**$29,498,000**

Based on the comparison of capital and operational costs, Alternative 3 is recommended as the least costly and preferred distribution system alternative.

1.5 Phasing Plan

The proposed phasing plan for the Regional recycled water system calls for the implementation of the Regional recycled water system in 4 phases. Table 1-4 summarizes the projected recycled water demands and estimated timing of each project phase.

Table 1-4
Recycled Water Demands by Project Phase

	Phase IA	Phase I	Phase II	Phase III
Average Annual Demand	206 AFY	260 AFY	1,409 AFY	350 AFY
Cumulative Average Annual Demand	206 AFY	466 AFY	1,875 AFY	2,225 AFY
Cumulative Maximum Day Demand	0.38 mgd	0.86 mgd	3.42 mgd	4.05 mgd
Max. Day Demand for Wildomar Inter-Tie	1.00 mgd	1.00 mgd	1.00 mgd	1.00 mgd
Cumulative Total Max. Day Demand with Wildomar Inter-Tie	1.38 mgd	1.86 mgd	4.42 mgd	5.05 mgd
Year Implemented	2016	2020	2022	2025

The phasing plan for the Regional system is such that the total peak system demands will not exceed the reclaimed water supply available from the Regional WRF with flow diversions for lake restoration totaling 9.18 mgd.

The District is entitled to 1,680 AFY of annual supplies from Eastern MWD's recycled water pipeline, which will serve the Wildomar system. Recycled water supplies for the Wildomar system exceeding 1,680 AFY will need to be purchased by the District. Currently, the cost is $165/AF. Thus, the total cost to the District for purchasing supplemental water will be about $120,000 per year for the purchase of 720 AFY of supplemental water for the Wildomar system.

Supplemental water from the Regional WRF could be supplied to the Wildomar system as water is available. This would reduce the amount of water that the District would need to purchase from Eastern MWD for the Wildomar system. For this reason, the District intends to pursue Phase IA as the first project phase of the Regional recycled water system. The inter-tie could be placed into service after 2010 to provide an interruptible supply of supplemental water to the Wildomar system. However, a reliable recycled water supply sufficient to meet both the demands of the Phase IA customers and supply water for lake restoration during dry years (9.2 mgd or 10,900 AFY) would not be available from the Regional WRF until 2016.

Table 1-5 summarizes the costs versus recycled water supplies for each project phase. Figure 7-5 on page 7-20 illustrates the proposed Regional recycled water distribution system by phase.

Table 1-5
Summary of Project Costs by Phase

	Phase IA	Phase I	Phase II	Phase III	Total
Piping Costs	$4,075,000	$7,585,000	$7,853,000	$2,760,000	$22,273,000
Pump Station Costs	$608,000		$567,000		$1,175,000
Reservoir Costs		$3,000,000	$2,620,000		$5,620,000
Turnout Costs	$105,000		$105,000		$210,000
Total Capital Cost	$4,788,000	$10,585,000	$11,145,000	$2,760,000	$29,278,000
Annualized Capital Cost	$352,000	$779,000	$836,000	$203,000	$2,170,000
O&M = 18% of ACC	$56,000	$148,000	$150,000	$37,000	$391,000
Total Annualized Cost	$365,000	$971,000	$987,000	$240,000	$2,563,000
Avoided Costs for Wildomar System Supplemental Water	-$120,000	$0	$0	$0	-$120,000
Net Annualized Cost	$295,000	$919,000	$968,000	$240,000	$2,422,000
Water Usage (AFY)	206	260	1,409	350	2,225
Cumulative Water Usage (AFY)	206	466	1,875	2,225	2,225
Cumulative Unit Cost ($/AF)	$ 1,430/AF	$ 2,610/AF	$ 1,160/AF	$ 1,090/AF	$1,090/AF

1.6 Sources and Timing of Funds for Design and Construction

The Phase IA, I, II, and III projects for the Regional service area are significant projects for the District in meeting its water needs. The District has established a recycled water capital reserve from connection fees collected from new developments. The capital reserve, in addition to issuances of certificates of participation, is critical for design and construction of these projects. The cost estimate based on the anticipated year of construction for recycled water delivery as described in Section 7.4, is presented in Table 1-6.

Table 1-6
Recycled Water Costs by Project Phase

	Estimated 2006 Costs	Estimated Year Construction Begins	Estimated Costs at Time of Construction*
Phase IA	$4,788,000	2015	$6,553,000
Phase I	$10,585,000	2019	$16,947,000
Phase II	$11,145,000	2021	$19,300,000
Phase III	$2,760,000	2024	$5,376,000

***Escalated at 4%

Section 2: Regional Service Area Characteristics

2.1 Introduction

The Elsinore Valley Municipal Water District (District) was formed in 1950 and provides water and wastewater services to a 96 square mile area around Lake Elsinore, located in western Riverside County. The Elsinore Valley is located within an arid region of southern California, and is situated east of the Cleveland National Forest within the San Jacinto River watershed. The service area includes the communities of Lake Elsinore, Wildomar, Canyon Lake, Alberhill, El Cariso, a portion of the city of Murrieta, and unincorporated areas of Riverside County. In general, all of these communities are experiencing rapid development and growth of residential communities, parks, school facilities with athletic fields, and commercial and industrial facilities. All of these community facilities have potential for recycled water use. The District's service area is illustrated on Figure 2-1.

The District serves approximately 103,000 water customers and provides approximately 27,000 AFY of potable water. Rapid growth in the Elsinore area is expected over the next 10 to 20 years based on Southern California Association of Governments (SCAG) data and as documented in the Distribution System Master Plan and Wastewater Master Plan EIR. Water demands within the Elsinore Basin are projected to more than double by 2020 (from 23,400 AFY in 2000 to as much as 53,100 AFY in 2020). In order to meet the current and future water demands, the District will be increasingly dependent on both recycled and imported water supplies. Based on the data presented in the District's 2004 Consumer Confidence Report, groundwater supply wells accounted for 36 percent of the annual water demand, 9 percent from the Canyon Lake WTP, and 55 percent was supplied by import water from Metropolitan Water District (MWD) through the Auld Valley Pipeline (AVP) and Temescal Valley Pipeline connections.

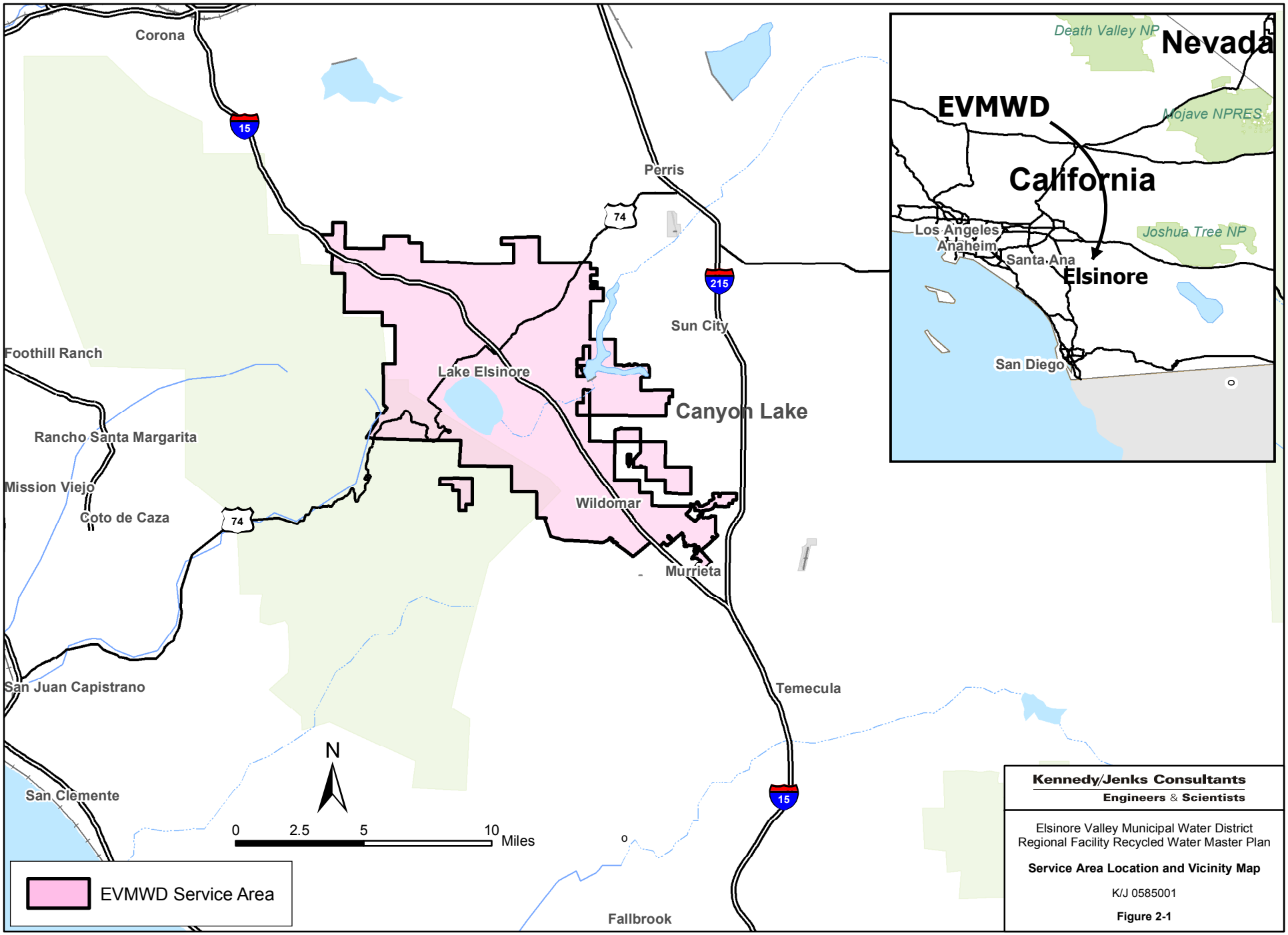
In the areas serviced by sewers, wastewater is delivered to one of the three wastewater treatment plants: the Regional WRF; the Railroad Canyon Wastewater Treatment Plant (WWTP); and the Horsethief WWTP. The Regional WRF currently collects and treats an annual average of 4.67 MGD of wastewater, while producing approximately 2.0 MGD of tertiary treated recycled water for seasonal replenishment of Lake Elsinore, and some irrigation demand at the Regional WRF site. The balance of the plant's tertiary treated effluent is currently discharged to the Temescal Wash.

2.2 Study Area Boundaries

The District intends to serve the Lake Elsinore Regional Service Area with recycled water, which includes areas around Lake Elsinore, the Alberhill area to the north and potentially along Temescal Canyon Road, the City of Lake Elsinore, and portions of the Wildomar and Lakeland Village areas. The potential service area boundaries are shown on Figure 2-2.

The District's main sanitary sewer collection system service areas are shown on Figure 3-3 of the 2002 Wastewater Master Plan. The collection system service areas are divided into the northern/western portion that flows to the Regional WRF and the southern/eastern portion that collects flows from the Wildomar area and flows south to RCWD's Santa Rosa WRF. There are

smaller sanitary sewer collection systems for the Horsethief Canyon WWTP that is the northwestern portion of the District (Horsethief Canyon Service Area) and the collection system for the Railroad Canyon WWTP that serves the Canyon Lake development (Canyon Lake Service Area).



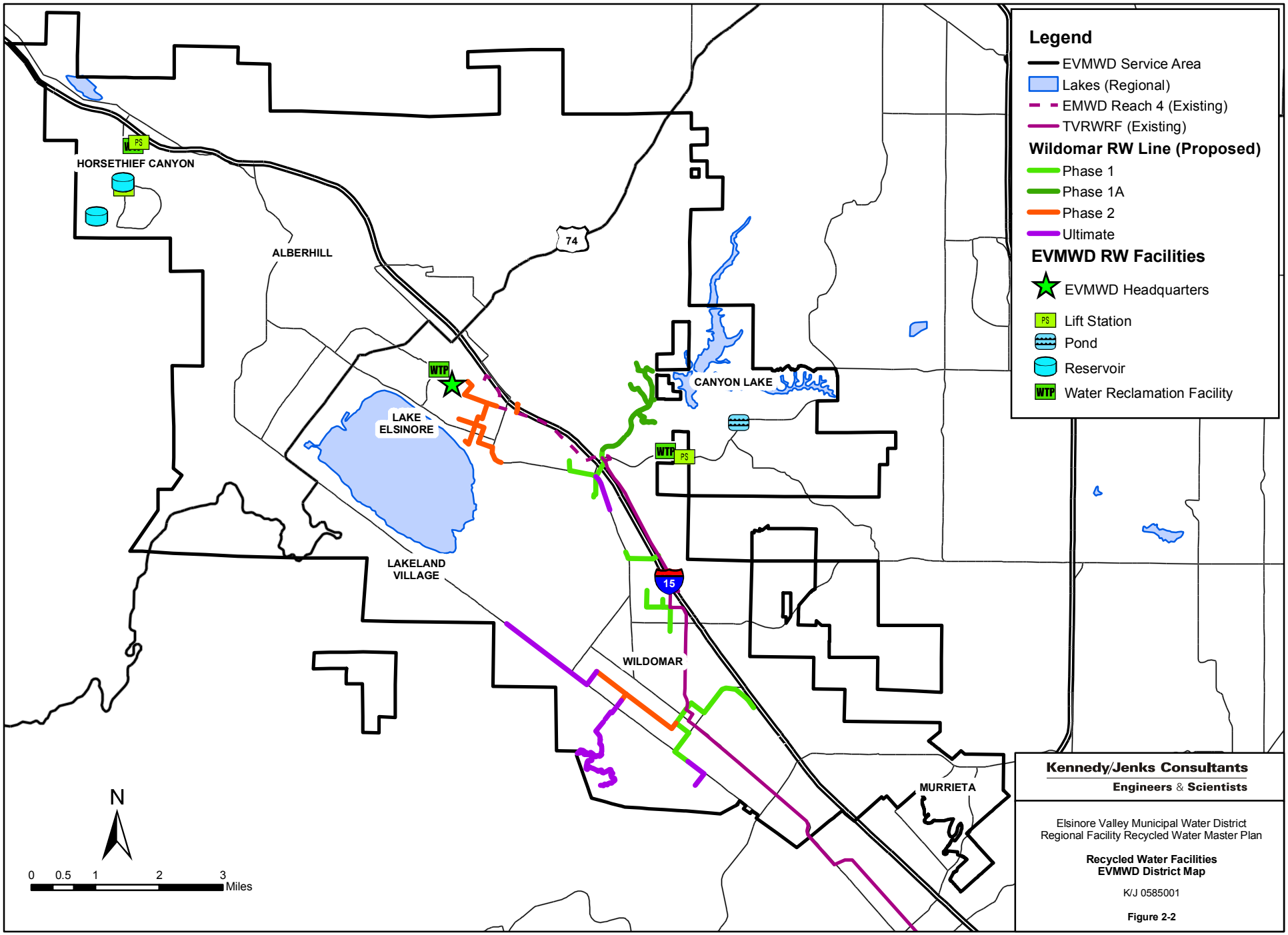
Kennedy/Jenks Consultants
Engineers & Scientists

Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan

Service Area Location and Vicinity Map

K/J 0585001

Figure 2-1


Legend
EVMWD Service Area
Lakes (Regional)
EMWD Reach 4 (Existing)
TVRWRF (Existing)
Wildomar RW Line (Proposed)
Phase 1
Phase 1A
Phase 2
Ultimate
EVMWD RW Facilities
EVMWD Headquarters
Lift Station
Pond
Reservoir
Water Reclamation Facility
HORSETHIEF CANYON
ALBERHILL
74
CANYON LAKE
LAKE ELSINORE
LAKELAND VILLAGE
15
WILDOMAR
MURRIETA
WTP
PS
N
0 0.5 1 2 3 Miles
Kennedy/Jenks Consultants
Engineers & Scientists
Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan
Recycled Water Facilities
EVMWD District Map
K/J 0585001
Figure 2-2

In general, the Regional Service Area is bounded by mountains or hills on the west, north, and east side of the area. The mountains to the west are the Cleveland National Forrest. The hills to the north separate the Alberhill drainage basin from the Regional basin. Therefore, the hills provide a natural separation between the Regional Service Area and the area most likely served by the new wastewater treatment plant in the Alberhill drainage basin.

Portions of the eastern and southern Regional Service Area may be served with recycled water from the TVRWRF pipeline, which originates from the EMWD facility in Temecula. These recycled water facilities are identified on Figure 2-2. A FPR has been prepared and submitted for the Wildomar area, and a grant to perform a planning study has been approved for the Alberhill area.

2.3 Population Projections of Study Area

The District is rapidly growing with population forecasted to nearly double between 2000 and 2020. SCAG has compiled historical population and employment by census tract for selected historical years and projected them to 2000, 2005, 2010, 2015, 2020, and 2025. The District adapted this data to reflect the portion of each census tract that is contained within the District boundaries. Data for key points are summarized in Table 2-1, along with the percent change over the five year period and a total expected percent change over the total 25 year period.

Table 2-1
Population and Employment Forecasts

Year	2000	2005	Change (%)	2010	Change (%)	2015	Change (%)	2020	Change (%)	2025	Change (%)	Total Change 2000 to 2005
Population	78,596	96,351	22.6%	113,322	17.6%	128,607	13.5%	150,243	16.8%	172,346	14.7%	119.3%
Housing (du)	25,636	30,758	20.0%	36,527	18.8%	41,853	14.6%	48,485	15.8%	--	--	–
Employment	17,135	25,938	51.4%	34,950	34.7%	40,070	14.6%	44,913	12.1%	49,922	11.2%	191.3%

Reference: EIR 2005 and SCAG, 2002.

The projected overall growth rate from 2005 to 2025 is 3.0 percent per annum. Employment was projected to increase from 17,135 in 2000 to 25,938 in 2005 (8.6 percent per annum). The projected overall growth rate for employment from 2005 to 2025 is 3.3 percent per annum (WSA, 2005).

According to the current adopted SCAG projections, the population in the EVMWD Service Area is projected to grow between 13.5 to 22.6 percent every five years through 2025. This population increase will add approximately 72,000 persons by 2020, which represents a 91 percent increase in population.

2.4 Service Area Characteristics

The District serves an area of 96 square miles made up of schools, streets, commercial, industrial, residential, and recreational areas. The topography of the Regional Service Area is a combination of flat areas, rolling hill areas, and mountain ridges along the western border of the service area and within the Cleveland National Forest. Figure 2-3 displays the topographic features of the service area.

2.4.1 Hydrologic Features

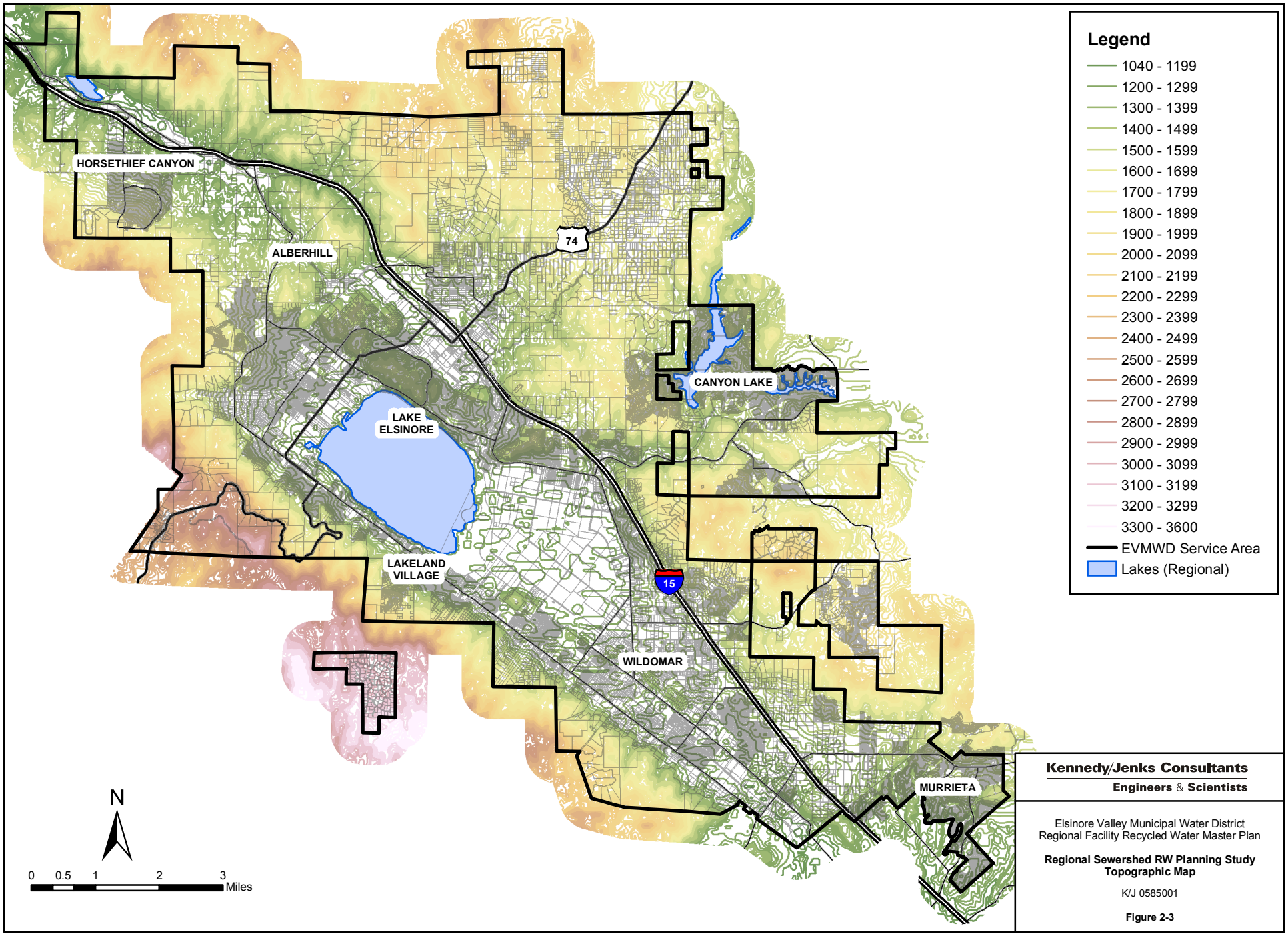
The major surface water bodies in the area are Lee Lake, Lake Elsinore and Canyon Lake, and the San Jacinto River. The San Jacinto River flows into Canyon Lake. During large storm events Canyon Lake will overflow and flow into Lake Elsinore, but this is a rare event. The Temescal Wash receives treated wastewater effluent from both the Regional WRF and excess EMWD flows, and collects stormwater runoff from the local area. On rare occasions, when there is enough stormwater flow in the Temescal Wash, the wash carries water north 28 miles to the Santa Ana River. The water level in Lake Elsinore suffers from excessive evaporation that ranges on the order of 13,000 to 15,000 AFY depending on lake level and climate conditions. The hydrologic features within and surrounding the Regional Service Area are shown on Figure 2-4, which was developed from the District's Geographic Information System (GIS).

2.4.2 Groundwater Basins

The recently completed Groundwater Management Plan (GWMP) (MWH, 2005) for the Elsinore Basin evaluated the ability of the District to meet projected demands in the future and recommended specific actions to manage the groundwater basin. Groundwater is a portion of the District's potable water supply; water supplies are further discussed in Section 3.

According to the GWMP, the Elsinore Groundwater Basin is the major source of groundwater supply for the District, Elsinore Water District (EWD) and other local groundwater producers. The basin is approximately 42 square miles with a safe yield of approximately 5,500 AFY. Surface water from McVicker Canyon, Leach Canyon, Dickey Canyon, and the San Jacinto River drains into Lake Elsinore, which covers over 3,000 acre-feet of the basin. Figure 2-5 presents the location of the groundwater basin, the tributary watershed that drains into the basin, surrounding streams and other bodies of water.

The GWMP summarizes inflows to the Elsinore Basin and includes infiltration of local precipitation, runoff from the surrounding watershed, infiltration from the San Jacinto River prior to reaching Lake Elsinore, recycled water effluent from wastewater treatment plants, 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 hydrologic analysis conducted for the GWMP. This natural inflow is roughly equal to the safe yield of the basin because there are no natural outflows from the basin other than evaporation. Groundwater pumping accounts for the majority of outflows from the basin to meet demands. Additional groundwater pumping was incurred when the three Island wells (North, Middle, and South), located in Lake Elsinore, were equipped to replenish the lake and help maintain the water level above the desired operating level of 1,240 feet above mean sea level (MSL).



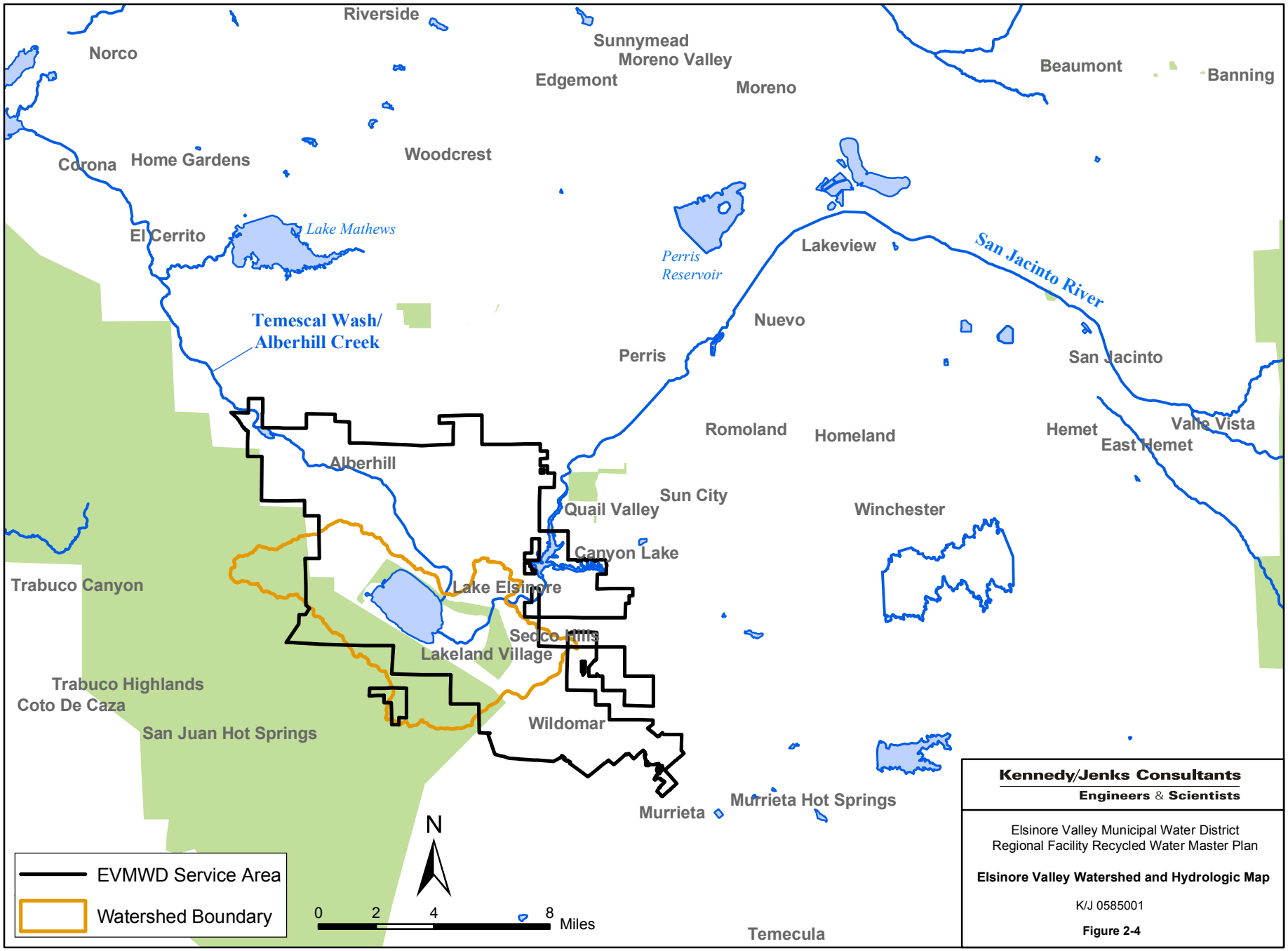
Kennedy/Jenks Consultants
Engineers & Scientists

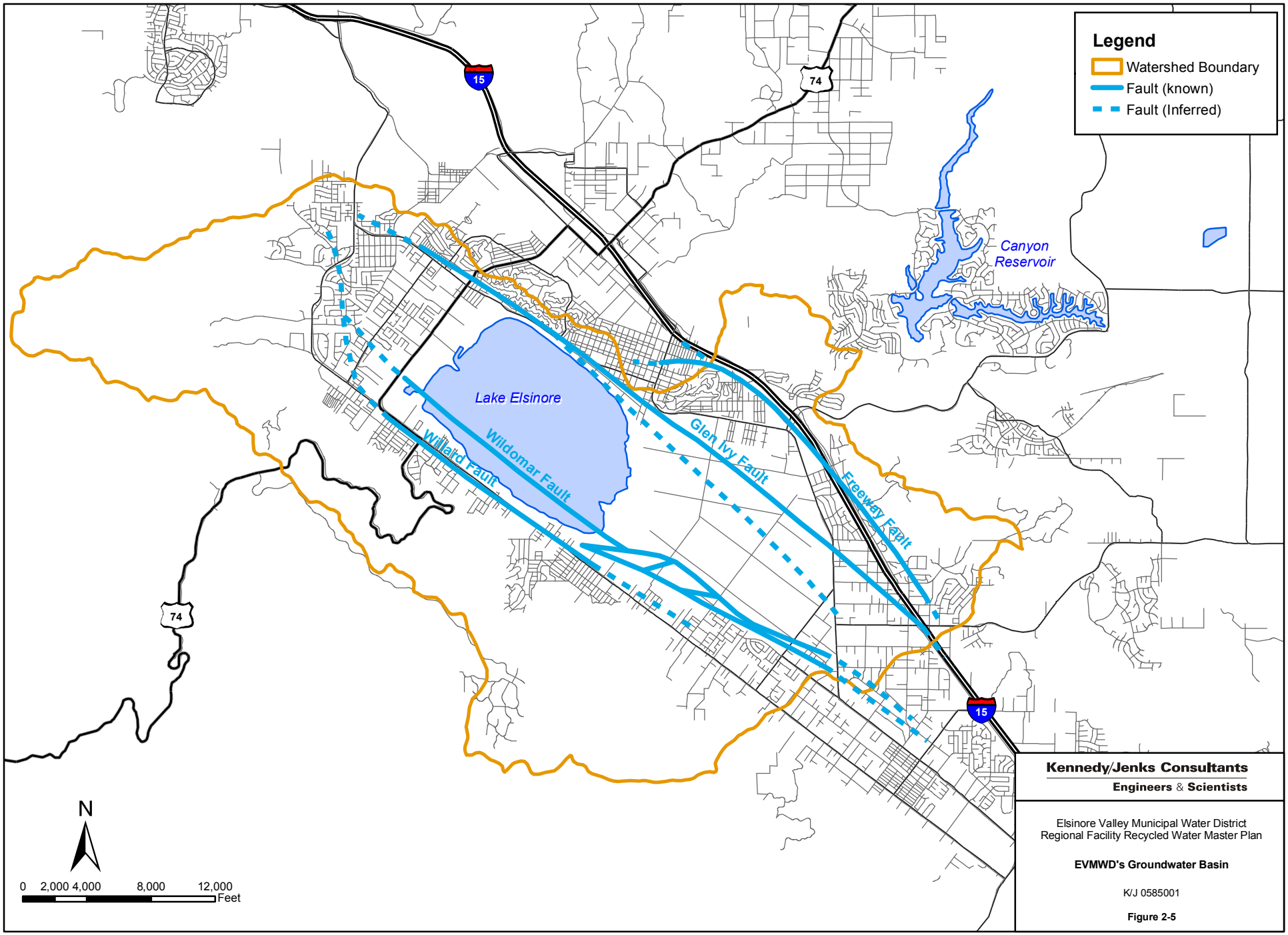
Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan

Regional Sewershed RW Planning Study
Topographic Map

K/J 0585001

Figure 2-3


Riverside
Norco
Sunnymead
Moreno Valley
Edgemont
Moreno
Beaumont
Banning
Corona
Home Gardens
Woodcrest
El Cerrito
Lake Mathews
Perris Reservoir
Lakeview
San Jacinto River
Temescal Wash/ Alberhill Creek
Nuevo
Perris
San Jacinto
Romoland
Homeland
Hemet
Valle Vista
East Hemet
Alberhill
Sun City
Quail Valley
Winchester
Canyon Lake
Trabuco Canyon
Lake Elsinore
Sedco Hills
Lakeland Village
Trabuco Highlands
Coto De Caza
San Juan Hot Springs
Wildomar
Murrieta
Murrieta Hot Springs
Temecula
N
0 2 4 8 Miles
EVMWD Service Area
Watershed Boundary
Kennedy/Jenks Consultants
Engineers & Scientists
Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan
Elsinore Valley Watershed and Hydrologic Map
K/J 0585001
Figure 2-4



Kennedy/Jenks Consultants
Engineers & Scientists

Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan

EVMWD's Groundwater Basin

K/J 0585001

Figure 2-5

Other less significant outflows are flows to surface water (i.e. Temescal Wash) and underflow out of the basin. The GWMP also reported that the basin could be in a state of overdraft, currently estimated at 4,400 AFY. As population increases, water demands are also projected to increase in the future. Without the implementation of the GWMP, the overdraft could reach 6,500 AFY in year 2020 (GWMP, 2003).

2.4.3 Land Use and Land Use Trends

This wastewater service area for the Regional WRF has been divided into 2 main land use areas and from there each has been sub-divided into subcategories for a total of 15 specific land use categories. The 2 main land use categories are residential and non-residential. These areas have 7 or 8 sub- categories within them. The final category is specific planned developments. Table 2-2 shows the existing and ultimate area that each category occupied as of 2003 (WWMP, 2003). Figure 2-6 shows the existing land-use distribution for the District.

Table 2-2
Percentages of Each Land Use Category by Acreage

Land Use Category	Existing Percentage of Total	Ultimate Percentage of Total
Residential	76	49
Non-Residential	9	9
Specific Plans	15	42
TOTAL	**100**	**100**

2.5 Existing Recycled Water Facilities

The District's non-potable recycled water demands are potentially supplied by tertiary treated wastewater from the Regional WRF, the Railroad Canyon WWTP, or Horsethief WWTP, as shown on Figure 2. The District owns and operates each of these facilities. Historically, the District has used the treated effluent from Railroad Canyon WWTP and Horsethief WWTP for irrigation purposes, except during some storm events where rainfall exceeds irrigation demands. Additional sources of recycled water are available to the District from EMWD through two pipeline sources. A brief description of each of these recycled water facilities is as follows and as described in the EIR and Wildomar FPR, a more detailed description is provided in Section 4:

- **Regional WRF:** The tributary area to the Regional WRF is the largest drainage basin and includes the area tributary to Lake Elsinore. The Regional WRF was recently expanded (2004) to accommodate an average flow of 8.0 mgd, including tertiary treatment capabilities. Treated effluent is normally discharged to the adjacent Temescal Wash.

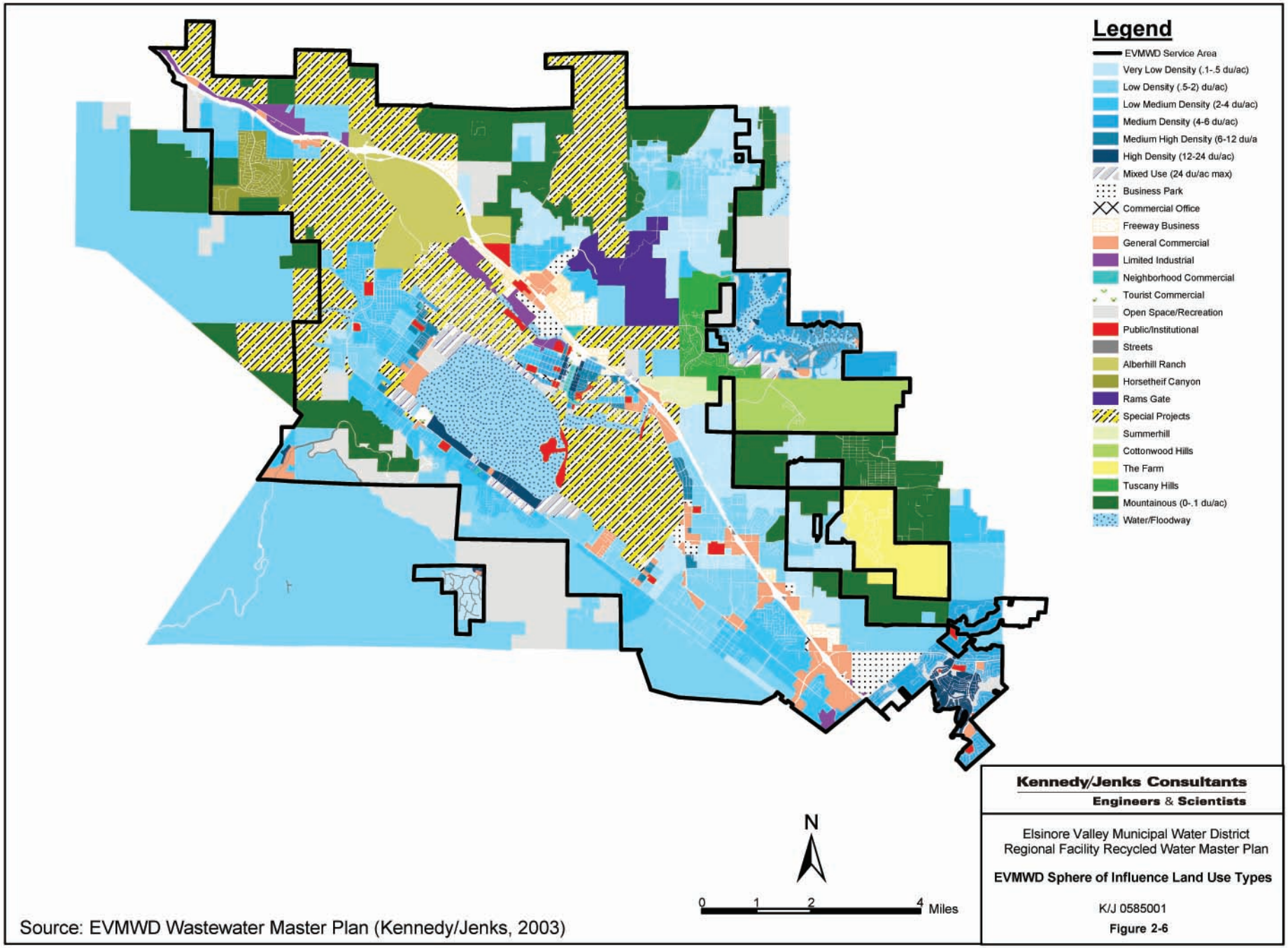
- **Horsethief Canyon WWTP:** The Horsethief Canyon service area is located in the northwestern portion of the District. The Horsethief Canyon WWTP was constructed in 1990 with a treatment capacity of 0.5 mgd.

- **Railroad Canyon WWTP:** The Canyon Lake service area is northeast of the Regional Service Area and is tributary to the Railroad Canyon WWTP. Located on Railroad Canyon Road east of Interstate 15 Freeway (I-15), the Railroad Canyon WWTP was constructed in 1984 with a treatment capacity of 1.2 mgd.

- **Temescal Pipeline:** The District has an agreement with EMWD to purchase excess recycled water from the EMWD system. This recycled water is delivered to the District through EMWD's Temescal Pipeline which parallels the San Jacinto River and terminates at the Wasson Sill**.**

Effluent from the Regional WRF is typically discharged into the Temescal Wash and has also been used to augment the level of water in Lake Elsinore. The District recently completed a 2-year pilot test program using approximately 2 MGD of water from the Regional WRF for replenishing Lake Elsinore water levels. The results of that program were used to evaluate the effects of using recycled water for lake replenishment as part of an overall lake level management strategy.

The purpose of this recycled water FPR is to evaluate the potential for recycled water use throughout the Regional Service Area, with the Regional WRF as the central hub of supply. Where necessary or convenient, the District can augment the service of recycled water through tie-ins or connections to these additional recycled water sources identified above. The District is already engaged in evaluating recycled water supply to the Wildomar, Alberhill, and Canyon Lake areas.



Source: EVMWD Wastewater Master Plan (Kennedy/Jenks, 2003)

Kennedy/Jenks Consultants
Engineers & Scientists

Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan

EVMWD Sphere of Influence Land Use Types

K/J 0585001

Figure 2-6

2.6 Beneficial Uses of Receiving Waters

The Regional Service Area is situated within the Regional Water Quality Control Board Santa Ana Region, as shown on Figure 2-4 and a part of the San Jacinto watershed. The Water Quality Control Plan for the Santa Ana River Basin Plan of 1995 identifies the beneficial uses of waters of the State. The Santa Ana Basin Plan describes beneficial uses and water quality objectives for surface water and groundwater within the study area. Effluent limitations and discharge prohibitions are also described in the Santa Ana Basin Plan. An updated Santa Ana Basin Plan was adopted by the Regional Board on January 22, 2004. Resolution No. R8-2004-0001 amended the Santa Ana Basin Plan to incorporate an updated Total Dissolved Solids (TDS) and Nitrogen Management Plan. The actual waste discharge limits for the Regional WRF is discussed in Section 5.

The beneficial uses for Temescal Creek are the following:

- Agricultural water supply;
- Groundwater recharge;
- Water contact recreation;
- Non-contact water recreation;
- Warm freshwater habitat;
- Wildlife habitat; and
- Rare, threatened, or endangered species.

Recycled water is also discharged to Lake Elsinore. The beneficial uses of Lake Elsinore include:

- Water contact recreation;
- Non-contact water recreation;
- Warm freshwater habitat; and
- Wildlife habitat.

The recycled water use area overlies the Elsinore Groundwater Management Zone, the beneficial uses of which include:

- Municipal and domestic supply;
- Agricultural supply; and
- Industrial process supply.

Section 3: Water Supply Characteristics and Facilities

The recycled water that is to be used for the identified purposes will primarily replace current potable water use, and potentially also replace some agricultural and other non-potable uses. To understand the relationship of recycled water to potable water, this section provides a brief background and review of the current potable system. The District's water supply is a blend of local groundwater, surface water from Railroad Canyon Reservoir (Canyon Lake), and imported water. On average, half of the District's supply is imported and total annual water demand in the Elsinore Valley Municipal Water Resources Division (Elsinore Division) is projected to be 27,678 AFY (EIR 2005). In addition, the District has acquired and now operates the Temescal Division, which supplies both potable and agricultural water.

3.1 Wholesale and Retail Entities

EVMWD, a public non-profit agency, was created on December 23, 1950 under the Municipal Water District Act of 1911. As a special district, EVMWD's powers include provision of public water service, water supply development and planning, wastewater treatment and disposal, and recycling. Currently, the district has over 24,500 water, wastewater and agricultural service connections in southwestern Riverside County.

A Board of Directors sets governing policy and is the final authority for related appeals. The Board is authorized to set rates, fees and charges for district services, operations, and debt financing of capital improvements.

EVMWD is a sub agency of the Western Municipal Water District (WMWD) and a member agency of the Metropolitan Water District of Southern California (MWD).

3.2 Sources of Water for Study Area

EVMWD's Water Supply is a blend of local groundwater, surface water from Railroad Canyon Reservoir (also known as Canyon Lake), and imported water. On average, half the supply is imported. The projected annual water demand in the Elsinore Division for 2005 is projected to be 27,678 acre-feet (EIR, Table 3-6).

The Elsinore division has eight active municipal wells that provide quality drinking water from a deep aquifer. Several additional wells are planned. Groundwater is disinfected at the wellhead and represents 40–50 percent of drinking water supplies in the Elsinore division. By late 2005 all water supplies to the Elsinore Division will be disinfected by chloramines.

EVMWD's Temescal Division was acquired in 1989 when the district purchased the Temescal Water Company. Residential customers are served from domestic wells in the Coldwater Basin. Domestic water supply is also supplemented by imported water from Lee Lake Water District. Agricultural customers in the Temescal Valley receive water from several wells in the Bunker Hill, Colton and Temescal Valley basins, and surface water from Lee Lake, which is fed by the Temescal Wash. Annual water production for this division ranges from approximately 6,000 to 7,000 acre-feet.

EVMWD owns Railroad Canyon Reservoir, also known as Canyon Lake. The reservoir impounds local runoff from the 750 square mile San Jacinto River watershed. Canyon Lake holds nearly 12,000 acre-feet of water behind Railroad Canyon Dam.

For imported water, the Colorado River Aqueduct and State Water Project provide most of southern California's water supply. EVMWD imports treated disinfected water from Lake Skinner and Lake Mathews, located in Temecula and Riverside respectively. Both treatment facilities are operated by MWD. On average, imported water accounts for 48 percent of EVMWD's supply.

Table 3-1 below, provides an overview of the capacity available from each of these water sources as well as a recent example of actual water use from 2004.

Table 3-1
Elsinore Division Existing Sources of Water Supply and Actual Use[a]

Source	Capacity		2004 Actual Use	
	(MGD)	(AFY)	%	(AFY)
Groundwater Wells	14.6	16,349	36%	9,964
Canyon Lake	9.0	10,078	9%	2,491
Imported Water via Auld Valley Pipeline	24.2	27,100	55%	15,223
Imported Water Via Temescal Valley Pipeline	12.7	14,222	0%	-
TOTALS	60.5	67,749	100%	27,678

(a) Data collected from EIR and 2004 Consumer Confidence Report.

3.2.1 Water Billing Rates

EVMWD is divided into 2 distinct divisions for the purpose of billing water rates, the Elsinore Water Division and Temescal Water Division. A majority of the District's customers are in the Elsinore division. Each division includes residential, commercial and landscape irrigation customers; each of which is billed at a different rate. Residential customers are billed on what is called a tiered or block rate program in order to promote conservation among rate payers. All water is billed in units of a 100 cubic feet (ccf), which is equal to 748 gallons.

1. **First Tier:** The first 1-5 ccf of water used. The intent of this rate is to provide a lifeline rate to all District customers.

2. **Second Tier:** The next 6 - 17 ccf (Elsinore Division) of water used (6 - 20 ccf in Temescal Division). The rate for this tier was established to reflect the average cost of water production.

3. **Third Tier:** The next 18 - 40 ccf (Elsinore Division) of water used (21 - 40 ccf in Temescal Division). The rate for this tier was established to promote conservation.

4. **Fourth Tier:** The next 41+ ccf of water used. The rate for this tier was established the cover the additional marginal cost of imported water and to promote conservation.

Directly related to the amount of water a property consumes is the Power Zone charge. This charge is for the energy required to pump water to an elevation that is appropriate to serve a home. The charge is calculated by multiplying the water consumption by a power rate charged for a particular elevation.

Every property served by the District is also charged a fixed meter charge, which is charged to cover the cost of, among other items, of maintaining meters, processing bills, posting payments and repairing water mains. The charge is prorated daily based on a 30 day charge, and the charge applies to all open accounts, whether water was used, or not. A summary of EVMWD's water billing rates is included in Table 3-2.

Table 3-2

EVMWD Water Billing Rates

Elsinore Water Division Water Commodity Rates			Temescal Water Division Water Commodity Charges		
Rate Classification	Current Rates as of July 1, 2005		Rate Classification	Current Rates as of July 1, 2005	
	Per ccf	Per AF		Per ccf	Per AF
Domestic			Domestic		
1 - 5 ccf	$1.00	$436	1 - 5 ccf	$1.32	$ 575
6 - 20 ccf	1.43	623	6 - 20 ccf	1.75	762
21 - 40 ccf	1.79	780	21 - 40 ccf	2.19	954
41-100 ccf	2.43	1,059	41+ ccf	2.98	1,298
100+ ccf	3.79	1,651			
Commercial	1.55	675	Irrigation	2.21	963
Political Subdivision	1.55	675	Industrial	1.90	828
Agricultural	1.55	675	Non-Potable		
Landscape Irrigation	1.81	788	Corona Upper Area	0.92	401
Hydrant Water	2.29	998	Corona Lower Area	0.92	401
Wholesale	1.45	632	Industrial	0.90	392
Reclaimed	0.97	423	Wholesale	1.22	531
Power Charges			**Power Charges**		
Zone	Current Charges (per ccf) as of July 1, 2005		Water Type	Current Charges (per ccf) as of July 1, 2005	
1	$ 0.063		Potable	$ 0.26	
2	0.159		Non-potable	0.08	
3	0.796				
Monthly Fixed Meter Charges by Meter Capacity Unit			**Monthly Fixed Meter Charges by Meter Capacity Unit**		
Meter Size(inches)	Current Charges as of July 1, 2005		Current Charges as of July 1, 2005		
			Non-Potable	Potable	
¾	$ 11.85		$ 10.00	$ 11.85	
1	20.15		17.00	20.15	
1-½	39.11		33.00	39.11	
2	62.81		53.00	62.81	
3	118.50		100.00	118.50	
4	197.90		167.00	197.90	
6	394.61		333.00	394.61	
8	631.61		533.00	631.61	
10	907.71				
12	1,303.50				
14	1,777.50				

3.3 Capacities of Present Facilities

3.3.1 Surface Water

The second water supply source for EVMWD is surface water obtained from the Railroad Canyon Reservoir, also referred to as Canyon Lake. Railroad Canyon Reservoir primarily receives runoff water delivered through a booster station that is located in the flood zone of the San Jacinto Riverbed. Through the acquisition of the Temescal Water Company, EVMWD has the rights to divert up to 15,000 AFY of natural drainage from the San Jacinto River and store that water in the Railroad Canyon Reservoir (SWRCB, 1943). Other sources of water in the Railroad Canyon Reservoir include untreated Colorado River water that is available from MWD connection WR-18A. This imported water connection has a capacity of 69 cfs (44.6 mgd).

EVMWD could purchase the imported water from MWD through WMWD, which is discharged into the San Jacinto River near Nuevo and fills the Railroad Canyon Reservoir. Because the cost of treating raw MWD water is relatively expensive, it is more cost-effective to purchase treated water from the Auld Valley Pipeline instead of purchasing untreated Colorado River water from these sources. However, EVMWD currently has the ability to supplement its Railroad Canyon Reservoir supply with raw imported water.

The Railroad Canyon Reservoir's storage capacity is approximately 4,600 acre-feet (1,500 MG). The Railroad Canyon Storage Agreement between EVMWD and Temescal Water Company that was approved in October 1955 allows EVMWD to store approximately 3,000 acre-feet of Canyon Lake's water and treat that water at the Canyon Lake WWTP before distribution. The Canyon Lake Property Owners Association leases the surface rights to the lake for recreational purposes under a 1968 agreement. Under this agreement, EVMWD is responsible for maintaining a minimum lake elevation of 1,372 ft. EVMWD typically discontinues operation of its WWTP 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 MWD water to maintain the minimum lake elevation.

The WWTP is located north of Railroad Canyon Dam and has a design capacity of 9 mgd (13.9 cfs). It normally operates between April and October to provide additional water for summer demands (DSWMP, 2002). Between the years of 1993 to 2002, the average water treated at the Canyon Lake WTP and distributed to the EVMWD service area is approximately 2,474 acre-feet. (WSA, 2003)

3.3.2 Imported Water

EVMWD purchases treated imported MWD water from the Western Municipal Water District (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. EVMWD entered into a Water Facility Capacity Agreement for the AVP with the Eastern Municipal Water District (EMWD) in November 1986. Based on the Interagency Agreement, EVMWD has the rights to purchase or acquire a maximum flow rate of 37.5 cfs (24.2 mgd or approximately 27,100 AFY) from EMWD through the MWD Connection EM-17. EMWD sells imported water for the AVP to WMWD, which WMWD sells to EVMWD through an interagency water sales agreement (September 14, 1988). 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 MWD's R.A Skinner Filtration Plant. It is then pumped into the Loop Zone and Cal Oaks Zone by the California Oaks Pumping Station located on Hancock Avenue.

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 MWD's Mills Filtration Plant in Riverside. The Mills Gravity 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. Installation of the TVP was part of the Temescal Valley Project completed in February 2002.

EVMWD's acquisition of the Temescal Water Division in August 1989 resulted in the acquisition of water rights to Meeks and Daley Mutual Water Company's facilities and water supply sources. Following the acquisition, EVMWD received entitlements to "canal carrying rights" located in the Gage Canal and the Riverside Canal, including rights to the Palm Avenue Well that is located in Grand Terrace, Riverside County. In addition, the Meeks and Daley Company also has rights to pump 7,833 AFY of water from the San Bernardino Bunker Hill Basin. Through shareholder ownership, EVMWD's annual allotment from the basin is approximately 4,482 acre-feet (Comprehensive Annual Financial Report, 2002).

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. A separate lease agreement between EVMWD and WMWD provides EVMWD the ability to use up to 5 cfs (3.2 mgd or 3,620 AFY) of additional capacity from the Mills Gravity Pipeline on a temporary basis (EVMWD, 2001).

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 AFY) from the Mills Pipeline, increasing the total lease capacity to 12 cfs (7.8 mgd or 8,688 AFY) (EVMWD, 2002). 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 AFY) (Comprehensive Annual Financial Report, 2002). Thus, EVMWD can currently obtain up to 21 cfs (13.6 mgd or approximately 15,200 AFY) of water from the TVP.

Based on MWD's reliability analysis, including all water supplies under development, imported water is fully reliable through 2025 (MWD, 2003).

3.3.3 Groundwater Wells

EVMWD has nine operating groundwater wells with a total capacity of 14.6 million gallons per day (mgd) or approximately 20,048 AFY. This includes the capacity of Joy Street well, which was drilled in 2001. Groundwater supplied 33 to 57 percent of EVMWD demands in the past ten years.

Water rights for the Elsinore Groundwater Basin are not adjudicated (UWMP, 2002). According to the Groundwater Management Plan (GWMP), approximately 94 percent of groundwater produced by the basin is pumped by EVMWD, which serves a 96 mile square area in western Riverside County. Other groundwater producers include Elsinore Water District (EWD) and private well owners. EWD, which supplies water to portions north and south of Lake Elsinore,

pumps approximately five percent of groundwater from the basin. Local pumpers with private wells account for one percent of basin production (GWMP, 2003).

3.3.4 Storage Facilities

As discussed earlier, the Railroad Canyon Reservoir's (Canyon Lake) storage capacity is approximately 4,600 acre-feet (1,500 MG). Finished water from the Canyon Lake WWTP flows to a 1.0 MG steel on-site storage reservoir.

There are 49 storage reservoirs within EVMWD's system and 40 different reservoir sites. Nine of the sites contain two reservoirs each. The reservoirs range in size from 20,000 gallons to 8 MG, with a total system storage capacity of approximately 70 MG (DSMP, 2002).

3.3.5 Limitations of Existing Facilities

According to EVMWD's 2002 Distribution System Master Plan (MWH, 2003), additional water supplies consisting of six groundwater wells or 12.8 mgd of imported water will be required to meet future water demands. Also, 35 additional storage facilities are recommended along with 106 miles of pipeline.

3.4 Groundwater Management

As discussed earlier in Section 2.3, as a result of increasing potable and non-potable water demands, the Elsinore Groundwater Basin's current overdraft of 4,400 AFY is projected to increase to about 6,500 AFY in year 2020 in the absence of groundwater management (GWMP, 2003). In addition to the overdraft, water levels are also expected to decline, which could adversely impact water quality and land subsidence in the EVMWD service area. The GWMP and the Back Basin Groundwater Storage Project (BBGSP) have been developed to address the basin's overdraft condition, enhance water quality, and improve the water supply reliability by increasing EVMWD's available water supplies to meet future potable water demands.

3.5 Water Use Trends

Since EVMWD began providing potable water to the Elsinore Valley area in 1992, there has been a continuous rise in demand by its customers. In 1992, customer demand averaged 16,365 AFY. By 2002, demand was up to 24,251 AFY.

EVMWD currently has non-potable water customers in the Canyon Lake and Horsethief Canyon regions. Non-potable customers in Canyon Lake are served with tertiary-treated recycled water from the Railroad Canyon WRP. Non-potable customers in Horsethief Canyon are served with tertiary-treated recycled water from Horsethief Canyon WRP. The entire effluent flow from these two plants is used for non-potable irrigation demands, except during wet weather flows. The normalized[1] existing recycled demands in Canyon Lake are 1,104 AFY and in Horsethief Canyon are 378 AFY.

[1] Normalized flows are normalized on the number of services at each plant served that year, then trended linearly.

In 2004, EVMWD's District-Wide Water Supply Assessment projected future water demands based on the amount of projected development. For future demands, it is assumed that current uses will continue to use water at the current rate. The projected water demands are listed in Table 3-3.

Table 3-3
Summary of Elsinore Division Projected Water Demands[(a)]

Year	Projected Demands (AFY)
2000	22,828
2005	27,678
2010	35,678
2015	43,691
2020	49,955
2025	58,798

(a) From Table 3-6 of the EIR.

EVMWD is charging landscape irrigation users in the Elsinore Division $1.81/unit (unit = 100 ft^3 = 748 gallons) of potable water, based on single-family residential customer with a 3/4 inch Meter, which equates $797 per acre foot of water.

3.6 Quality of Water Supplies

EVMWD drinking water is tested extensively and results consistently show that regulated, health-related constituents either are not detected at all or are present in amounts below state and federal primary drinking water standards. EVMWD takes over 40 bacteriological samples each month from the treatment plants and distribution system. EVMWD monitors turbidity (cloudiness) and chloramines (a water disinfectant). Aluminum, predominantly a water treatment by-product, is measured at the treatment plants. Samples of naturally occurring fluoride and perchlorate are taken from source water.

EVMWD tests for more than 100 potential drinking-water constituents. Levels of many of the constituents tested for are published in EVMWD's Annual Consumer Confidence Report.

Furthermore, as a result of the high source water quality of the Elsinore groundwater basin, EVMWD's potable water supply is low in total dissolved solids and other secondary drinking water standards related to aesthetics like odor, taste, hardness, etc. EVMWD consistently meets primary drinking water standards.

3.7 Sources for Additional Water

3.7.1 MWD Programs

MWD and its member agencies have embarked on an aggressive campaign to develop additional local resources. There are promising opportunities to develop seawater desalination and expand the Local Resources Program.

Turning seawater into drinking water became more viable with the introduction of Metropolitan's Seawater Desalination Program. Launched in the summer of 2001, the program will provide financial and technical support for the development of local cost-effective seawater desalination projects. A call for proposals produced five projects proposed by member agencies, which were evaluated by Metropolitan's review committee of staff and consultants. Collectively, the projects could produce about 132,000 acre-feet of drinking water per year. The program is in its early stages with most of this production scheduled to be available by 2010, with the remainder coming on line by 2015.

MWD is promoting the development of water recycling projects that reduce demand for imported water and improve regional water supply reliability. Currently the Local Resources Program, encompassing both recycling and groundwater recovery, has implemented 53 recycled water projects yielding over 235,000 acre feet of local supply and 22 groundwater recovery projects. In accordance with the Integrated Resources Plan (IRP), MWD's regional production target is 500,000 acre-feet by 2020 for its Local Resources Program. MWD continues to provide financial incentives through its Local Resources Program to its member agencies to encourage development of local water resource process. These expected water supply benefits are incorporated into the forecasts of demand on MWD.

As additional imported supplies, local projects, conservation, storage and transfers are developed to meet the goals set forth in the IRP Update, associated costs are also expected to increase. In order to fund the projects and programs envisioned in this report, MWD's rates are forecast to increase between $76 and $100 per acre-foot between 2004 and 2013, depending on MWD's water sales.

3.7.1.1 EVMWD Specific MWD/WMWD Programs

MWD is currently in the planning stages of a number of specific projects in Riverside County that could potentially supply EVMWD with additional water supply. There are two water treatment plants (WTP) in Riverside County. A siting study is currently underway by MWD for this WTP to be located in Riverside County, possibly near the community of Eagle Valley at I-15 and the community of Cajalco. This WTP is referred to by MWD as the Central Pool Augmentation Project and will serve Riverside and Orange Counties. A siting study for a second proposed WTP project called the Riverside County WTP is underway. The Riverside County WTP is envisioned to serve only Riverside County.

In addition, the Western Municipal Water District (WMWD) has a pipeline project in the planning phases to parallel the existing MWD Mills Pipeline. The pipeline is planned to run from the existing MWD Mills WTP to the junction of Temescal Canyon Road and Cajalco Road where it will deliver water to EVMWD's existing Mills Pipeline turnout.

3.7.2 Back Basin Groundwater Storage Project

The recommended GWMP includes conjunctive use with the installation of seven new dual-purpose wells, conversion of seven existing wells, five percent water conservation, and lake replenishment with the two Island wells and recycled water. Eleven dual-purpose wells would be located in the Back Basin, while three dual-purpose wells would be located in the area north of Lake Elsinore.

The Back Basin, which is located southeast of Lake Elsinore, is primarily the floodplain for the lake and the San Jacinto River. When the lake level reaches an elevation of 1,262 feet, water spills to the Back Basin, which eventually evaporates. Only a small volume infiltrates in the groundwater basin due to substantial clay layers near the surface (GWMP, 2003).

The proposed Back Basin Groundwater Storage Project (BBGSP) will be implemented as part of the GWMP. The proposed project consists of installing six of the seven new dual-purpose wells (one dual-purpose well has already been installed but not equipped) that are identified in the recommended alternative of the GWMP. Approximately 9 mgd of additional supply capacity would be made available through the construction of these wells (both deep and shallow). During wet and average years, water will be injected into the groundwater basin, while water will be extracted from the groundwater basin during dry years.

The estimated cost of the BBGSP is approximately $18.3 million. EVMWD has requested funding for $11.9 million of grant funding under Proposition 13 and has included its share of the construction costs in its Fiscal Year 2003-2004 budget. If EVMWD receives the grant for funding, construction of the BBGSP is expected to begin in October 2004 and be completed in August 2006.

3.7.3 Alberhill Recycled Water Facilities

Wastewater flows from the Horsethief Canyon drainage basin are currently treated at the Horsethief Canyon WWTP. The Horsethief Canyon basin naturally flows into the Alberhill drainage area. It is the intention of EVMWD to abandon the Horsethief Canyon WWTP and redirect all flows from the Horsethief Canyon drainage basin to the proposed Alberhill WRF.

The Alberhill service area to be investigated is the area northwest of Lake Elsinore and naturally drains to the north, away from the Regional, or center portion of EVMWD's service area. Currently, no sewer system or treatment facility exists in the Alberhill drainage area.

Ultimate capacity of the Alberhill WWTP is proposed as 8.0 mgd, with phasing of 2-3 mgd increments. Anticipated growth in the near future (within 5 years) includes primarily residential land uses with an approximate average daily wastewater flow of 2 mgd.

EVMWD has applied for and received a facilities planning grant from the SWRCB to conduct this study which is currently underway.

3.7.4 Other Facilities

Two additional projects that EVMWD is planning to achieve additional water supplies are discussed below and include increasing the supply delivered from the TVP pipeline and a conjunctive use project with WMWD.

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 gradeline sufficiently to overcome the increased headloss associated with the higher flow rate. EVMWD has preliminarily budgeted the construction of the pumping station as part of the FY 2005-06 budget. Design is expected to begin at that time, with construction completed in FY 2006-07. EVMWD has not located a site for this pump station at this time; one possible site is at the future Alberhill WRP site. EVMWD's

total usage rights and lease capacity from the TVP connection on the Mills Gravity Pipeline is currently 21 cfs. There is currently some 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. This allows EVMWD to avoid the standby charge the WMWD imposes on unused pipeline capacity.

In addition to the TVP, EVMWD is working with WMWD in the development of the Riverside-Corona Feeder. This project is being planned as a conjunctive use project. This project consists of groundwater production wells and a major feeder pipeline capable of delivering 40,000 acre feet per year of groundwater from the Bunker Hill Basin in San Bernardino to water purveyors in the northern part of Western's district. These purveyors are primarily dependent on imported water from the Metropolitan Mills Treatment Plant for water needed to support future growth. A major goal and purpose of the project is to reduce the dependence on direct delivery of imported water and thereby contribute to the Upper Santa Ana Watershed effort to "drought proof" or be self-sufficient under dry year conditions. Proposed project facilities are anticipated to include:

- Up to 20 wells located in the pressure zone of the Bunker Hill basin.
- 30 miles of feeder pipeline with diameters ranging from 36-inch to 72-inch generally paralleling the 91 Freeway from San Bernardino to Corona.
- Intertie with the Mills Gravity Pipeline near La Sierra Ave. in Riverside.
- Intertie with the Arlington, Temescal, Chino I and Chino II Desalter piping system near Home Gardens.
- Intertie with the Elsinore Valley MWD Temescal Valley Pipeline at its terminus in Corona.
- Delivery and metering facilities at connections to each participating purveyor.

During periods of wet hydrology both native and imported water are available in the Bunker Hill Basin. Through agreement with San Bernardino Valley Municipal Water District (SBVMWD) and MWD, high quality State Water Project water can be purchased during periods of surplus at reduced rates and recharged. In exchange, groundwater can be produced in the pressure zone to consistently meet demands irrespective of the periodic shortages due to dry hydrology. Similarly, abundant rainfall in the watershed can be recharged in replenishment basins or reservoirs when available and produced on demand from wells in the pressure area. In effect, this project stores water available during wet periods for domestic and municipal purposes.

A portion of the cost of this project is expected to be federally funded. HR 3334 (Calvert), which authorizes federal funding for 35 percent of the cost of the Riverside-Corona Feeder, was passed by the House of Representatives in September 2004 and is pending Senate approval.

Also, WMWD is currently preparing a Integrated Regional Water Management Plan to evaluate alternative water supplies for short-term outages as well as long-term drought to serve WMWD sub-agencies including EVMWD.

Section 4: Regional Area Wastewater Characteristics and Facilities

Recycled water for delivery to the Regional Service area could potentially be supplied by the Regional WRF, the Horsethief WWTP, the Railroad Canyon WWTP, the Temescal Pipeline, or the TVWRF recycled water pipeline. The purpose of this recycled water master plan is to identify users that can be supplied within the Regional Service Area, primarily by the Regional WRF but augmented wherever necessary or convenient by any of these other integrated sources. Potentially, the Regional recycled water system could be tied into the TVRWRF pipeline, or into the Alberhill and Wildomar service areas to provide for additional recycled source water or to provide a redundancy of supply.

The Regional WRF was originally built in 1982 to provide wastewater treatment for the City of Lake Elsinore and the surrounding areas, and is located at 14980 Strickland Avenue, Lake Elsinore, in Riverside County. The plant is owned and operated by the District. A history of the plant includes the following:

- Built in 1982 with a treatment capacity of 2 MGD;
- Expanded in 1989 to a 4 MGD capacity;
- Recently expanded to treat a peak tertiary treatment capacity of 8 MGD and treats an annual average of 4.67 MGD (~5,220 AFY).

The Regional WRF treats domestic and commercial wastes generated within the District's service area, which includes the Cities of Lake Elsinore and Canyon Lake, and the communities of Wildomar and Lakeland Village. For 2004, the average influent to the Regional WRF was 4.67 MGD (EIR 2005).

The majority of the treated effluent from the Regional WRF discharges into Reach 5 of the Temescal Creek, also called the Temescal Wash, which is tributary to Reach 3 of the Santa Ana River. Approximately 0.5 MGD of the discharged effluent flows into a channel alongside the Temescal Creek that flows into Gunerson Pond, a wetland constructed by the US Army Corps of Engineers. In 2002, the District began a pilot program whereby 2 MGD of the tertiary treated effluent was also pumped into Lake Elsinore to address lake level stabilization problems. It is planned to discharge up to 9.2 mgd (Waste Discharge Requirements, RWQCB 2005) of the tertiary treated wastewater to the Lake in the future. However, the ability to discharge into the lake will be dependent on additional effluent limitations and other possible Total Maximum Daily Load (TMDL) requirements. The District is currently evaluating these limitations and potential treatment alternatives. Currently, approximately 4.67 MGD of treated effluent is discharged to Reach 5 of Temescal Creek.

The wastewater treatment at the Regional WRF consists of the following:

1. Preliminary treatment of bar screens and grit chambers.

2. Primary sludge treatment by belt press mechanical dewatering and drying. Sludge bed dewatering and drying is also employed, especially in the summer.

3. Secondary treatment utilizing oxidation ditch technology, and anaerobic reactors for carbonaceous and nitrogenous pollutant reduction.

4. Tertiary treatment consisting of anthracite coal filtration beds, and disinfection by ultraviolet light.

The effluent from the Regional WRF meets Title 22 requirements for recycled water, and specifically for nonrestricted recreational impoundments. Treatment requirements for these uses are that the recycled water shall be at all times an adequately disinfected, oxidized, coagulated, clarified, and filtered wastewater (tertiary treated).

For discharges into the Temescal Creek and Lake Elsinore, it is required to reduce the chlorine residual level to below 0.1 mg/l. Currently, the Regional WRF utilizes UV disinfection treatment, which has many advantages and does not produce a chlorine residual. However, for distribution of recycled water for irrigation and commercial purposes, it will be desirable to chlorinate the recycled water and produce a chlorine residual. This is necessary to minimize biological growths in the recycled water system piping and infrastructure. As a part of the recycled water system, one option would be to feed liquid chlorine into the recycled water as it enters the storage reservoir, located within the Regional WRF.

A brief description of the other regionally available recycled water facilities is as follows and as described in the EIR and Wildomar FPR:

- **Horsethief Canyon WWTP:** The Horsethief Canyon service area is located in the northwestern portion of the District. The Horsethief Canyon WTTP is located near Horsethief Canyon Road in the northeastern portion of the Horsethief Canyon planned community. The Horsethief Canyon WWTP was constructed in 1990 with a treatment capacity of 0.5 mgd. Horsethief Canyon effluent is used for irrigation or stored on-site. There is no local surface discharge.

  However, current plans call for the demolition of the Horsethief Canyon Wastewater Treatment Plant (WWTP) – the objective of this project is to demolish existing wastewater treatment facilities at this location, construct a sewer pump station to transfer flows to a new Alberhill plant, and create a neighborhood park. The Alberhill sewer drainage area is separated from the Regional WRF drainage area by several hills. Therefore, recycled water uses for that drainage area are being considered under a separate study.

- **Railroad Canyon WWTP:** The Canyon Lake service area is northeast of the Regional Service Area and is tributary to the Railroad Canyon WWTP. Located on Railroad Canyon Road east of Interstate 15 Freeway (I-15), the Railroad Canyon WWTP was constructed in 1984 with a treatment capacity of 1.2 mgd. Treated effluent is used for golf course irrigation. Any excess effluent and all biosolids from the plant are piped to the Regional WWTP. There is no local surface discharge.

- **Temescal Pipeline:** The District has an agreement with EMWD to purchase excess recycled water from the EMWD system. Under this agreement, the District can purchase between 5,000 and 30,000 AFY of surplus effluent. This recycled water originates from EMWD's Moreno Valley and Perris Valley WRFs and normally available only in wet periods when EMWD's recycled water usage is low and its storage facilities

are full. This recycled water is delivered to the District through EMWD's Temescal Pipeline which parallels the San Jacinto River and terminates at the Wasson Sill.

- **TVRWRF Pipeline:** Recycled water for the Wildomar area, with potential for tie-ins to the Regional Service Area, will be provided through the EMWD Temecula Valley Regional Water Reclamation Facility (TVRWRF) Pipeline. Recycled water conveyed in the TVRWRF pipeline is a blend of recycled water from RCWD Santa Rosa Water Reclamation Facility (SRWRF) which originates from EVMWD's Southern Section and from EMWD TVRWRF.

Section 5: Treatment Requirements for Discharge and Reuse

5.1 General and Individual Recycled Water User Information & Requirements

The California Department of Health Services (DHS) establishes water quality and treatment requirements for recycled water. DHS publishes these requirements in a document called the California Health Laws Related to Recycled Water or "The Purple Book". The Purple Book provides a single comprehensive source of guidelines and requirements for recycled water usage in California. This document was last updated in June 2001.

Based on the type of recycled water use projected for the Regional Service Area, disinfected tertiary recycled water will be required for the planned irrigation areas as described in the Purple Book. The Regional WRF and the TVWRF pipeline both provide disinfected tertiary treated recycled water. These general and individual water requirements are described in the sections below.

5.2 Disinfected Tertiary Recycled Water

Disinfected tertiary recycled water is to be used for:

- Parks and playgrounds
- School yards
- Residential landscaping
- Cemeteries
- Freeway landscaping
- Ornamental nursery stock and sod farms (where access by general public is not restricted)

Disinfected tertiary recycled water is defined in Section 60301.230 of the Title 22 Code of Regulations, Division 4. Environmental Health, Chapter 3 Water Recycling Criteria (and also contained in the Purple Book) as follows:

> "The filtered wastewater has been disinfected by either:
>
> - A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or
> - A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.
>
> The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed a[n] Maximum Probable Number (MPN) of 2.2 per 100 milliliters utilizing

the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters."

In the Regional Service Area, all the planned irrigation areas fall under this category.

5.3 Health-related Water Quality or Treatment Requirements

Currently all areas considered for irrigation with recycled water are being irrigated with or have potable water pipes tied into their irrigation systems. Tying into the irrigation system with recycled water will require that the potable systems are separated from the recycled water sources. The Purple Book describes the different backflow preventors that are required to avoid cross-contamination of potable water with recycled water.

In addition, to keep pipes that convey recycled water distinct, the Purple Book references the requirements of the Health and Safety Code, Division 104. Environmental Health Services, Part 12. Drinking Water, Chapter 5. Water Equipment and Control, Article 2. Cross Connection Control by Water Users, Section 116815:

> "All pipes installed above or below the ground, on and after June 1, 1993, that are designed to carry recycled water, shall be colored purple or distinctively wrapped with purple tape."

Since the regulations compiled in the Purple Book are intended to protect public health, compliance with these regulations should result in public health protection.

5.4 Wastewater Discharge Requirements

As discussed previously, the Regional Service Area lies within the watershed boundary of the RWQCB Santa Ana region. Also, recycled water for the Regional area will be provided through newly constructed pipelines. Recycled water for the Regional area will most likely originate from the Regional WRF, but could be from other tertiary sources where necessary or convenient. That is, it can also be supplied from any of the Regional Service Area facilities or recycled water pipelines in the area. This plan would utilize the integrated resources that exist in the Regional Service Area. The wastewater discharge requirements for the WRP are discussed below.

Discharges from the District's Regional WRF are regulated by the California Regional Water Quality Control Board Santa Ana Region Order No. R8-2005-0003, National Pollutant Discharge Elimination Systems (NPDES) Permit No. CA8000027. This permit contains the Waste Discharge Requirements (WDR). The WDR contains both flow and water quality limitations for the discharge into the Temescal Wash, a summary of which are listed in Table 5-1.

Table 5-1
Summary of Regional WRF Effluent Limitations for Discharge to the Temescal Wash

Constituent	Units	Maximum Daily	Average Weekly	Average Monthly	12-month Average
BOD5	mg/l		30	20	–
Total Suspended Solids (TSS)	mg/l		30	20	–
Total Dissolved Solids (TDS)	mg/l			–	700
Copper, Total	µg/l	70		35	
Cyanide, Fee	µg/l	8.5		7.2	
Nitrogen as Ammonia, Total	mg/l			4.5	
Total Inorganic Nitrogen	mg/l			13	
Coliform	MPN/100ml	[b]	[b]	[b]	
Turbidity	NTU	10[a]			
pH	Within the range of 6.5 to 8.5 pH units.				

[a] Requirements also include a 24-hour average of 2 NTU and cannot exceed 5 NTU more than 5 percent of the time within a 24-hour period.
[b] The total coliform concentration of effluent shall not exceed a most probable number (MPN) of 2.2 per 100 milliliters, based on the median results of the last 7 days for which analyses have been completed; and shall not exceed MPN of 23 per 100 milliliters in more that one sample in any calendar month. No samples shall exceed a MPN of 240/100 ml.

In addition, the discharge of wastewater or use of recycled water shall at all times be a filtered and subsequently disinfected wastewater that meets the Title 22 criteria.

5.4.1 Toxicity Related Requirements

The monitoring and reporting program contains no numeric limitation for toxicity. However, the District is required to conduct chronic toxicity monitoring as specified. If the result of any chronic toxicity test on the effluent exceeds 1.0 TU_c, then the District is required to conduct accelerated monitoring and develop an Initial Investigation Toxicity Reduction Evaluation (IITRE).

It is not anticipated that these toxicity requirements would impact the ability to supply recycled water.

5.5 Individual Recycled Water User Information Needs and Requirements

The largest group of potential users of recycled water within the Regional WRF area is the schools, followed by parks. In order to determine any specific individual needs, it was determined that the school irrigation systems would represent the most complex needs and user requirements of the recycled water system. To determine more specific concerns and issues, Kennedy/Jenks contacted Mr. Bill Fouts, Grounds Supervisor, from the Lake Elsinore Unified School District (LEUSD). The following list of requirements is based on conversations and information collected from the LEUSD.

1. In general, due to the sports field irrigation areas requiring so much water, the sites are irrigated one at a time in sequence, as opposed to irrigating all of the fields at the same time. The sports fields typically use sprinkler heads that are designed to deliver 20 gpm per sprinkler head.
2. Sites where landscape irrigation water might overspray onto cars or walkways are also irrigated during "off hours" to avoid human contact.
3. Therefore, the typical irrigation times begin at sunset around 8:00 PM and end at 6:00 AM. During the summer when higher volumes of water are required, irrigation may begin at 6:00 PM.
4. Water use is higher during the summer months.
5. On average, the School District would like 60 psi of water pressure at each school location. They indicated that they would be willing to accept lower delivered pressures and could install their own pressure booster pumps.

Due to the large volumes of potable water that the LEUSD uses and the associated high costs for purchasing that water, they are very motivated to switch to recycled water and are willing to work closely with the District. It is expected that either City or residential parks would have similar water requirements and would receive the same benefits as the schools.

5.6 Health-related Water Quality or Treatment Requirements

Currently all areas considered for irrigation with recycled water are being irrigated with or have potable water pipes tied into their irrigation systems. The Purple Book describes the different backflow preventors that are required to avoid cross-contamination of potable water with recycled water.

In addition, to keep pipes that convey recycled water distinct, the Purple Book references the requirements of the Health and Safety Code, Division 104. Environmental Health Services, Part 12. Drinking Water, Chapter 5. Water Equipment and Control, Article 2. Cross Connection Control by Water Users, Section 116815:

> "All pipes installed above or below the ground, on and after June 1, 1993, that are designed to carry recycled water, shall be colored purple or distinctively wrapped with purple tape."

Since the regulations compiled in the Purple Book are intended to protect public health, compliance with these regulations should result in public health protection.

5.7 Other Wastewater Discharge Requirements

Recycled water can also be provided through the EMWD TVRWRF Pipeline. Recycled water conveyed in the TVRWRF pipeline is a blend of recycled water from RCWD SRWRF which originates from EVMWD's Southern Section and from EMWD TVRWRF. The wastewater discharge requirements for both WRFs are discussed separately below.

Discharges from the EMWD TVRWRF are regulated by the California Regional Water Quality Control Board San Diego Region Order No. 2000-165, National Pollutant Discharge Elimination Systems (NPDES) permit No. CA8000188 issued to EMWD. This permit is more commonly

called the Waste Discharge Requirements (WDR No. 2000-165). The WDR was adopted in September 2000 and modified in January 2002, July 2003, and January 2004 and contains both flow and water quality limitations.

The existing and proposed waste discharge rates for TVRWRF are as follows:

Existing ADWF Capacity:	8.0 mgd
Proposed ADWF Capacity:	12.0 mgd

Order No. R8-2002-0009-A01 provides effluent limitations for many constituents, are listed in Table 5-2.

RCWD's SRWRF operates in accord with two discharge orders issued and monitored by the San Diego Regional Board. Regional Board Order No. 96-54 (NPDES CA0108821) provides effluent limitations for the discharge of disinfected tertiary effluent into Murrieta Creek immediately adjacent to the SRWRF site. Regional Order No. 94-92 established effluent limitations for disinfected tertiary effluent for irrigation use throughout an extensive area within RCWD boundaries. The WDP was adopted in August 1994 and modified in June 1997, November 1999, and October 2002 and contains both flow and water quality limitations.

The existing waste discharge limitations for SRWRF are for an existing ADWF capacity of 5.0 mgd. Order No. 94-92 provides effluent limitations for many constituents, are listed in Table 8.

Table 5-2
EVMWD's TVRWRF Order No. 2000-165 and
RCWD SRWRF Order No. 94-92 Effluent Limitations

Constituent	Units	12-month Average	30-day Average	Instantaneous Max
$CBOD_5$	mg/l	–	30	45
Total Suspended Solids (TSS)	mg/l	–	30	45
Total Dissolved Solids (TDS)	mg/l	750	–	825
Chloride	mg/l	200	–	250
Sulfate	mg/l	200	–	250
Manganese	mg/l	0.05	–	0.06
Iron	mg/l	0.3	–	0.4
Boron	mg/l	0.75	–	0.8[a], 0.75[b]
Coliform	MPN/100ml		*	**
Turbidity	NTU		*	**
pH	Within the limits of 6.0 to 9.0 at all times.			

[a] For EMWD's TVRWRF, the limit is 0.8.

[b] For RCWD's SRWRF, the limit is 0.75.

* The total coliform concentration of effluent shall not exceed a most probable number (MPN) of 2.2 per 100 milliliters, based on the median results of the last 7 days for which analyses have been completed; and shall not exceed MPN of 23 per 100 milliliters in more that one sample in any 30-day period. No samples shall exceed a MPN of 240/100 ml.

** The turbidity concentration of the effluent shall not exceed a daily average value of 2 NTU, shall not exceed 5 NTU more than 5 percent of the time during any 24-hour period, and shall not exceed 10 NTU at any time.

5.7.1 Water Quality Objectives (WQOs) and Effluent Limits

WQOs and Effluent Limits are included in the WDR No. 2000-165. These objectives and limitations are based on the "State Water Resources Control Board's "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (the State Implementation Plan or SIP); the plans, policies and water quality objectives and criteria of the 1995 Basin Plan, California Toxics Rule, Quality Criteria for Water, applicable Federal Regulations, National Toxics Rule, National Toxics Rule Amendment, and best professional judgment as defined in the Basin Plan."

5.7.2 Applicable Water Quality Objectives

Based on discussions with the Regional Board and EMWD, EVMWD's recycled water from the TVRWRF pipeline will be governed by EMWD WDR No. 2000-165, from the San Diego Region 9 Basin Plan, which are discussed below.

The WDR No. 2000-165 includes applicable water quality objectives taken from the Basin Plan. They are as follows in Table 5-3.

Table 5-3

EVMWD's TVRWRF Order No. 2000-165 Water Quality Objectives

Constituent	Maximum Daily Concentration Limit (µg/L)	Average Monthly Concentration Limit (µg/L)	Maximum Daily Mass Emission Rate (lbs/day)	Average Monthly Mass Emission Rate (lbs/day)
Total Recoverable Chromium (VI)[7]	16.3	8.1	6.46	3.21
Total Recoverable Copper	25.6	12.8	10.14	5.07
Total Recoverable Mercury	0.08	0.04	0.03	0.016
Total Recoverable Selenium	8	4	3.17	1.58
Free Cyanide	8.5	4.3	3.37	1.7
Bis (2-ethylhexyl) phthalate	15	5.9	5.94	2.34
Limits for metals that are hardness dependent were computed based on the median of effluent flows = 138 mg/L[8]				

[7] The discharger may meet this limitation as total chromium.

[8] The hardness data used were from the Moreno Valley and Perris Valley WRFs.

The WDR No. 94-92 includes applicable water quality objectives taken from the Basin Plan. They are as follows:

"The priority pollutant criteria limitations in Order No. R9-2002-0104 have been determined using the California Permit Writer and Training Tool (CAPWTT) model, in accordance with the CTR and Implementation Policy, to adjust the applicable metals criteria, run a Reasonable Potential Analysis (RPA), and convert the resulting criteria into limitations. CAPWTT model entry parameters for all constituents include: no dilution credits, an average hardness of 200 mg/L, and using "Non-Detects." At the lowest detection limit (10 .8) for all ambient background concentrations. The results of the CAPWTT analysis indicate that seven priority pollutants have reasonable potential to cause or contribute to exceed the CTR water quality criteria." These pollutants, and their resulting effluent limitations, are listed in Discharge Specification B.6 of Order No R9-2002-0104 and are as follows in Table 10.

Table 5-4

RCWD's SRWRF Order No. 94-92 Water Quality Objectives

California Toxics Rule (CTR) Effluent Limitations			
Constituent	**Unit**	**Limit**	
		Daily Maximum	**Monthly Average**
Bis (2-Ethylhexyl) Pthalate	µg/L lb/day	3.61 60	1.8 30
Chlorodibromomethane	µg/L lb/day	0.82 0.14	0.41 0.07
Copper	µg/L lb/day	26.9 4.5	13.4 2.2
Cyanide	µg/L lb/day	8.5 1.4	4.3 0.72
Dichlorobromomethane	µg/L lb/day	1.1 0.18	0.56 0.09
Methylene Chloride	µg/L lb/day	9.4 1.57	4.7 0.78
Selenium	µg/L lb/day	7.63 1.27	4.27 0.71

Units: µg/L = micrograms per Liter lb/day = pounds per day

5.7.3 Water Quality-Related Requirements of WDR No. 2000-165

This Order contains no numeric limitation for toxicity. However, the discharger shall conduct chronic toxicity monitoring as specified in Monitoring and Reporting Program (M&RP) No. R8-2004-0065.

Section 6: Regional Recycled Water Market Assessment

The market assessment focuses on the potential recycled water users in the northern/western (N/W) portion of the Regional Sewershed, herein referred to as the Regional service area for the purposes of this study. The TVRWRF, the EMWD Reach 4 pipelines, and the proposed Wildomar recycled water facilities cover the southern/eastern (S/E) portion of the Regional Sewershed. The Regional service area has no existing recycled water distribution facilities. However, review of water uses and land use data for the area suggests that there is potentially a significant demand for recycled water for irrigation of schools, parks, a cemetery, government facilities, and residential and commercial users. Furthermore, recycled water demands should be projected to increase as new residential and commercial developments are completed. The objective of this market assessment is to identify potential recycled water customers and estimate their demand for recycled water within the Regional service area. This section presents the results of the market assessment for the Regional service area, which is to be serviced by the Regional WRF.

6.1 Market Assessment Methodology

The market assessment for the Regional service area utilized water meter records, land use information and identified development plans for the purposes of estimating potential user locations and associated recycled water demands.

The average annual water use by service meter was calculated based on District usage data for calendar years 2001 through 2004 and the first two months of 2005. The meters were sorted by average annual usage. Three (3) AFY was used as the minimum cutoff for consideration as a potential recycled water customer.

In addition, where multiple meters were tied to a single customer, these meter records were combined for the purposes of identifying suitable recycled customers and estimating their potential recycled water demands. This was accomplished by comparing the addresses and Assessor Parcel Numbers of the water meters and the customer billing data base. Combined meters that totaled more than 3 AFY were included in the market assessment.

After identifying potential irrigation users, the cutoff list was reviewed for smaller recycled water customers (those using approximately 2 AFY) to determine if these potential customers were located in close proximity to other larger recycled water users (3+ AFY). Customers of 2 AFY demand were included in the market assessment in those instances where their proximity to larger customers suggested that they could be feasibly served.

Other information that was reviewed to identify potential recycled water customers included:

- Reviewing land use information and proposed developments presented in the following documents:
    - The District's Distribution System Master Plan (MWH, May 2002),
    - Wildomar Service Area Recycled Water Master Plan (Kennedy/Jenks, June 2004), and
    - Wildomar Recycled Water Facilities Planning Report (Kennedy/Jenks, January 2005).

- Reviewing documents on proposed developments for :
  - Ramsgate Water, Wastewater, and Recycled Water Facilities Plan (Hunsaker & Associates, June 2004),
  - La Laguna Estates Development, Zone III Water System Preliminary Design Report, January 2005),
  - John Laing Homes Community Development: Water Supply Assessment Final Report (MWH, October 2003), and
  - Draft technical memorandum on Alberhill's water facilities (Kennedy/Jenks, March 2005).
- Contacting developers about proposed developments and developments currently under construction.
- Soliciting information from the City of Lake Elsinore Planning and Park departments for current/proposed/future developments and proposed/future parks, respectively.
- Performing field reconnaissance of the Regional service area to determine potential customer types and locations.
- Conversing with District staff to discuss potential future recycled water irrigation customer sites.
- Reviewing the Title 22 Engineering Report for the Temescal Division Agricultural System (MWH, August 2002).
- Developing methods and criteria to estimate annual and peak season irrigation demands for existing and future developments in the Lake Elsinore area using the best available information.

From this market assessment, a GIS-based map was produced using a base map of the Lake Elsinore area provided by the County of Riverside. From the GIS analysis, several patterns of irrigation meters emerged, including the following:

- Cluster of potential users in Downtown Lake Elsinore
- Cluster of potential users in the Northwest Lake Elsinore area
- Cluster of potential users in the Northeast Lake Elsinore area
- John Laing Homes' East Lake (discussed in the Wildomar Recycled Water Facilities Planning Report (Kennedy/Jenks, January 2005)
- The Temescal Canyon area (discussed in Title 22 Engineering Report for the Temescal Division Agricultural System, MWH, February 2004 with potential customer list updated in this report at request of the District);
- Canyon Lake (currently served by Railroad Canyon WRF and therefore not addressed in this study);
- Tuscany Hills residential development (included in the Wildomar Recycled Water Facilities Planning Report, Kennedy/Jenks, January 2005, and therefore not addressed in this study);
- Cottonwood Canyon (proposed to be served by Railroad Canyon WRF, and therefore not addressed in this study); and

- The Colony at California Oaks (served by RCWD and therefore not addressed in this study).

Of these areas, the downtown, northwest, and northeast Lake Elsinore areas have the greatest potential for recycled water service from the Regional WRF. The downtown area and service to John Laing Homes Development has potentially overlapping service with the Wildomar recycled water system. However, the District currently envisions serving the downtown area from the Regional WRF and John Laing Homes from the Wildomar Service Area. Section 7 of this report discusses the potential for an inter-tie with the Wildomar recycled water system to provide a backup water source and increase operational flexibility.

Also under consideration is the potential for connecting the recycled water pipeline proposed in this study with the EMWD Reach 4 pipeline that connects to the TVRWRF, for providing a redundancy in supply of recycled water into the overall recycled water system. The Temescal Canyon area is another potential area under consideration. This area could potentially be served through a connection into the existing agricultural Elsinore Pipeline from the Regional WRF. There is a very high demand from the Shea Homes Golf Course and industrial users such as cement and pipe manufacturers (approximately 3,300 AFY) in this area that is currently served by the agricultural line.

6.2 Regional Service Area Recycled Water Markets

Figure 6-1 depicts the locations of the identified recycled water markets following the recycled water market assessment methodology outlined in Section 6.1. Highlighted parcels include known irrigation users, future users, and public property owned by the Lake Elsinore Unified School District, the City of Lake Elsinore, Riverside County, and the State of California. Table 6-1 summarizes the potential recycled water demands for the identified markets. In Table 6-1, “Existing Average Annual Demand” identifies the amount of recycled water each customer could use as of 2005, if the recycled water was available. Section 7 further distinguishes recycled water markets by the timing of their potential demand relative to the phasing plan for the recycled water distribution system.

Both the figure and table identify each potential user by a site user code. For example, all schools start with “S” and then have a numeric value identifying the user or the location of the school. The codes used to categorize the types of users are the following:

- A Agriculture
- C Cemetery
- CH Church
- G Government
- I Industrial/Commercial
- IF Future Industrial/Commercial
- P Park
- R Residential
- RF Future Residential
- S School
- SF Future School

If a user or site has multiple meters or parcels, all parcels are highlighted in Figure 6-1. However, the total demand is shown as a single meter for the user or site.

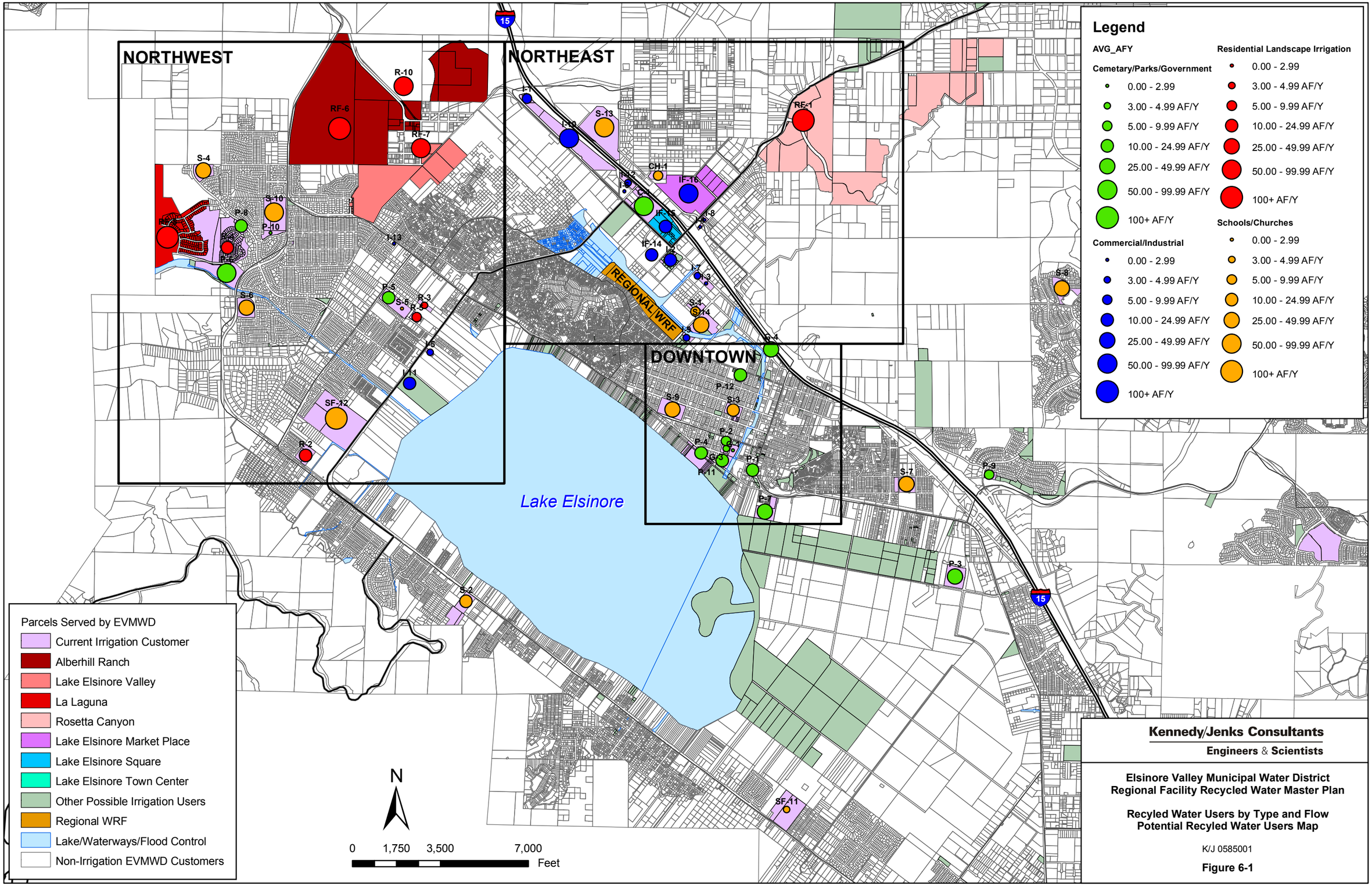

NORTHWEST
NORTHEAST
DOWNTOWN
Lake Elsinore
REGIONAL WRF
15
Legend
AVG_AFY
Cemetary/Parks/Government
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Commercial/Industrial
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Residential Landscape Irrigation
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Schools/Churches
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Parcels Served by EVMWD
Current Irrigation Customer
Alberhill Ranch
Lake Elsinore Valley
La Laguna
Rosetta Canyon
Lake Elsinore Market Place
Lake Elsinore Square
Lake Elsinore Town Center
Other Possible Irrigation Users
Regional WRF
Lake/Waterways/Flood Control
Non-Irrigation EVMWD Customers
N
0 1,750 3,500 7,000
Feet
Kennedy/Jenks Consultants
Engineers & Scientists
Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan
Recyled Water Users by Type and Flow
Potential Recyled Water Users Map
K/J 0585001
Figure 6-1

Table 6-1
Regional Service Area Potential Recycled Water Markets

Site Code	Name	Address	Existing Average Annual Demand (AFY) [a]	Future Average Annual Demand (AFY)	Subarea
C-1	Elsinore Valley Cemetery	18170 Collier Avenue	67	67	Northeast
CH-1	Latter Day Saints Church	18220 Dexter Avenue	8	8	Northeast
G-1	Sheriff Station County of Riverside	334 Limited Street	3	3	Downtown
G-2	Riverside County Fire	29405 Grand Avenue	6	6	Northwest
G-3	Riverside County Building	117 S Langstaff Street	3	3	Downtown
G-4	CalTrans District 8	516 Main Street	43	43	Downtown
I-1	ARCO AM/PM	19930 Collier Avenue	8	8	Northeast
I-10	Lake Elsinore Outlets	17600 Collier Avenue	57	57	Northeast
I-11	Pyramid Enterprises	32040 Riverside Drive	16	16	Northwest
I-12	Secured Self Storage	29135 Riverside Drive	4	4	Northeast
I-13	Star Plaza Business	16331 Lakeshore Drive	2	2	Northwest
I-2	Central Business Park	570 Central Avenue	13	13	Northeast
I-3	D and D Cattle Co	18501 Collier Avenue	2	2	Northeast
I-4	Douglas Burgers	18461 Collier Avenue	2	2	Northeast
I-5	Jack in the Box	31650 Riverside Drive	4	4	Northwest
I-6	Lake Elsinore Self Storage	29151 Riverside Drive	3	3	Northeast
I-7	Mercury Marking Devices	600 3rd Street	3	3	Northeast
I-8	Mobil Oil Co	19300 Central Avenue	3	3	Northeast
I-9	Near-Cal Corp	512 Chaney Street	4	4	Northeast
IF-14	Lake Elsinore Town Center Development	Central Avenue & Collier Avenue	8 [b]	17 [c]	Northeast
IF-15	Lake Elsinore Square Development	Central Avenue & Collier Avenue	8 [b]	21 [c]	Northeast
IF-16	Lake Elsinore Market Place Development	Central Avenue & Dexter Avenue	35 [b]	68 [c]	Northeast
P-1	City Park	243 S. Main Street	11	11	Downtown
P-10	Summer Lake Park	900 Broadway Street	0 [c]	0	Northwest
P-11	Swick & Matich Park	402 Limited Street	13	13	Downtown
P-12	Yarborough Park	419 N. Poe Street	12	12	Downtown
P-2	Lake Community Center	310 W Graham Avenue	10	10	Downtown
P-4	Elk Grove Park & Beach	Lakeshore Drive	15	15	Downtown
P-5	Machado School Park	15150 Joy Street	14	14	Northwest
P-6	McVicker Canyon Park	29355 Grand Avenue	52	52	Northwest

Table 6-1
(Continued)

Site Code	Name	Address	Existing Average Annual Demand (AFY) [a]	Future Average Annual Demand (AFY)	Subarea
P-7	Lakepoint Park	420 E. Lakeshore Drive	34	34	Downtown
P-8	Oak Tree Park	Lincoln Street	13	13	Northwest
R-2	Harbor Grand Apts	15120 Grand Avenue	14	14	Northwest
R-3	Lake Country Villas	617 Walnut Drive	4	4	Northwest
R-4	Shore Pointe Complex	Sunswept Drive & Lincoln Street	15	15	Northwest
R-5	Walnut Grove Apts	16460 Joy Street	6	6	Northwest
RF-1	Rosetta Canyon Development	Hwy 74 & Ramsgate Drive	100 [b]	309 [c]	Northeast
RF-10	Alberhill Community Plan		0	192	Northwest
RF-6	Alberhill Ranch Development	Lake Street & Coal Road	100 [b]	101 - 478 [e]	Northwest
RF-7	Lake Elsinore Valley Development	Nichols Road	40 [b]	66 [e]	Northwest
RF-8	La Laguna Development		50 [b]	142 [e]	Northwest
RF-9	JLH East Lake (Optional User)	Diamond Cir & Malaga Rd	200 [b]	1,220	Downtown
S-1	LEUSD Office	545 Chaney Street	6	6	Northeast
S-10	Terra Cotta Middle School	29291 Lake Street	96	96	Northwest
S-13	Temescal Canyon High	28755 El Toro Road	88	88	Northeast
S-14	Ortega Continuation High	520 Chaney Street	27	27	Northeast
S-3	Elsinore Elementary	501 W Sumner Avenue	17	17	Downtown
S-4	Rice Canyon Elementary	29535 Westwind Drive	31	31	Northwest
S-5	Machado Elementary	15150 Joy Street	0 [d]	0	Northwest
S-6	Withrow Elementary	30100 Audelo Street	38	38	Northwest
S-9	Elsinore Middle	1203 W. Graham Avenue	45	45	Downtown
SF-12	Lakeside High School	32693 Riverside Drive	60 [b]	120 [e]	Northwest
Downtown Area Subtotal			206	206	
Northwest Area Subtotal			561	1,309	
Northeast Area Subtotal			446	710	
Service to John Laing Homes (optional)			200	1,120	
Regional Service Area Total (w/o JLH)			1,213	2,225	
Regional Service Area Total (w/ JLH)			1,413	3,345	

The customers of special interest in this area are the existing water accounts that have separate meters or other onsite facilities for potable and irrigation uses, since they may be the easiest and most cost effective customers to convert from existing irrigation to recycled water irrigation. These accounts are zoned for landscape irrigation, agricultural, industrial, schools, or cemetery district. Detailed discussion of these users and of existing and future users is presented in the following sections.

As summarized in Table 6-1, the Regional service area has a potential recycled water demand of approximately 2,225 AFY. Service to the Wildomar system and John Laing Homes Development could utilize an additional 1,120 AFY of recycled water from the Regional WRF. However, service to the Wildomar system is expected to be intermittent, and would not include serving John Laing Homes' peak seasonal demands from the Regional system.

An additional of 3,300 AFY demand exists further north in the Temescal Canyon vicinity, which could be supplied by a connection into the agricultural Elsinore Pipeline from either the Regional WRF or the new wastewater treatment plant planned for the Alberhill area. Potential future use for recycled water is also identified, primarily in the Alberhill area or along the west side of Lake Elsinore.

Further description of the Regional recycled water service area and potential markets is provided in the following section which divides the service area into 3 zones: downtown zone, northwest zone, and northeast zone:

- The downtown zone is located south of the Regional WRF in the historic downtown area and has an estimated recycled water demand of 206 AFY. This area was previously identified in the Wildomar Recycled Water Master Plan (RWMP), but due to its proximity is more efficiently served by the Regional WRF. Included in this area are several parks and the Elsinore Middle School. Another option would be to supply the John Laing Homes East Lake Development from the Regional recycled water system. The projected recycled water use for that development is another 1,220 AFY for this zone.

- A northwest zone would include the newly constructed Lakeside High School, Terra Cotta Middle School, and McVicker Canyon Park. The estimated total annual recycled water demand for this area is 1,309 AFY.

- A northeast zone includes the Rosetta Canyon development, three new shopping centers, Temescal Canyon High School, and the outlet mall along the west side of the Interstate 15 Freeway. The estimated total average annual recycled water demand for this area is 710 AFY.

6.2.1 Downtown Zone

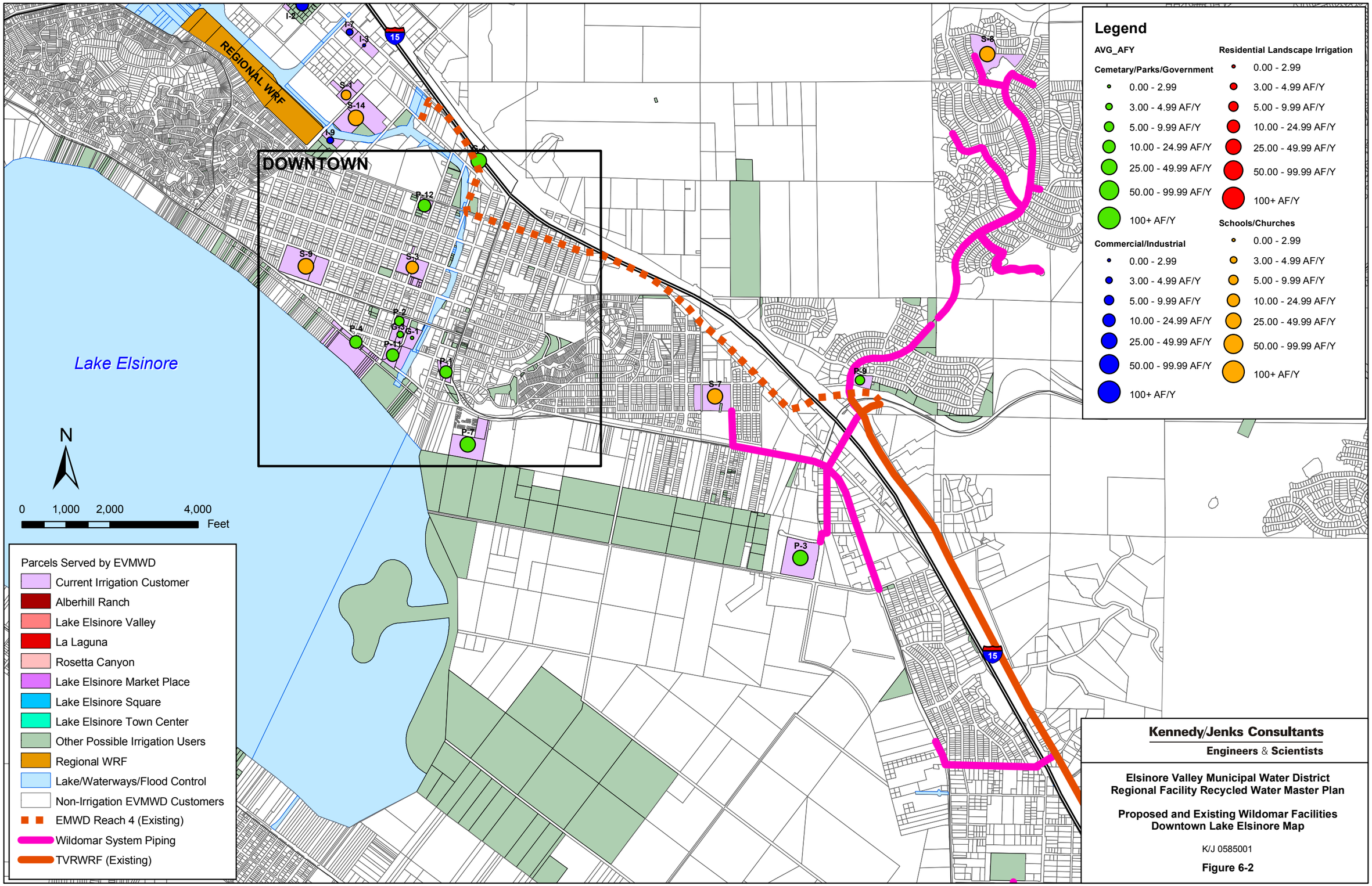
Customers in the downtown zone are shown on Figure 6-2 and listed in Table 6-2 and include parks, schools, and government entities and are located in Downtown Lake Elsinore. These customers currently use 206 AFY for irrigation, and the one major development planned for this zone is the John Laing Homes East Lake Development. Some of these potential customers were identified in the Wildomar Recycled Water Master Plan and were proposed to be connected in Phase 2 of that system. Figure 6-2 shows the proposed Wildomar facilities in the

downtown zone. Due to the close proximity of the customers to the Regional WRF, it appears more efficient to supply these downtown zone users from the Regional system.

Table 6-2
Irrigation Users in the Downtown Zone

Site Code	Name	Address	Existing Avg. Annual Irr. Demand [(a)] (AFY)	Future Avg. Annual Irr. Demand (AFY)	Distance from Regional WRF (miles)
RF-9	JLH East Lake (Optional User)	Diamond Cir & Malaga Rd	200 [(b)]	1,120	4.5
S-9	Elsinore Middle	1203 W. Graham Avenue	45	45	0.8
G-4	CalTrans District 8	516 Main Street	43	43	1.5
P-7	Lakepoint Park	420 E. Lakeshore Drive	34	34	2.0
S-3	Elsinore Elementary	501 W Sumner Avenue	17	17	1.0
P-4	Elk Grove Park & Beach	Lakeshore Drive	15	15	1.0
P-11	Swick & Matich Park	402 Limited Street	13	13	1.3
P-12	Yarborough Park	419 N. Poe Street	12	12	0.9
P-1	City Park	243 S. Main Street	11	11	1.7
P-2	Lake Community Center	310 W Graham Avenue	10	10	1.4
G-3	Riverside County Building	117 S Langstaff Street	3	3	1.3
G-1	Sheriff Station County of Riverside	334 Limited Street	3	3	1.4
TOTAL POTENTIAL DEMAND WITHOUT RF-9 (JLH):			206	206	
TOTAL POTENTIAL DEMAND WITH RF-9 (JLH):			406	1,326	

(a) Based on meter record data from January 2001 through February 2005.
(b) Existing demand is for construction water.



Kennedy/Jenks Consultants
Engineers & Scientists

Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan

Proposed and Existing Wildomar Facilities
Downtown Lake Elsinore Map

K/J 0585001

Figure 6-2

6.2.2 Northwest Zone

The northwest zone is bounded by Lakeshore Drive, Riverside Drive, and Grand Avenue, as shown on Figure 6-3. The irrigation customers and estimated demands in the northwest zone are listed in Table 6-3. The total potential annual demand for this area is approximately 1,309 AFY. Major customers include Terra Cotta Middle School, McVicker Canyon Park, and the Lakeside High School. Lakeside High School is currently using 67 AFY for irrigation during the construction of the school. The built-out annual usage is anticipated to be more than 100 AFY, which is higher than Temescal Canyon High School or Terra Cotta Middle School based on the planned open and field space.

Three residential developments are planned for this zone: Alberhill Ranch, Lake Elsinore Valley, and La Laguna. Although other developments are in the planning stages in the Alberhill/Horsethief area, these developments are outside the Regional study area. The Alberhill Ranch development could be supplied with recycled water by either the Regional WRF or the new WWTP planned for that area.

The Alberhill Ranch development, north of Lake Elsinore calls for a 33 acre park and a 10 acre school site. The developer did not have figures for medians, parkway, and slopes, but such features are common in new developments in Lake Elsinore. As such, the irrigation use by the park and school represent the minimum expected recycled water demand for Alberhill Ranch. A study for the Alberhill area developments (Kennedy/Jenks, October 2003) determined a demand of 478 AFY for the Alberhill Ranch development. This value will be used as a maximum demand.

The La Laguna development, as designed by Albert A. Webb Associates, has 29 acres of engineered slopes. Based on irrigation values given in the District's 2002 Master Plan, Webb Associates used an irrigation value of 3,600 gpd per acre, which is at the high end of the irrigation values, and a peaking factor of 20% to account for summer months. Based on 3,600 gpd per acre, the designer anticipates an irrigation demand of 142 AFY at build-out for the slopes, medians, and parkways.

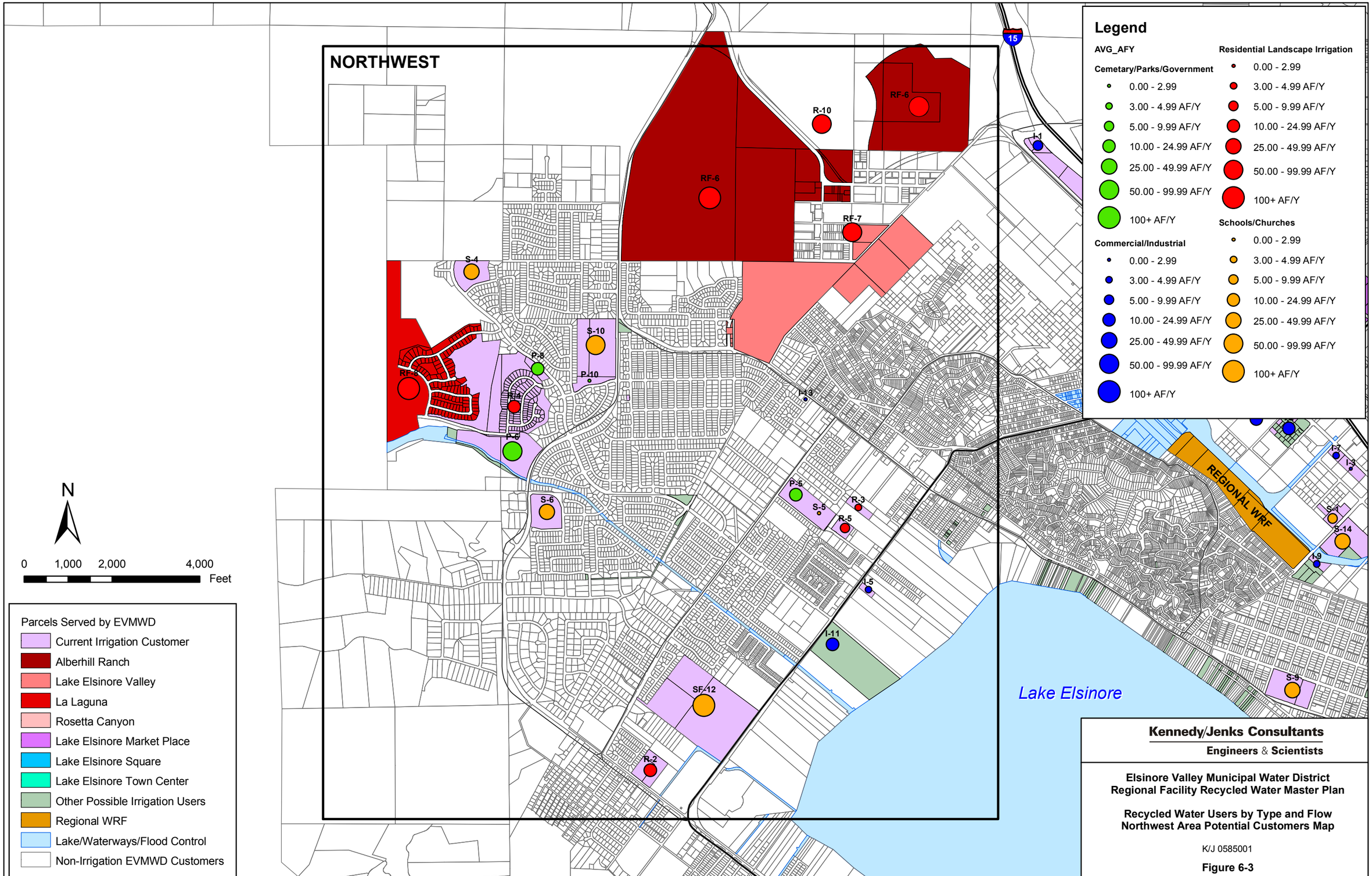
The District recently performed a CFD study for the Alberhill area including the Lake Elsinore Valley development. In the study, Lake Elsinore Valley is listed as having 29 acres of engineered slopes. The irrigation demand is given as 2,000 gpd per acre based on the aforementioned Master Plan's recommendations. This results in an anticipated irrigation demand of 66 AFY for Lake Elsinore Valley.

Although there are several other developments in various stages of design, planning, or proposal in the Alberhill area, the aforementioned three and Rosetta Canyon (see Section 6.2.3) are the only ones that fall within the Regional study area. All other developments in the Alberhill area fall within the Alberhill/Horsethief service area.

Table 6-3
Irrigation Customers in the Northwest Zone

Site Code	Name	Address	Average Annual Irrigation Demand [a] (AFY)	Future Avg. Annual Irr. Demand (AFY)	Distance from Regional WRF (miles)
RF-6	Alberhill Ranch Development	Lake Street & Coal Road	100 [b]	478 [e]	3.3
RF-10	Alberhill Community Plan		0	192	3.4
RF-8	La Laguna Development		50 [b]	142 [e]	4.1
SF-12	Lakeside High School	32693 Riverside Drive	60 [b]	120 [e]	4.3
S-10	Terra Cotta Middle School	29291 Lake Street	96	96	3.6
RF-7	Lake Elsinore Valley Development	Nichols Road	40 [b]	66 [e]	3.3
P-6	McVicker Canyon Park	29355 Grand Avenue	52	52	3.8
S-6	Withrow Elementary	30100 Audelo Street	38	38	4.6
S-4	Rice Canyon Elementary	29535 Westwind Drive	31	31	4.8
I-11	Pyramid Enterprises	32040 Riverside Drive	16	16	2.7
R-4	Shore Pointe Complex	Sunswept Drive & Lincoln Street	15	15	4.1
P-5	Machado School Park	15150 Joy Street	14	14	3.8
R-2	Harbor Grand Apts	15120 Grand Avenue	14	14	4.1
P-8	Oak Tree Park	Lincoln Street	13	13	4.1
G-2	Riverside County Fire	29405 Grand Avenue	6	6	4.4
R-5	Walnut Grove Apts	16460 Joy Street	6	6	2.4
I-5	Jack in the Box	31650 Riverside Drive	4	4	2.4
R-3	Lake Country Villas	617 Walnut Drive	4	4	2.2
I-13	Star Plaza Business	16331 Lakeshore Drive	2	2	2.6
P-10	Summer Lake Park	900 Broadway Street	0 [c]	0	3.9
S-5	Machado Elementary	15150 Joy Street	0 [d]	0	3.8
TOTAL POTENTIAL DEMAND:			561	1,309	

(a) From January 2001 through February 2005
(b) Construction demand
(c) Shares fields with School District's Terra Cotta Middle School
(d) Shares fields with City's Machado School Park
(e) Anticipated demand



Kennedy/Jenks Consultants

Engineers & Scientists

Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan

Recycled Water Users by Type and Flow
Northwest Area Potential Customers Map

K/J 0585001

Figure 6-3

6.2.3 Northeast Zone

Potential recycled water customers of the northeast zone are shown in Figure 6-4 and listed with estimated demands in Table 6-4 and include Temescal Canyon High School and the Lake Elsinore Outlets. The District's Regional WRF and offices are currently using recycled water for irrigation and treatment applications. This zone is split by the Interstate 15 Freeway. Future additions to the northeast zone include three commercial developments expected to open in 2006: Lake Elsinore Square (Square), Lake Elsinore Town Center (Town Center), and Lake Elsinore Market Place (Market Place); and one residential development, Rosetta Canyon, which is currently under construction. Based on studies and calculations, the northeast zone will have the highest growth demand for recycled water from its current usage of 446 AFY to an anticipated usage of 710 AFY by 2009.

The three commercial developments are under construction near the junction between Interstate-15 and State Highway 74 (Ortega Highway). These are the 68 acre Market Place, the 21 acre Square, and the 17 acre Town Center. The latter's developer has stated there will be landscaping, so it is assumed that these commercial sites will require landscape irrigation similar to that of the 43 acre Lake Elsinore Outlets and the 46 acre Lake Elsinore City Center. The former uses 1.33 AFY per acre of property, while the latter uses 0.67 AFY per acre. Applying these values, the Market Place is expected to use an estimated 46 to 90 AFY for irrigation, the Square is expected to use an estimated 14 to 28 AFY, and the Town Center is anticipated to use an estimated 11 to 23 AFY.

The Rosetta Canyon development (formerly called Ramsgate) calls for 20 acres of irrigated turf at a 33 acre park site, 6 acres of irrigated turf at a site reserved for a school, and 93 acres of slopes, parkway, and medians. Using a duty factor of 13 gpm/acre over a 10-hour irrigation window, Borthwick Guy Bettenhausen, the firm which modeled recycled water demands for Rosetta Canyon, calculated the recycled water PDD at ultimate build-out to be 2.2 MGD, which equates to an average annual demand of 309 AFY. The peak flow is expected to occur in 2009. This peak figure is lower than the original peak flow calculation of 1,284 gpm. The original figure was based on 20 gpm/acre usage over a 6 hour per day, 6 day per week watering period. Centex is using approximately 100 AFY for current construction of Rosetta Canyon.

If the School District does not purchase the site reserved for a school, then the land will be subdivided into additional lots. That would reduce irrigation demand by approximately 40 AFY, which is the irrigation use of an average elementary school.

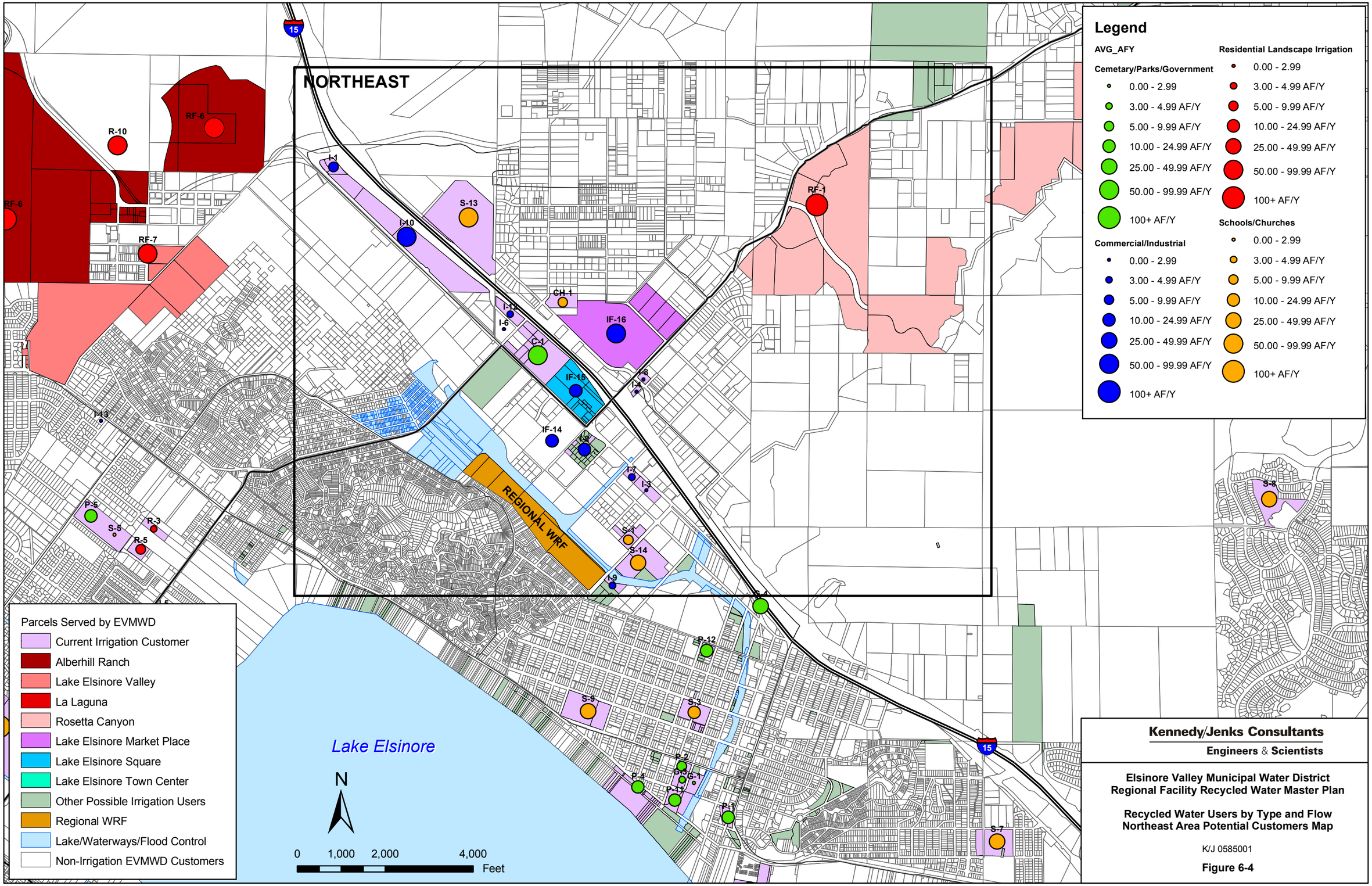

NORTHEAST
Legend
AVG_AFY
Cemetary/Parks/Government
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Commercial/Industrial
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Residential Landscape Irrigation
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Schools/Churches
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Parcels Served by EVMWD
Current Irrigation Customer
Alberhill Ranch
Lake Elsinore Valley
La Laguna
Rosetta Canyon
Lake Elsinore Market Place
Lake Elsinore Square
Lake Elsinore Town Center
Other Possible Irrigation Users
Regional WRF
Lake/Waterways/Flood Control
Non-Irrigation EVMWD Customers
Lake Elsinore
N
0 1,000 2,000 4,000
Feet
REGIONAL WRF
15
R-10
RF-6
RF-7
I-1
I-10
S-13
CH-4
I-12
I-6
IF-16
C-1
IF-15
I-8
I-2
IF-14
I-7
I-3
S-1
S-14
I-9
RF-1
I-13
P-5
S-5
R-3
R-5
S-8
P-12
S-9
S-3
P-2
G-3
G-1
P-4
P-11
P-1
S-7
Kennedy/Jenks Consultants
Engineers & Scientists
Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan
Recycled Water Users by Type and Flow
Northeast Area Potential Customers Map
K/J 0585001
Figure 6-4

Table 6-4
Irrigation Customers in the Northeast Zone

Site Code	Name	Address	Average Annual Irrigation Demand [a] (AFY)	Future Avg. Annual Irr. Demand (AFY)	Distance from Regional WRF (miles)
RF-1	Rosetta Canyon Development	Hwy 74 & Ramsgate Drive	100 [b]	309 [c]	2.4
S-13	Temescal Canyon High	28755 El Toro Road	88	88	2.3
IF-16	Lake Elsinore Market Place Development	Central Avenue & Dexter Avenue	35 [b]	68 [c]	1.4
C-1	Elsinore Valley Cemetery	18170 Collier Avenue	67	67	1.3
I-10	Lake Elsinore Outlets	17600 Collier Avenue	57	57	2.2
S-14	Ortega Continuation High	520 Chaney Street	27	27	0.1
IF-15	Lake Elsinore Square Development	Central Avenue & Collier Avenue	8 [b]	21 [c]	1.1
IF-14	Lake Elsinore Town Center Development	Central Avenue & Collier Avenue	8 [b]	17 [c]	1.1
I-2	Central Business Park	570 Central Avenue	13	13	1.3
CH-1	Latter Day Saints Church	18220 Dexter Avenue	8	8	1.8
I-1	ARCO AM/PM	19930 Collier Avenue	8	8	2.4
S-1	LEUSD Office	545 Chaney Street	6	6	0.2
I-9	Near-Cal Corp	512 Chaney Street	4	4	0.1
I-12	Secured Self Storage	29135 Riverside Drive	4	4	1.7
I-7	Mercury Marking Devices	600 3rd Street	3	3	0.8
I-6	Lake Elsinore Self Storage	29151 Riverside Drive	3	3	1.7
I-8	Mobil Oil Co	19300 Central Avenue	3	3	1.4
I-4	Douglas Burgers	18461 Collier Avenue	2	2	0.8
I-3	D and D Cattle Co	18501 Collier Avenue	2	2	0.8
TOTAL POTENTIAL DEMAND:			446	710	

(a) From January 2001 through February 2005
(b) Construction demand
(c) Anticipated demand

6.3 Users Sorted by Type

This section discusses the types of recycled water users expected within the Regional service area, including: parks, schools, and the anticipated top 10 users.

6.3.1 Irrigation Use for Parks

All parks in Lake Elsinore are operated by the City of Lake Elsinore Parks Department. Several parks are located within the study area and are listed along with their irrigation demands in Table 6-5. The Parks Department has stated that no new stand-alone parks will be built in the Regional service area. Instead, parks will be a component of new developments. The Alberhill and Rosetta Canyon developments will both have 33 acre parks. The City's Summer Lake Park shares athletic fields with the School District's Terra Cotta Middle School (listed under schools); therefore, the irrigation usage is included as part of the school's demand.

Table 6-5
Parks within the Regional Service Area

Site Code	Park Name	Park Address	Average Annual Irrigation Demand [(a)] (AFY)	Distance from Regional WRF (miles)
P-6	McVicker Canyon Park	29355 Grand Avenue	52	3.8 N
P-7	Lakepoint Park	420 E. Lakeshore Drive	34	2.0 S
P-5	Machado School Park	15150 Joy Street	14	3.8 N
P-4	Elk Grove Park & Public Beach	Lakeshore Drive	14	1.2 S
P-8	Oak Tree Park	Lincoln Street	13	4.1 N
P-11	Swick & Matich Park	402 Limited Street	13	1.3 S
P-12	Yarborough Park	419 N. Poe Street	12	0.9 S
P-1	City Park	243 S. Main Street	11	1.7 S
P-2	Lake Community Center	310 W Graham Avenue	10	1.4 S
P-10	Summer Lake Park	900 W. Broadway Street	0[(b)]	3.9 N
TOTAL POTENTIAL DEMAND:			**220**	

(a) From January 2001 through February 2005
(b) Shares fields with Terra Cotta Middle School

6.3.2 Irrigation Use by Schools

The open field spaces at school facilities are the largest irrigation water users in the Lake Elsinore area. The Alberhill and Rosetta Canyon developments have reserved land for schools (current sizing appears to be for elementary schools); however the School District has no current plans for a school at either site. The School District does plan to open Lakeside High School in August 2005. The school is already using 67 AFY for irrigation and construction purposes, but this is expected to increase once the fields are seeded. The School District will also be opening Ronald Reagan Elementary and Lakeland Village Middle in 2005. According to

the Wildomar Master Plan (Kennedy/Jenks, June 2004), the Ronald Reagan Elementary School is to be served by an extension of a service lateral from the TVRWRF pipeline, and the Lakeland Village Middle School is planned for ultimate service by the TVRWRF.

Table 6-6 lists the schools and their irrigation demands within the study area. As the Machado Elementary School shares athletic fields with the City's Machado School Park (listed under parks), the irrigation demands are included with the proposed park in Table 6-5.

Table 6-6
Schools in Northern Lake Elsinore Area

Site Code	School Name	School Address	Average Annual Irrigation Demand [(a)] (AFY)	Distance from Regional WRF (miles)
SF-12	Lakeside High	32693 Riverside Drive	120 [(b)]	4.3 N
S-10	Terra Cotta Middle	29291 Lake Street	96	3.6 N
S-13	Temescal Canyon High	28755 El Toro Road	88	2.3 N
S-9	Elsinore Middle	1203 W. Graham Avenue	45	0.8 S
S-6	Withrow Elementary	30100 Audelo Street	38	4.6 N
S-4	Rice Canyon Elementary	29535 Westwind Drive	31	4.8 N
S-14	Ortega Continuation High	520 Chaney Street	27	0.1
S-3	Elsinore Elementary	501 W Sumner Avenue	17	1.0 S
S-2	Butterfield Elementary	16275 Grand Avenue	15	6.2
S-1	LEUSD Office	545 Chaney Street	6	0.2
S-5	Machado Elementary	15150 Joy Street	0 [(c)]	3.8 N
TOTAL POTENTIAL DEMAND:			**473**	

(a) From January 2001 through February 2005
(b) Anticipated demand
(c) Recycled water demand included with Machado School Park

6.3.3 Top Ten Recycled Water Users in the Regional Service Area

Although much of the current irrigation water use is by the School District and the City, there are other users such as the John Laing Homes, Riverside County, CalTrans, the Elsinore Valley Cemetery, a Latter Day Saints Church, as well as residential, commercial, and industrial customers. Sizable residential landscape irrigation users include the Harbor Grand and Walnut Grove apartment complexes. The 110 lot Shore Pointe development is using approximately 15 AFY for irrigation of common areas. Other than the John Laing Homes, there are currently no

large residential irrigation users on the scale of the Tuscany Hills in the study area; however four developments including the large Rosetta Canyon subdivision are either under construction or in the planning stages.

The ten largest users in the Regional service area are listed in Table 6-7 and have an estimated demand of 1,249 AFY. This list does not include the potential recycled use of 1,220 AFY for the John Laing Homes East Lake Development.

Table 6-7
Ten Largest Irrigation Users

Site Code	Name	Address	Average Annual Irrigation Demand [(a)] (AFY)	Zone
RF-1	Rosetta Canyon Subdivision	Hwy 74 & Ramsgate Drive	309 [(b)]	NE
RF-10	Alberhill Community Plan	–-	192	NW
RF-8	La Laguna Development	–-	142 [(b)]	NW
SF-12	Lakeside High School	32693 Riverside Drive	120 [(b)]	NW
RF-6	Alberhill Ranch Development	–-	101 [(b)]	NW
S-10	Terra Cotta Middle School	29291 Lake Street	96	NW
S-13	Temescal Canyon High	28755 El Toro Road	88	NE
IF-16	Lake Elsinore Market Place	Central Avenue & Dexter Avenue	68 [(b)]	NE
C-1	Elsinore Valley Cemetery	18170 Collier Avenue	67	NE
RF-7	Lake Elsinore Valley Development	–-	66 [(b)]	NW
TOTAL POTENTIAL DEMAND:			**1,249**	

(a) Based on data collected from January 2001 through February 2005
(b) Anticipated demand

6.4 Temescal Canyon Area

Through a review of the water meter records and the Title 22 Report for the Temescal Division Agricultural System, potential recycled water users were also identified for this area and are shown on Figure 6-5. Potentially, this area could use approximately 3,300 AFY of recycled water. Currently, the majority of this is being supplied agricultural quality water through the Elsinore Pipeline. The Elsinore Line currently receives water from three sources that consist of the following:

- Surface water runoff and Regional WRF effluent flowing in the Temescal Wash, which gravity feeds into the Elsinore Line via the Holman Weir,
- Thirteen agricultural groundwater supply wells, and
- Three domestic groundwater supply wells, which are each separated from the non-potable line by an air gap.

The agricultural wells produced between 4,000 and 5,000 AFY in 2003, primarily supplying water for citrus and avocado farming, golf courses, and industrial uses as listed in Table 6-8.

Providing recycled water service to the Temescal Canyon Agricultural Line will require further consideration of Title 22 requirements including: recycled water pipeline conversion, assurance of proper gap separation from potable water, and removal of hose bibs currently connected to the agricultural line. This will require a separate study and evaluation not within the scope of this Regional study. Therefore, the infrastructure requirements to provide supply of recycled water to these customers are not further considered as part of this study.

6.5 Recycled Water Use for Lake Elsinore

Another supply opportunity for the Regional WRF is to supply recycled water to Lake Elsinore itself as a part of a lake level restoration project. Due to the local geography of the area, Lake Elsinore is the natural low point for the San Jacinto River watershed. Rarely does water flow out of Lake Elsinore into the Temescal Wash and ultimately into the Santa Ana River. However, the area is arid and Lake Elsinore experiences an average evaporation rate of 56 inches per year. Therefore, due to evaporation, the lake tends to accumulate salts and experience low water levels. In addition, due to impacts from historical environmental runoff, Lake Elsinore has been listed on the RWQCB's 303(d) list for several constituents: namely bacteria, organic enrichment, oxygen depletion, and nutrients.

One of the potential solutions proposed for restoration of Lake Elsinore is to maintain a healthy lake level by pumping treated effluent from the Regional WRF. The District has been participating in a pilot study under a RWQCB program by pumping 1 to 2 MGD into the lake. Based on the District's new NPDES permit, they anticipate potentially discharging an average of 5.3 MGD (5,900 AFY) of recycled water into Lake Elsinore directly in order to maintain healthy lake levels. The District is currently constructing treatment facilities to provide additional phosphorus removal to meet permit and TMDL requirements for discharge to Lake Elsinore.

6.6 Market Assessment Conclusion

Based on the results of the market assessment, there is a potential to provide recycled water to the following locations:

- Serving irrigation customers in the downtown, northeast, and northwest areas of the City at a total demand of 2,225 AFY,
- Providing an inter-tie with the Wildomar system to provide up to 1,120 AFY for service to John Laing Homes.
- Delivering recycled water to the Temescal Canyon area up to approximately 3,300 AFY, although this will require additional study and evaluation beyond the scope of this study.

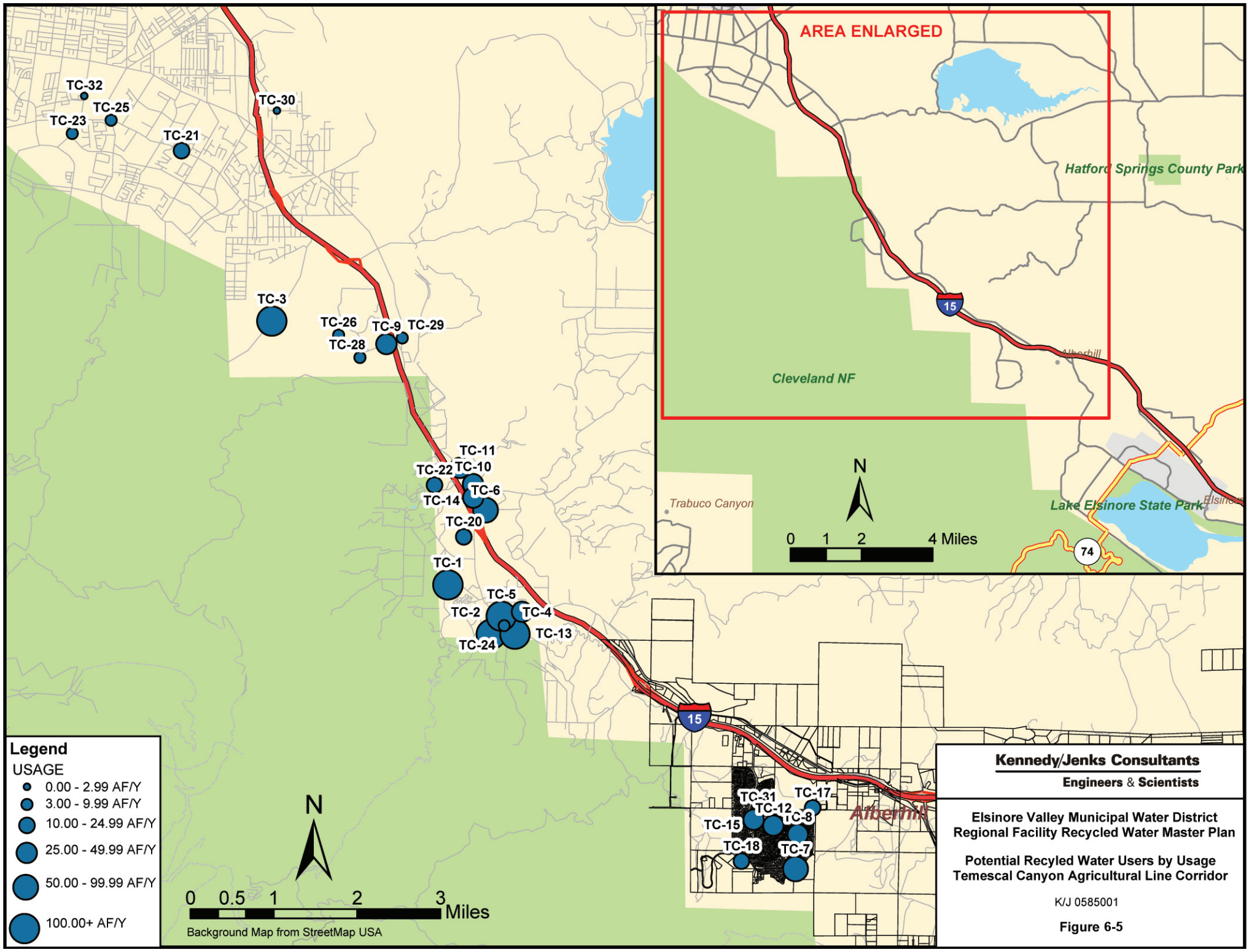

AREA ENLARGED
Hatford Springs County Park
Cleveland NF
Trabuco Canyon
Lake Elsinore State Park
Elsinore
Alberhill
15
74
N
0 1 2 4 Miles
TC-32
TC-25
TC-23
TC-21
TC-30
TC-3
TC-26
TC-9
TC-29
TC-28
TC-11
TC-22
TC-10
TC-6
TC-14
TC-20
TC-1
TC-5
TC-2
TC-4
TC-13
TC-24
TC-31
TC-17
TC-12
TC-8
TC-15
TC-18
TC-7
Legend
USAGE
0.00 - 2.99 AF/Y
3.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100.00+ AF/Y
N
0 0.5 1 2 3 Miles
Background Map from StreetMap USA
Kennedy/Jenks Consultants
Engineers & Scientists
Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan
Potential Recyled Water Users by Usage
Temescal Canyon Agricultural Line Corridor
K/J 0585001
Figure 6-5

Table 6-8
Irrigation Customers along Temescal Agricultural Line by Usage

Site Code	Name	Address	Average Annual Irrigation Demand [a] (AFY)	Number of Meters
TC-1	Shea Homes Golf Course	24120 Warm Springs Road	772	2
TC-2	Werner Corporation	25050 Maitri Road	633	4
TC-3	McMillan Farm Management	Bedford Canyon Road	623	1
TC-4	Cemex USA	24980 Maitri Road	565	3
TC-5	Chandlers Sand and Gravel	24867 Maitri Road	191	1
TC-6	Western Waste Industries	23000 Temescal Canyon Road	59	1
TC-7	William Lyon Homes	27651 Kachina Court	55	6
TC-8	Horsethief Canyon Ranch Maintenance Corp [b]	27260 Mountain Court	48	2
TC-9	Kenneth Holt	8020 Weirick Road	45	1
TC-10	Corona Clay Company	22990 Temescal Canyon Road	39	4
TC-11	Rinker/Hydro Conduit Corp	23200 Temescal Canyon Road	34	1
TC-12	Luiseno Elementary School	13500 Mountain Road	33	2
TC-13	CMS/Butterfield	24583 Wrangler Way	32	4
TC-14	Synagro Composting Company	22980 Temescal Canyon Road	30	1
TC-15	Horsethief HOA [b]	273 Horsethief Canyon Road	28	5
TC-16	Herbert Okada [c]		27	1
TC-17	Horsethief Canyon Ranch [b]	27037 Bolo Court	21	6
TC-18	Horsethief Canyon Ranch HOA [b]	13289 Mountain Road	14	1
TC-19	Lionel Rentschler [c]		14	1
TC-20	Toms Farm	23900 Temescal Canyon Road	12	1
TC-21	Stan Erickson	Chase & Thacker	11	1
TC-22	California Meadows HOA	9250 Palm Canyon Drive	11	2
TC-23	Joseph Santoro	2895 S Main Street	9	1
TC-24	C. L. Pharris	24980 Maitri Road	8	1
TC-25	Douglas Jameson	2850 Garretson at Chase	5	1
TC-26	Lonney Dunbar	7860 Weirick Road	4	1
TC-27	Templo Nueva Cida Inc. [c]	Lateral 204 W S6	4	1
TC-28	Brien Clingman	7810 Weirick Road	4	1
TC-29	Gerald Deleo	21550 Temescal Canyon Road	3	1
TC-30	Ernesto D. Gyurec	7330 Smerber Road	3	1
TC-31	Robert Sanchez	13554 Bucking Bay Drive	3	1
TC-32	Emad Abdallah	2641 Main Street	2	1
TOTAL POTENTIAL DEMAND:			**3,342**	

(a) From January 2001 through February 2005
(b) If one entity, then combined usage is 111.41 AFY, which is the 6th highest usage
(c) Address cannot be displayed in Figure 6-5

- Discharging recycled water into Lake Elsinore as part of the District's lake replenishment program. Lake replenishment demands are anticipated to range from:
    - 0 AFY during wet years (when the Lake is spilling to Temescal Wash),
    - 5,900 AFY during average years
    - 10,300 AFY during dry years

Considering average annual water deliveries for lake replenishment, these potential recycled water demands total 12,575 AFY. However, when seasonal demand variations are considered, the potential recycled water demands of these markets will exceed the recycled water supply availability from the Regional WRF's, which is estimated to be 14,200 AFY in 2025. Further consideration of the recycled water markets is provided as part of the system evaluations presented in Section 7.

Section 7: Project Alternative Analysis

7.1 Planning Assumptions and Design Criteria

The development and analysis of the recycled water project alternatives are based on a set of planning assumptions and design criteria upon which the facilities and alternative are evaluated. Section 7.1 presents the peaking factors; the pipeline, reservoir and pumping station design criteria; and the unit cost data used for the purposes of this facilities planning report.

7.1.1 Peaking Factors

Peaking factors for maximum month, maximum day, and peak hour conditions are established for the purposes of sizing pump station, storage and distribution system facilities.

Maximum month peaking factors have been established based on review of 30 years of precipitation and evapotranspiration (ET) data. Table 7-1 provides a summary of average monthly precipitation, ET, and resultant irrigation requirements.

Table 7-1
30-Year Average Precipitation and ET vs. Irrigation Requirement

Month	Average Precipitation (inches)[a]	Average ET (inches)[b]	Irrigation Requirement (ET – Precip.) (inches)
January	2.80	1.83	0
February	2.96	2.20	0
March	2.29	3.42	1.13
April	0.56	4.84	4.28
May	0.22	5.61	5.39
June	0.02	6.26	6.24
July	0.10	6.47	6.37
August	0.12	6.22	6.10
September	0.30	4.84	4.54
October	0.36	3.66	3.30
November	0.78	2.36	1.58
December	1.58	1.83	0.25
TOTAL	**12.09**	**49.54**	**39.18**

(a) Per data by National Weather Service (Weather.Com), 30-year history through 2002.
(b) From California Irrigation Management Information System (CIMIS) for Temecula and Lake Elsinore.

For the 30-year period ending in 2002, the Lake Elsinore area requires 39.18 inches of irrigation over 10 months of the year, providing an average irrigation rate of 3.92 inches per month (39.18 inches/10 months). As Table 7-1 indicates, July has the highest monthly irrigation demand at 6.37 inches. The resulting maximum month peak factor is therefore:

- MMD = (6.37 inches / 3.92 inches) = 1.63 x ADD

Maximum day demand peaking factors used for the purposes of this study have been derived through examination of peaking factors for other recycled water systems of similar characteristics and climates as the Lake Elsinore area. Maximum day demand peaking factors for these systems range from 1.18 to 1.21 times the peak month demand. Given the high summer time temperatures and ET rates in the Lake Elsinore area, a maximum day demand factor of 1.25 times the peak month demand is selected for the purposes of this study. Based on this, the ratio of maximum day demand to average day demand is therefore:

- MDD = 1.25 x MMD = 1.25 x 1.63 x ADD = 2.04 x ADD

Peak hour demand represents the anticipated maximum demand in the recycled water system. The peak hour demand will occur during the irrigation period between 9 p.m. and 6 a.m. Based on these hours of irrigation, the peak hour demand can be calculated as:

- PHD = (24 hrs. per day / 9 hours irrigation per day) x MDD = 2.67 x MDD = 5.45 x ADD

7.1.2 Pipeline Sizing Criteria

The following criteria were developed in coordination with District input, the approved potable water system design criteria established in the 2002 Distribution System Distribution System Master Plan, and the EVMWD 2004 Standard Specifications for Water and Recycled Water Requirements:

- Peak hour demands will be used to size all distribution system pipelines
- A Hazen-Williams friction coefficient of 120 is used for all pipe sizing, consistent with District design specifications
- Minimum pressure (Pmin) in the recycled water system of 40 psi is desired for nodes under peak hour demand conditions
- Maximum pressure (Pmax) in the recycled water system is 120 psi with 80 psi targeted under peak hour demand conditions
- Maximum velocities under peak hour demand conditions will differ based on transmission main (12 inches or greater) or distribution line (8 inches or less)
    - Vmax for transmission mains is 3 feet per second
    - Vmax for distribution mains is 6 feet per second

These criteria are used for analysis and sizing of all recycled water pipelines within the Regional recycled water service area.

7.1.3 Reservoir Sizing Criteria

Consistent with the District's 2004 Standard Specifications and design criteria, reservoir storage requirements are set equal to the sum of one day of maximum day demand plus operational storage (equal to 30 percent of the maximum day demand). The resulting reservoir storage criteria is therefore:

- Reservoir storage = 1.3 x Maximum Day Demand = 2.65 x Average Day Demand

Storage volume for emergency (fire) conditions is assumed to be provided through the District's potable water system, and no fire flow or emergency storage is provided in the recycled water system.

7.1.4 Pump Sizing Criteria

Pump stations are sized to meet the maximum day demands of each pressure zone while filling the reservoirs of each pressure zone. Peak hour demands are supplied through reservoir storage. Pump station sizing is based on hydraulic analyses of the recycled water distribution system. Each pump station will include a standby pump, however the pump stations will not be equipped with standby power.

7.2 Unit Costs

The capital and operations and maintenance (O&M) costs presented in this study are based on unit cost data for pipelines, pump stations, reservoirs, turnouts and related recycled water facilities. The unit costs also include allowance for engineering, administration and project contingencies as a percentage of the estimated construction costs. A factor of 20 percent of construction cost has been used to account for engineering and administrative costs, including:

- Planning and preliminary design
- Surveying and geotechnical investigations
- CEQA compliance and permitting
- Final design
- Construction administration and inspection

A planning-level project contingency of 20% has been applied to the estimated construction, engineering and administrative costs. Criteria and assumptions that were used to develop the estimates of probable costs include:

- **Pipelines:** These planning-level unit costs include pipe materials (assumed to be PVC and ductile iron pipe), excavation, bedding and backfill, and traffic control during construction, pavement replacement (assumed to be asphalt pavement), and allowances for miscellaneous site work. The unit costs do not include right-of-way acquisition. Average depth of cover is assumed to be 42 inches. Costs for distribution pipelines were taken from recent vendor quotes for both PVC and for Ductile Iron (DI) pipe. Based on the District's design criteria, piping 12-inches and smaller is assumed to be PVC. Piping 18 inches and larger is assumed to be ductile iron. Table 7-2 lists the unit costs for recycled water pipelines.

Table 7-2
Recycled Water Pipeline Unit Costs

Pipe Diameter (inches)	Material	Pipeline Unit Cost ($/foot)
4	PVC	$105
6	PVC	$133
8	PVC	$140
12	PVC	$182
18	DI	$315
20	DI	$329
24	DI	$378
27	DI	$420
30	DI	$490
36	DI	$560

- Unit costs for reservoirs were estimated from a reservoir price model for above-grade steel tanks that includes factors for site grading, yard piping, valving, fencing, landscaping, engineering, and administration.
    - 0 -1 mg: $1.30/gal
    - <2 mg: $1.10/gal
    - <5 mg: $1.00/gal
    - <10 mg: $0.90/gal
- Capital costs for pump stations include all pumping, mechanical, motor drive and electrical equipment, pump station building, grading, miscellaneous yard piping and valving, fencing, landscaping, instrumentation & controls, engineering, and administration. Pump stations are assumed to be 70 percent efficient. Based on these criteria, pump station capital costs for the purposes of this study are assumed to be:
    - Pump stations < 200HP: $3,500 per horsepower
    - Pump stations < 700HP: $2,500 per horsepower
- Turnouts will be installed where there is a potential for future growth or a desire to connect to other recycled water systems. Turnouts will be installed at a minimum of 8-inch diameter, with the same size valve, blind flange, with the following unit costs:
    - ≤ 12-inch diameter = $28,000
    - 16-inch to 24-inch diameter = $42,000
    - > 24-inch diameter = $50,000

The following assumptions are used for operation and maintenance costs and for lifecycle analysis:

- Service life = 20 years service life
- Interest rate = 4%
- Power costs = $0.145/kWh
- Chlorine for disinfection = $0.71 per pound
- Annual maintenance costs = 2% of capital cost

7.3 Water Recycling Alternatives Evaluation

The recycled water alternatives evaluations include analysis of the following recycled water system components:

- Service area and customers
- Pressure zones
- Storage
- Distribution system piping

7.3.1 Service Area and Customers

Section 6 identifies potential recycled water markets and uses for recycled water from the Regional WRF including:

- 5,900 AFY (average annual basis) for Lake Elsinore replenishment supply
- 2,225 AFY to serve identified recycled water markets within the Regional recycled water service area (Downtown: 206 AFY [without John Laing Homes], Northwest: 1,309 AFY, Northeast: 710 AFY)
- 1,120 AFY to serve John Laing Homes development and the Wildomar recycled water system
- 3,342 AFY to serve agricultural users along the Temescal Canyon Agricultural Line Corridor

The total of these average annual demands is 12,587 AFY. Accounting for maximum day demands within the Regional recycled water service area, the total maximum day demand of these potential service areas and customers is 14,900 AFY (or 13.3 mgd). However, the projected flows to the Regional WRF are estimated to be 12.67 mgd in 2025. Given that the potential uses for recycled water from the Regional WRF exceed the projected supply availability, the service area and customer markets must be prioritized, with some service areas/markets being deferred or identified for service through other sources.

Because the Regional WRF effluent has low nutrient content, this water is preferred over other non-potable water supply sources for the purposes of lake replenishment. Providing water to the District's lake replenishment program is given the highest priority use of the four above-described service area customers, per the District's 2005 water supply assessment. Other sources of water for lake replenishment will include Eastern MWD water (800 AFY) and water from the District's Island Wells (3,700 AFY). Per the District's 2005 Water Supply Assessment Lake replenishment demands are anticipated to range from:

- 0 AFY during wet years (when the Lake is spilling to Temescal Wash),
- 5,900 AFY during average years
- 10,300 AFY during dry years

With an average annual supply to lake replenishment of 5,900 AFY, the Regional WRF will have available capacity to ultimately supply about 8,300 AFY to other uses. However, as Table 7-3 shows, surplus recycled water will not be available from Regional WRF until about 2015, given dry year commitments for lake replenishment of 10,300 AFY (or 9.19 mgd).

Table 7-3
Availability of Recycled Water Supplies with Lake Restoration

Year	Regional Treatment Plant Flows (mgd)	Flows Required for Lake Restoration (mgd)	Available Supply for Recycled Water System (mgd)
Lake Replenishment Demands During Dry Years			
2005	5.16	9.19	0
2010	7.08	9.19	0
2015	9.33	9.19	0.14
2016	9.678	9.19	0.48
2020	11.07	9.19	1.88
2022	11.71	9.19	2.52
2025	12.67	9.19	3.48
Lake Replenishment Demands During Average Years			
2005	5.16	5.27	0
2010	7.08	5.27	1.81
2015	9.33	5.27	4.06
2016	9.678	5.27	4.41
2020	11.07	5.27	5.80
2022	11.71	5.27	6.44
2025	12.67	5.27	7.40

The second priority of service is therefore the Regional recycled water system customers as identified in Section 6 of this facilities planning report. The Regional WRF will supply both average day and maximum day demands to the Regional recycled water service area customers.

An inter-tie between the Regional recycled water system and the Wildomar recycled water system will provide operational flexibility, and system redundancy. The inter-tie also allows the Regional recycled water system to deliver water to the ornamental lake being constructed as part of the John Laing Homes development. This onsite storage allows water from the Regional recycled water system to be delivered to the John Laing Homes development at a constant flow rate and/or during off-peak hours, thereby minimizing impacts to pipeline and pump station sizing requirements, while providing the District with the desired system flexibility and reliability. For these reasons, the District intends to include an inter-tie with the Wildomar recycled water system with enough capacity to supply average day demands to the John Laing Homes development, 1.0 mgd.

The recycled water demands for lake restoration during dry years, and the maximum day demand of the Regional recycled water system service area total 15,960 AFY. These two beneficial uses of recycled water from the Regional WRF can utilize all of the 14,200 AFY available from the plant out to the 2025 planning horizon of this study. Given this, using

Regional WRF's recycled water to supply non-potable water to the Temescal Canyon Agricultural Line Corridor does not appear to be a preferred recycled water supply option at this time. As development in the area and flows to the Regional WRF continue to increase, the District may wish to consider reevaluating its ability to supply non-potable water to the Temescal Canyon Agricultural Line as part of future facilities planning updates.

7.3.2 Pressure Zones

Review of the identified recycled water users in Section 6, coupled the ground elevations of these users suggests that the Regional recycled water system will need to be served by multiple pressure zones in order to provide recycled water to its customers that is between 40 psi and 120 psi, as prescribed in the design criteria outlined in Section 7.1. The pressure zones will include:

- A 1540-foot pressure zone to serve the majority of the Regional recycled water system users, encompassing all of the northeast and downtown zones and most of the northwest zone. This pressure zone will be supplied recycled water boosted from the Regional WRF.

- A 1740-foot HGL pressure zone is required to serve recycled water users in the northwest portion of the Regional recycled water system. This pressure zone would generally serve those customers located north and west of Grand Avenue. The 1740 zone will be the highest HGL pressure zone in the Regional recycled water service area. Service to this zone will require pumping from the 1540 pressure zone.

The evaluation or the Regional recycled water system pressure zones considered a third pressure zone at a 1500-foot HGL to serve the Downtown area. Given the relatively high demand of the Downtown area (and the inter-tie to the Wildomar system for service reliability to John Laing Homes), construction of this separate pressure zone was evaluated as a potential energy cost savings measure. The following summarizes the evaluation of the 1500 versus 1540 pressure zone alternatives.

7.3.2.1 Evaluation of 1500 Versus 1540 Pressure Zones

Facilities capital and operational costs were used as the basis for evaluating separate 1540 and 1500 pressure zones versus a combined 1540 pressure zone. The average day demand for northwest and northeast portions of the recycled water system, which are supplied via the 1540 pressure zone total 1.8 mgd, and the average day demand for the potential 1500 pressure zone is 0.18 mgd. This 1500 pressure zone demand does not include the 1.0 mgd inter-tie supply to the Wildomar system / John Laing Homes. Table 7-4 summarizes the evaluation of capital and energy costs for the combined 1540 pressure zone, versus having separate 1540 and 1500 pressure zones, with the 1500 pressure zone serving the downtown area.

Table 7-4
Cost Evaluation of 1500 vs. 1540 Pressure Zones

Criteria	Combined 1540 Pressure Zone		Separate 1540 and 1500 Pressure Zones	
Pump Station Capital Cost	***Power Requirements***	***Cost***	***Power Requirements***	***Cost***
1540 Zone PS	400 HP (Max.)	$1.0 million	300 HP (Max.)	$0.75 million
1500 Zone PS	–	–	120 HP (Max.)	$0.42 million
Total Capital Cost		*$1.0 million*		*$1.17 million*
Pump Station Energy Cost	***Power Requirements***	***Cost***	***Power Requirements***	***Cost***
1540 Zone PS	137 HP (Avg.)	$0.233 million/yr	115 HP (Avg.)	$0.195 million/yr
1500 Zone PS	–	–	10 HP (Avg.)	$0.013 million/yr
Total 20 Year Present Worth		*$3.17 million*		*$3.01 million*
Present Worth		*$4.17 million*		*$4.18 million*
COST DIFFERENTIAL				**$0.01 million**

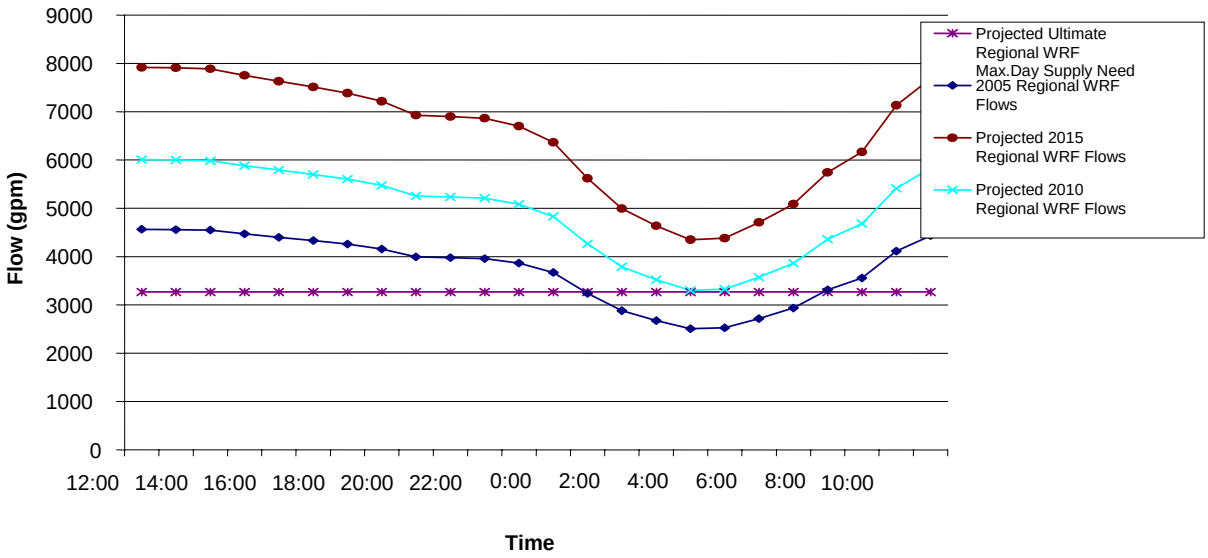
As Table 7-4 indicates, the capital costs for separate versus combined pump stations and pressure zones to serve the 1500 and 1540 pressure zones are similar. The annual energy costs show that the separating the 1500 and 1540 service areas into two pressure zones will save about $25,000 per year, versus operating the system with a combined 1540 pressure zone. However, the present worth cost of the two alternatives is nearly equivalent over a 20-year design life. Given the marginal difference in the present worth costs of the two alternatives, the use of a single 1540 pressure zone is preferable over having two separate zones for ease of operation and system flexibility. Combining the 1540 and 1500 zones would also reduce the total number of pumps needed at the Regional WRF and reduce their maintenance requirements. Therefore, a separate 1500 pressure zone is not further considered for the purposes of this planning study.

7.3.3 Storage Alternatives

An evaluation of reservoir storage requirements for each pressure zone was performed based on the design criteria identified in Section 7.1. In addition, the combined recycled water supplies from the Regional WRF and the reservoir storage must provide sufficient water to meet water deliveries over a 9-hour period, matching the anticipated pattern for most of the recycled water users, which are expected to irrigate between 9:00 p.m. and 6:00 a.m.

The recycled water inter-tie with the Wildomar system for service to John Laing Homes development is anticipated to provide up to 1 mgd of recycled water demand from the Regional recycled water system. As the water from the Regional system will be supplemental water, feeding a zone which has an ornamental lake for onsite storage, this 1 mgd demand will not be peaked. Figure 7-1 shows the anticipated diurnal variations in recycled water supply and demands for the Regional recycled water system.

Figure 7-1
Diurnal Variations in Recycled Water Supplies and Demands



As Figure 7-1 shows, the Regional WRF does not currently have enough diurnal capacity to meet the projected recycled water demands for the Regional system. However, flow rates to the Regional WRF are expected to increase through 2025. By 2015, the Regional WRF is expected to have sufficient diurnal flows to meet the recycled water demands of the Regional system, provided that recycled water for lake restoration is supplied during off-peak hours. Therefore, flow equalization storage for the purposes of meeting diurnal demand vs. supply variations does not appear needed for the Regional WRF, provided that the Regional WRF plant flows keep pace with the phasing of the Regional recycled water system. A comparison of the proposed phasing plan relative to the projected Regional WRF plant flows is further addressed in Section 7.4.

The following table summarizes the reservoir requirements by pressure zone.

Table 7-5
Summary of Reservoir Storage Requirements

Pressure Zone	Average Day Demand		Maximum Day Demand (mgd)[a]	Storage Required (mg)[b]	Storage to be Provided (mg)
	(AFY)	(mgd)			
1740 Zone	387	0.35	0.71	0.92	1.0
1540 Zone	1,838	1.64	3.35	4.35	4.4
TOTAL	**2,225**				**5.4**

Notes:
1 mgd flows to the Wildomar Service area for JLH are included in MDD calculation for the 1540 zone.
1 mgd flows to the Wildomar Service area for JLH are not included in the storage calculation for the 1540 zone.

7.3.3.1 Reservoir Storage – 1540 Pressure Zone

The 1540 pressure zone requires 4.4 million gallons of storage to meet ultimate demands of this zone. This storage volume does not provide storage for service through the proposed inter-tie with the Wildomar system for service to John Laing Homes, as this development includes onsite storage through an ornamental lake. Review of the area topography, proposed developments and site availability suggests that the required 1540 zone storage could be accommodated at either the Tri-Valley user site, Rosetta Canyon user site, or both. The following summarizes the evaluation and recommendations for 1540 zone storage, namely to provide 4.4 million gallon storage at one site, or provide two reservoirs.

The evaluation of combined or distributed reservoir storage for the 1540 zone considers the capital cost of the reservoirs, pumping and pipeline costs, as well as operational and system phasing considerations. Review of the system hydraulics suggests that for the two reservoir alternatives, the reservoirs should be sized at 1.4 MG and 3.0 MG to balance HGLs and system phasing plans.

The unit costs for the reservoir alternatives are as follows:

- Capital cost for two reservoirs:
  - 1.4 MG reservoir: $1.10/gallon x 1.4 MG = $1.54 million
  - 3.0 MG reservoir: $1.00/gallon x 3.0 MG = $3.00 million
  - Total $4.54 million
- Capital cost for one 4.4 MG reservoir: $1.00/gallon x 4.4 MG x 1 = $4.40 million

A hydraulic analysis of the two storage alternatives indicates that the use of two reservoirs for the 1540 zone reduces the total dynamic head requirements for the system. Table 7-6 provides a comparison of distribution system costs for one versus two 1540 zone reservoirs.

Table 7-6
System Requirements for Two Reservoirs versus One[1]

Item	One Reservoir Alternative	Two Reservoir Alternative
Incremental Reservoir Costs	$4.40 million	$4.54 million
Incremental Piping Costs	$8.8 million	$9.3 million
Incremental Pump Station Costs	$1.15 million	$1.00 million
SUBTOTAL CAPITAL COSTS	**$14.35 million**	**$14.84 million**

Note:
[1] Incremental costs reflect only those costs associated with reservoir storage piping and pumping requirements for the 1540 zone, and do not include system-wide costs.

Based on the cost analysis presented in Table 7-5, the use of two reservoirs increases system capital costs by about $ 0.5 million versus using one reservoir due to higher unit costs for the reservoir construction and additional piping needed to connect a second reservoir to the 1540 pressure.

However, while higher in capital cost, the use of two reservoirs may be favored by the District as it provides greater operational flexibility and allows phased construction of reservoir storage.

For the purposes of this facilities planning study, two storage reservoirs are assumed to be provided for the 1540 pressure zone.

7.3.3.2 Reservoir Storage – 1740 Pressure Zone

The maximum day demand for this zone is 0.70 mgd, requiring a storage volume of 1 million gallons. There are several potable water reservoirs located near this area. There appears to be several potential sites available to accommodate a 1 million gallon recycled water reservoir to serve the 1740 pressure zone.

7.3.4 Distribution System Piping Alternatives

Analysis of the proposed recycled water system was performed by analyzing the potential recycled water users versus the recycled water supply sources, pump stations locations and reservoir siting needs for the Regional recycled water service area. From this review, three pipeline routing alternatives were identified. These alternatives vary primarily in the piping routes, and are prepared for the purposes of evaluating the preferred piping network so as to meet the project design criteria and minimize piping costs.

7.3.4.1 Description of Distribution System Piping Alternatives

Alternative piping layouts for the Regional recycled water system were evaluated utilizing a hydraulic model (H2ONet) with service to all the recycled water users identified in the market assessment per Section 6. The pipeline routes were selected primarily to minimize the distance from the Regional WRF water source and the recycled water use sites. The pipeline sizing was determined in accordance with the design criteria for velocity, pressure, and minimum pipe diameter, with 6-inches selected as the minimum pipe size. The following describes the significant features of each of the 3 pipeline alternatives considered in this study:

- **Alternative 1:** This alternative provides service to the northwest zone from two sources: a pipeline from the northeast section; and a line from the Regional WRF. The connection to the northwest section would run over from the Outlet Mall on Collier Avenue, down Pierce Street, and then across to Lake Street. No crossing over the I-15 Freeway would be required. The southern area of the northwest zone would be fed from a pipeline running from the Regional WRF, up Trevelen Avenue, along Strickland Avenue, and then around Gunnerson. The downtown zone would be supplied from a pipeline directly from the Regional WRF along Flint Street. The northeast zone is supplied from a pipeline from the Regional WRF, following a northeast alignment along Chaney Street, along Collier Avenue to the Outlet Mall area, and crossing under the I-15 Freeway overpass on Central Avenue. Figure 7-2 provides a layout of the Alternative 1 distribution system.

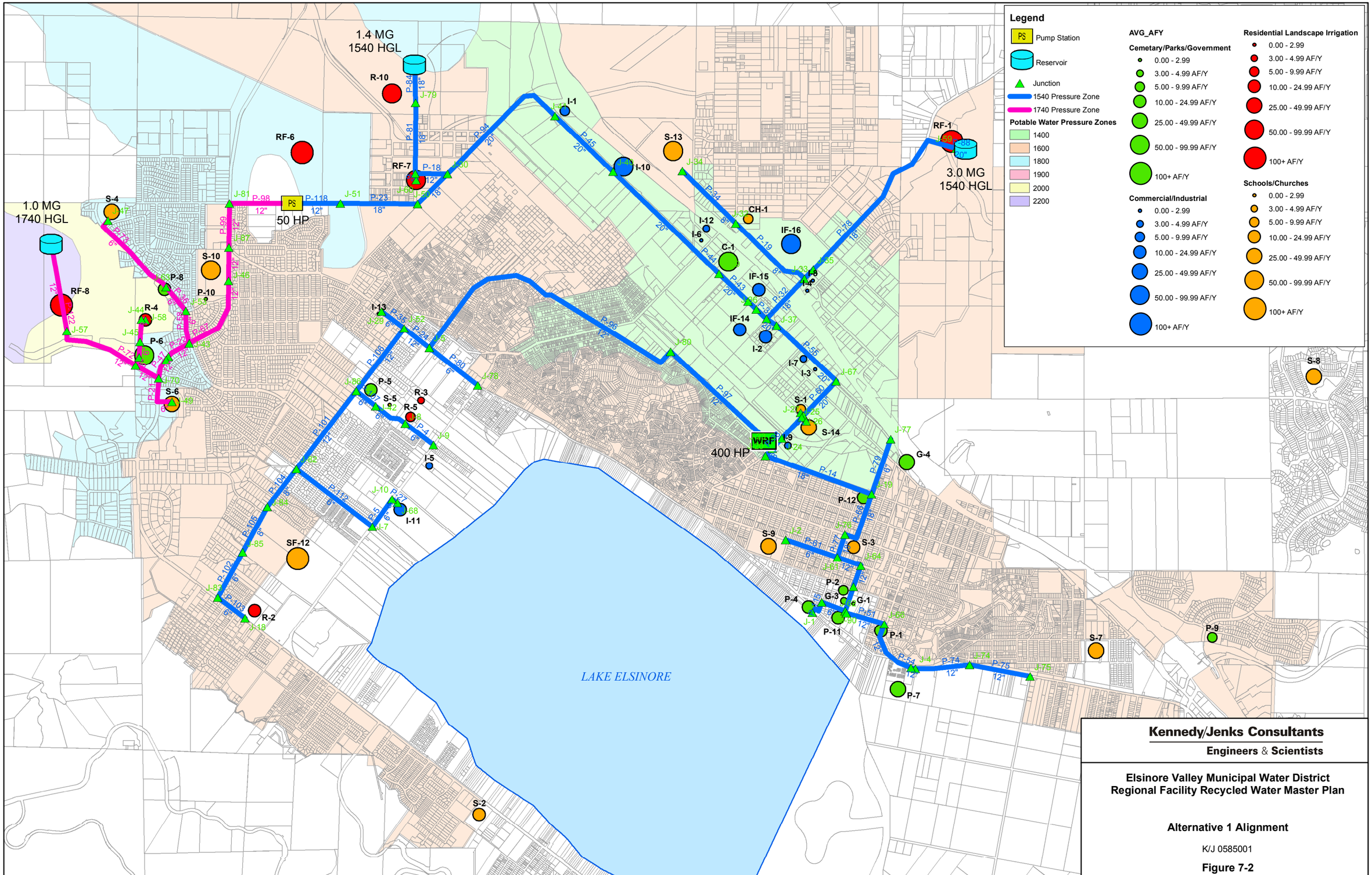
- **Alternative 2:** This alternative provides a looped distribution system to serve the northwest area. Figure 7-3 shows the proposed distribution system layout for Alternative 2.

- **Alternative 3:** This alternative provides an alternative piping configuration for providing water to the 1740 pressure zone. Figure 7-4 illustrates the proposed distribution system layout for Alternative 3.

All pressure and velocity requirements were met for each alternative.

7.3.4.2 Pumping Requirements

The evaluation of the distribution system alternatives includes evaluation of pumping requirements. Pump requirements include the main feed pump station located at the Regional WRF, which will deliver recycled water to the 1540 pressure zone and a booster pump station to supply recycled water from the 1540 pressure zone to the 1740 zone. Table 7-7 summarizes the pump station requirements for the three distribution system alternatives based on the hydraulic modeling results.



Kennedy/Jenks Consultants

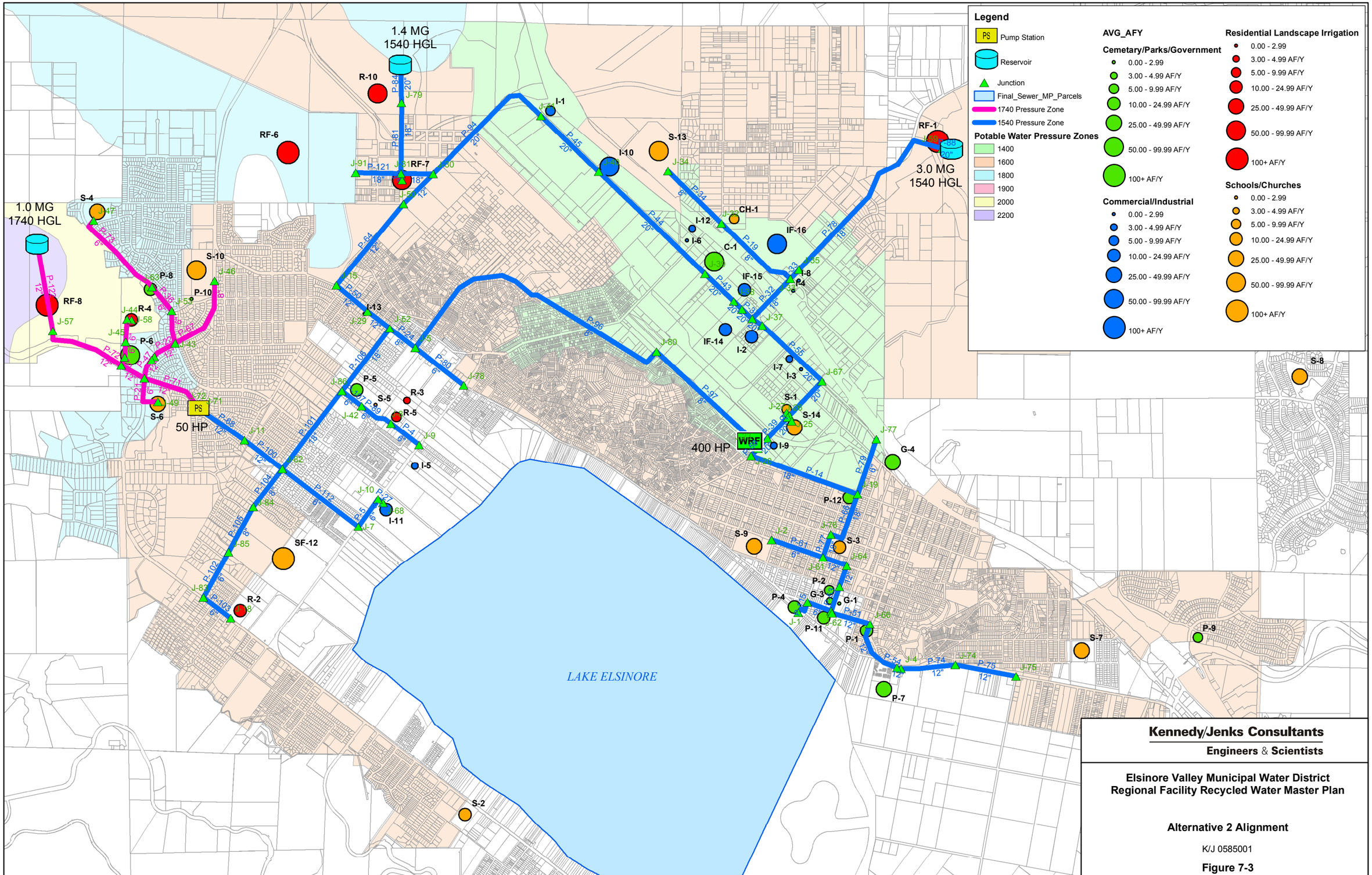
Engineers & Scientists

Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan

Alternative 1 Alignment

K/J 0585001

Figure 7-2



Kennedy/Jenks Consultants

Engineers & Scientists

Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan

Alternative 2 Alignment

K/J 0585001

Figure 7-3

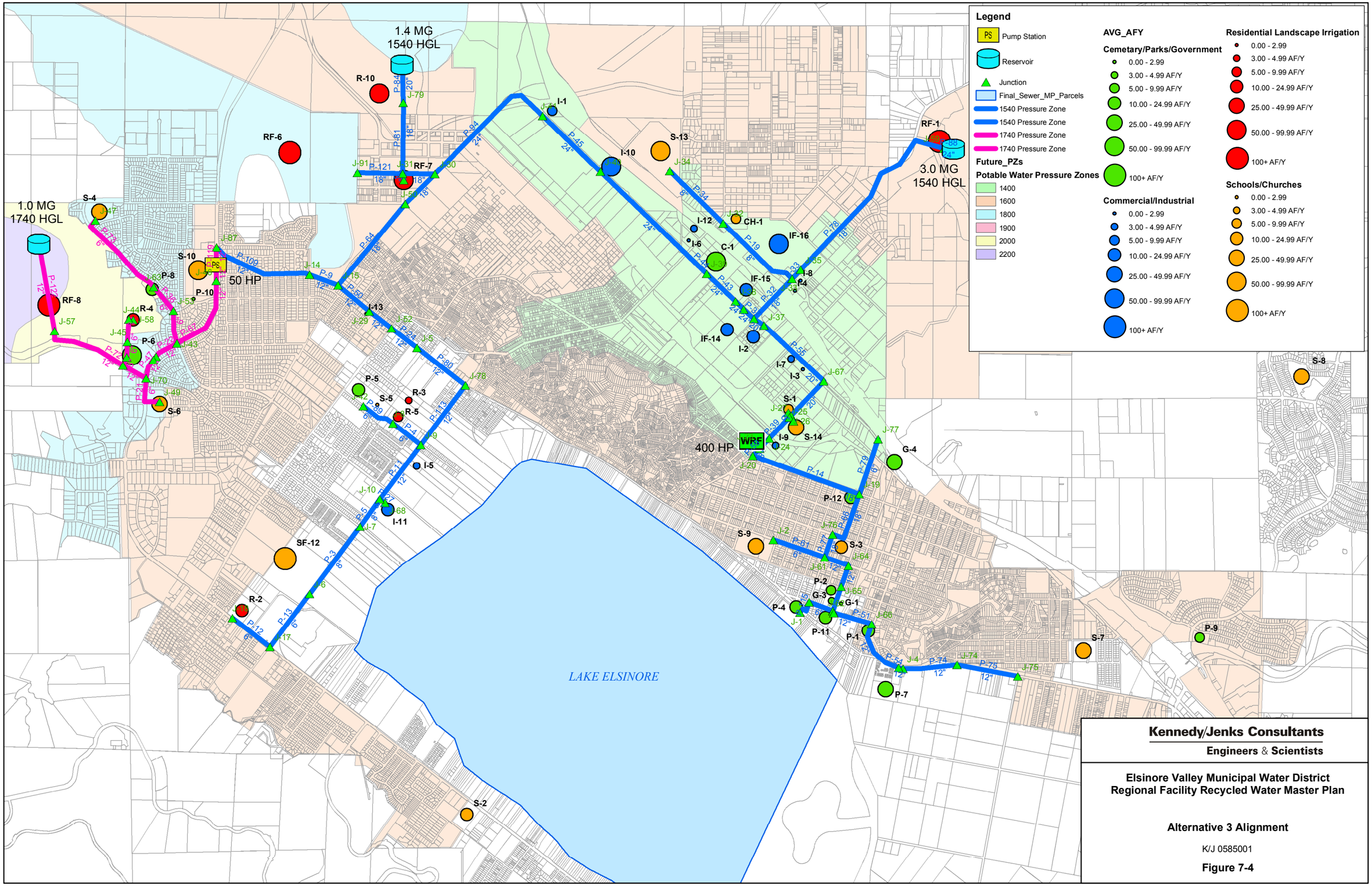

Legend
Pump Station
Reservoir
Junction
Final_Sewer_MP_Parcels
1540 Pressure Zone
1540 Pressure Zone
1740 Pressure Zone
1740 Pressure Zone
Future_PZs
Potable Water Pressure Zones
1400
1600
1800
1900
2000
2200
AVG_AFY
Cemetary/Parks/Government
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Commercial/Industrial
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Residential Landscape Irrigation
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
Schools/Churches
0.00 - 2.99
3.00 - 4.99 AF/Y
5.00 - 9.99 AF/Y
10.00 - 24.99 AF/Y
25.00 - 49.99 AF/Y
50.00 - 99.99 AF/Y
100+ AF/Y
1.4 MG
1540 HGL
1.0 MG
1740 HGL
3.0 MG
1540 HGL
50 HP
400 HP
WRF
LAKE ELSINORE
R-10
RF-6
RF-7
RF-1
RF-8
S-4
S-10
P-8
P-10
R-4
P-6
S-6
P-5
S-5
R-3
R-5
I-5
I-11
SF-12
R-2
S-2
S-13
I-1
I-10
I-12
I-6
C-1
CH-1
IF-16
IF-15
I-8
P-4
IF-14
I-2
I-7
I-3
S-1
I-9
S-14
G-4
P-12
S-9
S-3
P-2
G-3
G-1
P-11
P-1
P-7
S-7
P-9
S-8
Kennedy/Jenks Consultants
Engineers & Scientists
Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan
Alternative 3 Alignment
K/J 0585001
Figure 7-4

Table 7-7
Recycled Water Pump Stations Requirements

Pump Station	Alternative 1	Alternative 2	Alternative 3
Regional WRF Pump Station			
Flow (gpm)	3,500	3,500	3,500
TDH (feet)	290	290	290
HP	400	400	400
Cost ($2,500/HP)	$1,000,000	$1,000,000	$1,000,000
(1540 to 1740) Booster Pump Station			
Flow (gpm)	500	500	500
Head (feet)	215	225	210
HP	50	50	50
Cost ($3,500/HP)	$175,000	$175,000	$175,000
TOTAL PUMP STATION COST	**$1,175,000**	**$1,175,000**	**$1,175,000**

7.3.4.3 Reservoir Storage Requirements

Reservoir storage is provided consistent with the evaluation and recommendations summarized in Section 7.2, that is:

- No additional forebay storage at the Regional WRF
- 4.4 MG storage located within the 1540 pressure zone provided through:
  - One 3.0 MG reservoir
  - One 1.4 MG reservoir
- One 1 MG reservoir located within the 1740 pressure zone

The configuration of the 1540 pressure zone reservoirs (3.0 MG and 1.4 MG) were selected based on the review of the distribution system hydraulics relative to the location of recycled water markets. The proposed reservoir also fits well with the proposed system phasing to be further described in Section 7.4. Table 7-8 summarizes reservoir capital costs.

Table 7-8
Recycled Water Storage Requirements

Reservoir Requirements	1540 Zone		1740 Zone	Total
Zone Storage Required	4.4 MG		1.0 MG	5.4 MG
Reservoir Size(s)	3.0 MG	1.4 MG	1.0 MG	5.4 MG
Unit Cost	$1.0/gallon	$1.1/gallon	$1.3/gallon	–
Capital Cost	$3,000,000	$1,540,000	$1,300,000	$5,840,000

7.3.4.4 Turnout Requirements

Each alternative was evaluated and requirements for turnouts were considered where major transmission lines terminated in any part of the recycled water distribution system. In addition, turnouts were considered at the corner of Chaney and Central where the recycled water distribution system can be tied into the District's existing Reach 4 line, or the TVRWRF Pipeline.

In general, these turnouts can allow the expansion of the recycled water system, or increase the flexibility for tying into other recycled water sources.

7.3.4.5 Cost Evaluation of Distribution System Piping Alternatives

Table 7-9 summarizes the capital, operations and maintenance costs for each of the 3 distribution system alternatives.

Table 7-9
Summary of Alternative Capital and Annualized Costs for Each Alternative

Capital Cost Item	Alternative:		
	1	2	3
Piping Costs	$24,260,000	$24,533,000	$22,273,000
Pump Costs	$1,175,000	$1,175,000	$1,175,000
Turnout Costs	$210,000	$210,000	$210,000
Reservoir Costs	$5,840,000	$5,840,000	$5,840,000
Subtotal Capital Cost:	**$31,485,000**	**$31,758,000**	**$29,498,000**
Annual Costs			
Annualizing Factor	0.0736	0.0736	0.0736
Annual Capital Cost	$2,317,000	$2,337,000	$2,171,000
Annual O&M	$417,000	$420,000	$390,000
Total Annual Costs	$2,734,000	$2,757,000	$2,562,000
Recycled Water Demand	2,225 AFY	2,225 AFY	2,225 AFY
Cost of Service	**$1,229/AF**	**$1,239/AF**	**$1,150/AF**

Based on the comparison of capital and operational costs, Alternative 3 is recommended as the least costly and preferred distribution system alternative.

7.3.4.6 Impact of the Wildomar System Inter-Tie and John Laing Homes

Overall, the addition of the inter-tie with the Wildomar recycled water system for service to John Laing Homes increases the cost of the Regional recycled water system by $1.8 million. These costs are due to requirements for a larger recycled water pump system at the Regional WRF, and the increased transmission pipeline diameters in the downtown area. The average day demand of the recycled water system increases from 2,225 AFY to 3,345 AFY with the addition of service to John Laing Homes.

7.3.5 Treatment Alternatives

There are no specific treatment alternatives needed for the Regional system as the recycled source waters from the Regional WRF are already of tertiary quality.

7.3.6 Market Alternatives

Alternative markets that were evaluated in the market assessment include agriculture, industry (such as cement mixing), construction irrigation, medians for highways, churches, parks, schools, common areas for homeowners associations, and cemeteries. Specific alternative markets examined were the Temsecal Canyon Area and the potential feed of recycled water into Lake Elsinore for lake level stabilization. Recommended recycled water users include those markets that can be most readily served through the Regional WRF system based on the study's design criteria and economic considerations.

7.3.7 Storage Location Alternatives

During the design phase of the project, alternative sites at the required elevations may be evaluated, if required.

7.3.8 Sub-Alternatives

There are no sub-alternatives to the recycled water alternatives presented above in Section 7.3.

7.3.9 Non-recycled Water Alternatives

7.3.9.1 Other Potentially Viable New Sources of Water

Other new sources of water are discussed in Section 3.7.

7.3.9.2 Economic Costs of New Sources of Water

Other new sources of water are discussed in Section 3.7.

7.3.9.3 Pollution Control Alternatives (if applicable)

There is no additional treatment required for the use of recycled water. Treatment for pollution control is not an alternative in this project.

7.3.9.4 No Project Alternative

Without the implementation of the proposed project, the identified customers in the Regional Service Area would continue to use potable water.

7.3.10 Economic Analysis for Each Alternative

A unit cost of service was identified for each alternative by dividing the total cost of each alternative by the total volume of recycled water expected to be delivered. These values are shown in Table 7-9.

7.3.11 Energy Analysis for Each Alternative

Energy usage associated with each alternative was incorporated into the capital and O&M costs. Annual energy was based on projected pumping costs. Construction energy is not expected to be a significant component of cost and was not considered.

7.3.12 Water Quality Impacts of Each Alternative

It is expected that the Regional service area recycled water project as proposed will improve receiving water quality by reducing the quantity of effluent being discharged to Temescal Wash. It is anticipated that the reduced flow to Temescal Wash will not result in any changes to beneficial uses because the quantity of reduction through recycled water use is relatively small compared to the overall flows to Temescal Wash.

Groundwater impacts are expected to be negligible since recycled water will be applied at agronomic rates. Nutrients are expected to be taken up by vegetation reducing the need for fertilizer applications.

7.3.13 Comparison of Alternatives and Recommended Alternative

The alternatives to be compared are the project as proposed and the non-recycled water alternative because the analysis of the project occurred using a hydraulic model to optimize delivery to the best candidate use areas. The main alternatives primarily examine different storage options, pumping configurations, and pipeline routes to the use areas.

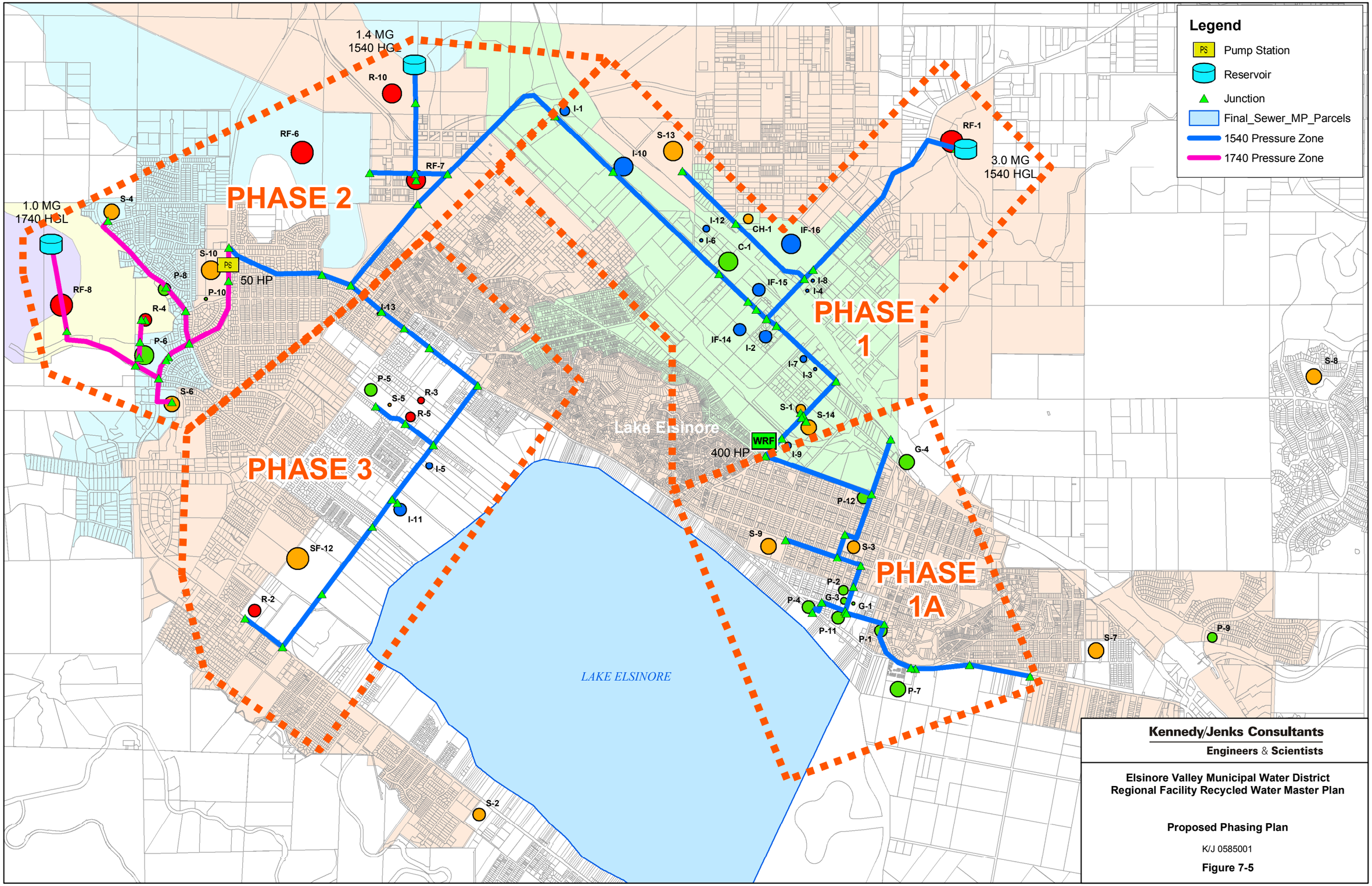
Since the recycled water is coming from an existing tertiary plant, there are no treatment alternatives for this proposed project. The District will continue with ongoing water conservation programs in addition to pursuing the proposed Regional recycled water system.

The Regional recycled water project as proposed is the recommended alternative because:

- There are a significant number of potential recycled water users in the service area with an associated significant water demand
- The proposed project reduces potable demands in an area of rapid growth
- The proposed project takes advantage of an existing water recycling facility that already produces tertiary-treated effluent that meets Title 22 requirements
- The proposed project promotes the State's policies of beneficial reuse of recycled water to replace potable water where possible
- The proposed project reduces discharges to Temescal Wash

7.4 Phasing Plan

Figure 7-5 identifies the proposed phasing plan for the Regional recycled water system. This plan calls for the implementation of the Regional recycled water system in 4 phases. Table 7-10 summarizes the projected recycled water demands and estimated timing of each project phase.



Kennedy/Jenks Consultants

Engineers & Scientists

Elsinore Valley Municipal Water District
Regional Facility Recycled Water Master Plan

Proposed Phasing Plan

K/J 0585001

Figure 7-5

Table 7-10
Recycled Water Demands by Project Phase

	Phase IA	Phase I	Phase II	Phase III
Average Annual Demand	206 AFY	260 AFY	1,409 AFY	350 AFY
Cumulative Average Annual Demand	206 AFY	466 AFY	1,875 AFY	2,225 AFY
Cumulative Average Day Demand	0.18 mgd	0.42 mgd	1.67 mgd	1.99 mgd
Cumulative Maximum Day Demand	0.38 mgd	0.86 mgd	3.42 mgd	4.05 mgd
Max. Day Demand for Wildomar Inter-Tie JLH)	1.00 mgd	1.00 mgd	1.00 mgd	1.00 mgd
Cumulative Total Maximum Day Demand with Wildomar Inter-Tie	1.38 mgd	1.86 mgd	4.42 mgd	5.05 mgd
Year Implemented	2016	2020	2022	2025

The phasing plan for the Regional system is designed such that the total peak system demands will not exceed the reclaimed water supply available from the Regional WRF (based on projected WRF flows summarized in the District's 2005 Water Supply Assessment) with flow diversions for lake restoration totaling 9.18 mgd (10,900 AFY). Installation of the Phase IA system facilitates an inter-tie with the Wildomar recycled water system. This inter-tie allows the District greater operational flexibility and system redundancy.

Recycled water demands for the Wildomar system are estimated to be 2,400 AFY for the Phase 1 and Phase 1A systems. The District is entitled to 1,680 AFY of annual supplies from Eastern MWD's recycled water pipeline, which will serve the Wildomar system. Recycled water supplies for the Wildomar system exceeding 1,680 AFY will need to be purchased by the District. Currently the cost is $165/AF. Thus, the total cost to the District for purchasing supplemental water will be about $120,000 per year for the purchase of 720 AFY of supplemental water for the Wildomar system.

Supplemental water from the Regional WRF could be supplied to the Wildomar system as water is available (such as during normal rainfall years when lake restoration flows are about 5.3 mgd, or 5,900 AFY). This would reduce the amount of water that the District would need to purchase from Eastern MWD for the Wildomar system. As Table 7-3 shows, there would be enough water available from the Regional WRF by 2010 to both meet normal-year lake restoration demands, and supply the supplemental water to the Wildomar system, such that the District would not have to purchase additional water from Eastern MWD. For these reasons, the District intends to pursue Phase IA as the first project phase of the Regional recycled water system. The pipeline between the Regional WRF and the Wildomar system inter-tie could be constructed and placed into service after 2010 to provide an interruptible supply of supplemental water to the Wildomar system. However, a reliable recycled water supply sufficient to meet both the demands of the Phase IA customers and supply water for lake restoration during dry years (9.2 mgd or 10,900 AFY) would not be available from the Regional WRF until 2016.

For a recycled water system to be eligible for state SRF funding, more than one-half of the recycled water demand must come from customers which will be on line at the time the recycled water infrastructure is phased into service. Table 7-11 summarizes the recycled water demands by phase, with recycled water demands identified at the time each project phase is implemented and at ultimate buildout. As this table shows, more than half of the recycled water demands associated with each project phase will be from customers on line at the time each project phase is implemented.

Table 7-12 summarizes the costs versus recycled water supplies for each project phase.

Table 7-11

Recycled Water Customers by Project Phase

Site Code	Name	Phase IA		Phase I		Phase II		Phase III	
		Demand at Completion of Phase IA Construction (AFY)	Ultimate Demand (AFY)	Demand at Completion of Phase I Construction (AFY)	Ultimate Demand (AFY)	Demand at Completion of Phase II Construction (AFY)	Ultimate Demand (AFY)	Demand at Completion of Phase III Construction (AFY)	Ultimate Demand (AFY)
G-1	Sheriff Station County of Riverside	3	3						
G-3	Riverside County Building	3	3						
P-2	Lake Community Center	10	10						
P-1	City Park	11	11						
P-12	Yarborough Park	12	12						
P-11	Swick & Matich Park	13	13						
P-4	Elk Grove Park & Beach	15	15						
S-3	Elsinore Elementary	17	17						
P-7	Lakepoint Park	34	34						
G-4	CalTrans District 8	43	43						
S-9	Elsinore Middle	45	45						
RF-9	JLH East Lake (Optional User)	800	1,220						
I-3	D and D Cattle Co			2	2				
I-4	Douglas Burgers			2	2				
I-6	Lake Elsinore Self Storage			3	3				
I-7	Mercury Marking Devices			3	3				
I-8	Mobil Oil Co			3	3				
I-12	Secured Self Storage			4	4				
I-9	Near-Cal Corp			4	4				
S-1	LEUSD Office			6	6				
G-2	Riverside County Fire			6	6				
CH-1	Latter Day Saints Church			8	8				
I-1	ARCO AM/PM			8	8				
I-2	Central Business Park			13	13				
IF-14	Lake Elsinore Town Center Development			8	17				

Table 7-11
(Continued)

Site Code	Name	Phase IA		Phase I		Phase II		Phase III	
		Demand at Completion of Phase IA Construction (AFY)	Ultimate Demand (AFY)	Demand at Completion of Phase I Construction (AFY)	Ultimate Demand (AFY)	Demand at Completion of Phase II Construction (AFY)	Ultimate Demand (AFY)	Demand at Completion of Phase III Construction (AFY)	Ultimate Demand (AFY)
IF-15	Lake Elsinore Square Development			8	21				
S-14	Ortega Continuation High			27	27				
I-10	Lake Elsinore Outlets			57	57				
C-1	Elsinore Valley Cemetery			67	67				
IF-16	Lake Elsinore Market Place Development			35	68				
S-13	Temescal Canyon High			88	88				
RF-1	Rosetta Canyon Development			100	309				
P-10	Summer Lake Park					0	0		
P-8	Oak Tree Park					13	13		
R-4	Shore Pointe Complex					15	15		
S-4	Rice Canyon Elementary					31	31		
S-6	Withrow Elementary					38	38		
P-6	McVicker Canyon Park					52	52		
RF-7	Lake Elsinore Valley Development					40	66		
S-10	Terra Cotta Middle School					96	96		
RF-8	La Laguna Development					75	142		
RF-10	Alberhill Community Plan					100	192		
RF-6	Alberhill Ranch Development					200	478		
S-5	Machado Elementary							0	0
I-13	Star Plaza Business							2	2
I-5	Jack in the Box							4	4
R-3	Lake Country Villas							4	4
R-5	Walnut Grove Apts							6	6

Table 7-11
(Continued)

Site Code	Name	Phase IA		Phase I		Phase II		Phase III	
		Demand at Completion of Phase IA Construction (AFY)	Ultimate Demand (AFY)	Demand at Completion of Phase I Construction (AFY)	Ultimate Demand (AFY)	Demand at Completion of Phase II Construction (AFY)	Ultimate Demand (AFY)	Demand at Completion of Phase III Construction (AFY)	Ultimate Demand (AFY)
P-5	Machado School Park							14	14
R-2	Harbor Grand Apts							14	14
I-11	Pyramid Enterprises							16	16
SF-12	Lakeside High School							60	120
	TOTAL	**1,006**	**1,426**	**452**	**716**	**660**	**1,123**	**120**	**180**
	Ultimate Demand Percentage		**29%**		**37%**		**41%**		**33%**
	System Wide: Ultimate Demand Percentage		**35%**						

Table 7-12
Recycled Water Costs by Project Phase

		Phase IA	Phase I	Phase II	Phase III
Piping Costs		$4,075,000	$7,585,000	$7,853,000	$2,760,000
Pump Station Costs					
Regional WRF Pump Station		$608,000	0	$392,000	
Booster Pump Station				$175,000	
Reservoir Costs	3.0 MG		$3,000,000		
	1.4 MG			$1,320,000	
	1.0 MG			$1,300,000	
Turnout Costs		$105,000		$105,000	
Total Capital Cost		$4,788,000	$10,585,000	$11,145,000	$2,760,000
Annualization Factor		0.0736	0.0736	0.0736	0.0736
Annualized Capital Cost		$352,000	$779,000	$836,000	$203,000
O&M = 18% of ACC		$56,000	$148,000	$150,000	$37,000
Total Annualized Cost		$365,000	$971,000	$987,000	$240,000
Avoided Costs for Supplemental Water for Wildomar System		-$120,000	$0	$0	$0
Net Annualized Cost		$295,000	$919,000	$968,000	$240,000
Water Usage (AFY)		206	260	1,409	350
Cumulative Water Usage (AFY)		206	466	1,875	2,225
Unit Cost per Phase ($/AF)		$ 1,430 /AF	$ 3,530 /AF	$ 690 /AF	$ 690 /AF
Cumulative Unit Cost ($/AF)		$ 1,430 /AF	$ 2,610 /AF	$ 1,160 /AF	$ 1,090 /AF

As shown in Table 7-12, Phase I has the highest incremental cost. This is due to the costs of constructing the backbone infrastructure (such as pump stations and reservoirs) as part of the Phase I system which is utilized by subsequent project phases.

The Phase II system provides a significant increase in the recycled water market, thus lowering the unit cost of service for the Regional recycled water system.

Table 7-12 suggests that the Phase III system infrastructure would be cost effective to include in the Regional recycled water system. However, it is important to note that the Phase III system includes the Lakeside High School (Market SF-12). The high school currently irrigates its fields and landscaped areas using well water. The economic viability of the Phase III system, and hence its timing for implementation, is tied to the high school converting to recycled water use.

Phase IA includes recycled water service to the downtown area, and the inter-tie with the Wildomar system. The pipelines and pump addition from the Regional WRF to the Wildomar System inter-tie are sized to meet the demands of the downtown area and also provided up to 1 mgd of supply through the Wildomar system inter-tie. The unit costs for service depicted in Table 7-12 include the avoided costs for purchased water from Eastern MWD. However, Table

7-12 includes only the Downtown area recycled water demands for Phase IA system–recycled water quantities supplied to the Wildomar system are not included.

7.5 Water Conservation/Reduction

7.5.1 Analysis

To address future demands, the District's Urban Water Management Plan (MWH, 2000) focused on conservation measures, which were projected to result in a three percent demand reduction when all recommendations are implemented. In the District's Distribution System Master Plan (MWH, 2002), a supply deficit was projected but future sources were not identified.

Water conservation measures that are part of the District's plan are:

- Residential plumbing retrofits
- Water system audits, leak detection and repair
- Financial incentives for large landscape irrigation
- Promotion of low water use landscaping
- Promotion of high-efficiency appliances
- ULF toilet replacement program
- Public information to increase water awareness

The District is also a signatory to the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (CUWCC MOU) for water conservation. As a signatory, the District is committing to implementation of best management practices demand management measures (DMM) to reduce potable water demands. Although use of recycled water is not a DMM, it will be significant with regard to reduction of potable water use.

7.5.2 Impact of Water Conservation/Reduction on Recycling

While conservation measures may help reduce the supply deficit, the measures will unlikely eliminate the deficit. Most likely, both water conservation and recycling will need to be encouraged and promoted in order to eliminate the District's water balance deficit.

7.5.3 Recommendation

The District should continue with their water conservation efforts to achieve its goal of three percent reduction in water supply so that additional water supplies will not be required.

7.5.4 Implementation

The water conservation implementation is outlined in the District's Urban Water Management Plan and in the CUWCC MOU.

Section 8: Recommended Plan

8.1 All Proposed Facilities and Basis for Selection

The proposed facilities as shown on Figure 7-5 are selected based on an analysis of the service area demands, topography and desired operating pressures. The proposed system distributes recycled water throughout the service area and provides a backbone system that could accommodate minimum and maximum demands and allow significant deliveries of recycled water for irrigation.

8.2 Preliminary Design Criteria and Refined Pipeline Routes

The proposed pipelines, pump stations, and storage facilities are sized to meet peak demands of the potential users for Phases IA, I, II, and III. These demands are presented in Section 6. The design criteria for all facilities were presented in Section 7.1. All pipelines will follow the most convenient and lowest cost routes which have been described previously.

8.3 Cost Estimate Based on Time of Construction

The cost estimate based on the anticipated year of construction for recycled water delivery as described in Section 7.4, is presented in Table 8-1.

Table 8-1
Recycled Water Costs by Project Phase

	Estimated 2006 Costs	Estimated Year Construction Begins	Estimated Costs at Time of Construction*
Phase IA	$4,788,000	2015	$6,553,000
Phase I	$10,585,000	2019	$16,947,000
Phase II	$11,145,000	2021	$19,300,000
Phase III	$2,760,000	2024	$5,376,000

*****Escalated at 4%

8.4 All Potential Users

The same quantity and peak demand for the potential users described in Sections 6.2 and 7.4 are being used for design purposes. The largest collective potential users are parks and schools. Because of this, agreements with the Lake Elsinore Unified School District are under discussion.

8.5 Reliability of Facilities as Compared to User Requirements

All facilities for the recycled water project will be designed and sized to meet user requirements. As part of this, an appropriate level of reliability is designed into the proposed recycled water system, such as standby pumping, appropriate use of peaking factors and other design criteria. However, the level of reliability for the recycled water system is not as high as if for potable water, which serves facilities such as hospitals or schools. For example, the recycled water system does not include fire flow storage for its reservoirs or stand by power for its pump stations.

8.6 Implementation Plan

8.6.1 Coordination with Water/Recycled Water Suppliers

As discussed in Section 4, the District owns the water reclamation facilities and the recycled water so there should already be an existing coordination protocol in place to communicate between the staff at the water reclamation facilities and staff in the field as water quality, water quantity and operation & maintenance issues arise.

8.6.2 Ability and Timing of Users to Join System

The District anticipates adopting a mandatory use ordinance for recycled water in 2006, which will be forwarded to the State Board after adoption. A copy of the draft ordinance is included in Appendix B.

8.6.3 Tentative Water Recycling Requirements of RWQCB

See Section 5.1.

8.6.4 Commitments from Potential Users

A meeting was held between the Lake Elsinore Unified School District (School District) and the District. The School District was interested in using recycled water at all of their 22 existing and 5 future school sites for irrigation. The School District's main concern was cost and to alleviate those concerns, EVMWD is planning to discount the price of recycled water and also assist customers with retrofits. The developers of the John Laing Homes project which is to occur in the future phases has indicated their interest with the letter found in Appendix C.

The District is likely to assist in funding the onsite retrofits to facilitate using the recycled water.

8.6.5 Water Rights Impact

As discussed in Section 4, the District will own the water reclamation facilities and the recycled water system so no impacts to water rights are expected. The SWRCB's Division of Water

Rights was contacted and a preliminary interview indicated that there would be no impacts concerning water rights due to the implementation of the proposed project.

8.6.6 Permits, Right-of-Way, Design, and Construction

Pipeline construction will require encroachment permits from the City of Lake Elsinore. Also, land for the proposed reservoirs will have to be purchased either from the City or negotiated with the area developers.

Encroachment permits for all work within the public rights-of-way will be needed from each involved agency prior to commencement of any construction. All traffic control requirements will be complied with.

The California DHS Title 22 review and inspection will be completed, as necessary. The District has already adopted their Recycled Water Rules and Regulations in accordance with Title 22 regulations.

The resolution adopting the environmental document as required under California Environmental Quality Act (CEQA) for the selected project is shown in Appendix D.

8.6.7 Land Use

The City of Lake Elsinore and the County of Riverside are responsible for adoption of the area's general plan. Generally, the selected project is consistent with the land use of the general plans because most of the specific plans for the developers have already been adopted by the City of Lake Elsinore and/or the County of Riverside.

8.6.8 Detailed Schedule

A detailed schedule has been prepared and is attached as Figure 8-1 for Phases IA through III.

8.7 Operational Plan

8.7.1 Responsible People

The District currently has an existing recycled water operations staff at the Horsethief Canyon WRF and Canyon Hills WWTP. To accommodate the Regional recycled water project, the existing staff will be given increased responsibility and appropriate staff will be assigned, including a backflow prevention technician. A copy of the District's recycled water system rules and regulations is included as Appendix E.

8.7.2 Necessary Equipment

Since the District already operates the recycled water, treatment facility and other recycled water systems, all the necessary equipment is already available or will be purchased as necessary for expanding the District's O&M capacity.

8.7.3 Monitoring

The Regional Board requires wastewater treatment plants (Producers) to develop and implement a water reuse monitoring program as part of the General Water Reuse Requirements Order No. 2000-165. The reuse monitoring program requirements for the Regional WRF recycled water are discussed in Section 5.7.3.

8.7.4 Irrigation Scheduling

For all potential users, irrigation scheduling should not change from the way they currently operate. The majority of the users will irrigate from 9 p.m. to 6 a.m., which will minimize interference with recreation but also minimizes evapotranspiration and improve irrigation efficiency and reduce waste. During periods of high temperatures, additional irrigation may occur outside this 9-hour window to allow for longer irrigation to compensate for higher evapotranspiration.

These irrigation schedules are discussed in detail in EVMWD's Recycled Water Rules and Regulations.

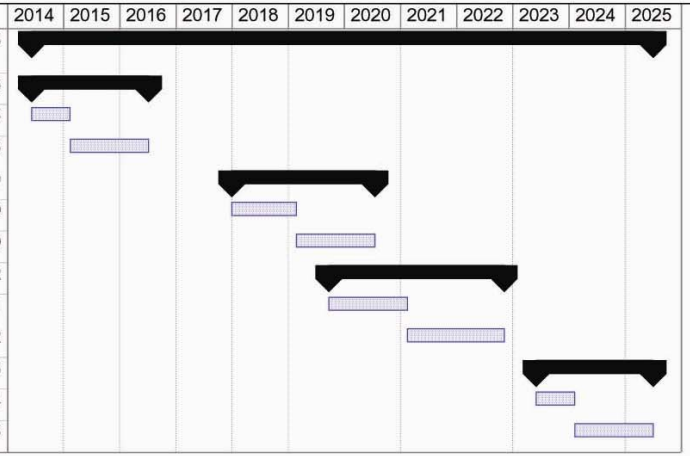
8.7.5 On-site Retrofits

Recently completed developments and all future developments identified for recycled water services (such as Rosetta Canyon and Alberhill Ranch) are being constructed with dual piping systems for irrigation using recycled water once the Regional Recycled Water System is completed.

Existing potable water customers that have not been constructed with dual piping systems will be retrofitted in compliance with all DHS requirements to allow landscape irrigation with recycled water. Future recycled water surveys will identify the piping modifications and inspections needed to ensure appropriate piping separations.

Figure 8-1
Elsinore Valley Municipal Water District
Regional Recycled Water Project Schedule
Phases IA-III

ID	Task Name	Duration	Start	Finish
1	**Schedule Design and Construction**	**2890 days**	**Mon 6/9/14**	**Fri 7/4/25**
2	**Phase IA Project**	**545 days**	**Mon 6/9/14**	**Fri 7/8/16**
3	Design	180 days	Mon 6/9/14	Fri 2/13/15
4	Construction	365 days	Mon 2/16/15	Fri 7/8/16
5	**Phase I Project**	**665 days**	**Tue 1/2/18**	**Mon 7/20/20**
6	Design	300 days	Tue 1/2/18	Mon 2/25/19
7	Construction	365 days	Tue 2/26/19	Mon 7/20/20
8	**Phase II Project**	**815 days**	**Wed 9/25/19**	**Tue 11/8/22**
9	Design	365 days	Wed 9/25/19	Tue 2/16/21
10	Construction	450 days	Wed 2/17/21	Tue 11/8/22
11	**Phase III Project**	**545 days**	**Mon 6/5/23**	**Fri 7/4/25**
12	Design	180 days	Mon 6/5/23	Fri 2/9/24
13	Construction	365 days	Mon 2/12/24	Fri 7/4/25



Project: Project1-rev1
Date: Fri 5/19/06

Task		Milestone		External Tasks		Deadline	
Split		Summary		External Milestone			
Progress		Project Summary		External Milestone			

Section 9: Construction Financing Plan and Revenue Program

9.1 Sources and Timing of Funds for Design and Construction

The Phase IA, I, II, and III projects for the Regional service area are significant projects for the District in meeting its water needs. The District has established a recycled water capital reserve from connection fees collected from new developments. The capital reserve, in addition to issuances of certificates of participation, is critical for design and construction of these projects. A draft annual revenue program for Phases IA through III is discussed below.

9.1.1 Overview of Revenue Program and Construction Financing Plan

The District's Regional recycled water project will provide recycled water for irrigation at the facilities listed in Table 6-1.

9.1.1.1 Revenue Program for EVMWD Regional FPR

The District anticipates funding Phases IA through III of the Regional recycled water project through a combination of cash reserves specifically earmarked for recycled water projects, additional income from connection fees and interest, and from certificates of participation. Table 9-1 identifies the preliminary revenue program of the project. This revenue program does not include recycled water deliveries to the Wildomar area.

9.1.1.2 Construction Financing Plan

Table 9-2 provides a monthly cash flow that forecasts expenses during design and construction for Phases IA through III. The District will sell bonds to finance the Regional construction costs.

Table 9-1
Regional Recycled Water Project Revenue Program

Year of Operation	Calendar Year	Potable Water Rate[1] $/CCF	RW Rate[2] for All Phases $/CCF	O&M[3] Costs $000	RW[4] Revenue $000	RW Income $000	Cumulative Income $000
1	2016	2.68	2.14	103	192	89	89
2	2017	2.79	2.23	108	200	92	182
3	2018	2.90	2.32	113	208	95	276
4	2019	3.01	2.41	119	216	97	374
5	2020	3.13	2.51	402	509	107	481
6	2021	3.26	2.61	422	529	107	588
7	2022	3.39	2.71	766	2,215	1,449	2,037
8	2023	3.53	2.82	804	2,304	1,500	3,536
9	2024	3.67	2.93	845	2,396	1,551	5,087
10	2025	3.81	3.05	980	2,957	1,977	7,064
11	2026	3.97	3.17	1,029	3,075	2,046	9,109
12	2027	4.12	3.30	1,081	3,198	2,117	11,226
13	2028	4.29	3.43	1,135	3,326	2,191	13,417
14	2029	4.46	3.57	1,192	3,459	2,267	15,685
15	2030	4.64	3.71	1,251	3,597	2,346	18,030
16	2031	4.83	3.86	1,314	3,741	2,427	20,457
17	2032	5.02	4.01	1,380	3,891	2,511	22,969
18	2033	5.22	4.18	1,449	4,047	2,598	25,567
19	2034	5.43	4.34	1,521	4,208	2,687	28,254

[1] Potable water rates are based on estimates in Section 3.2.1 assuming the 2005 landscape irrigation rate in the Elsinore.

[2] Assumes recycled water rate is 80% of potable rate.

[3] Assumes Phase IA is in operation in Year 1 and Phase I, II, and III are in operation in Years 5, 7, and 10, respectively. O&M is escalated at 5%.

[4] Revenue based on sales of 206 AFY for Phase IA, 260 AFY for Phase I, 1,409 AFY for Phase II, and 350 AFY for Phase III.

Table 9-2
Monthly Cash Flow Analysis

Phase	Total Cost [(1)]	Begin Construction	End Construction	Duration (mo)	Ave. Cost per mo.	Ave. 3 mo. Cost
IA	$6,552,709	1-Feb-2015	8-Jul-2016	17	$385,453	$1,156,360
I	$16,946,926	26-Feb-2019	20-Jul-2020	17	$996,878	$2,990,634
II	$19,299,534	17-Feb-2021	8-Nov-2022	21	$919,025	$2,757,076
III	$5,376,205	12-Feb-2024	4-Jul-2025	17	$316,247	$948,742
	Phase IA	**Phase I**	**Phase II**	**Phase III**	**Total/Year**	
Feb-15	$1,156,360					
May-15	$1,156,360					
Aug-15	$1,156,360					
Nov-15	$1,156,360				$4,625,441	
Feb-16	$1,156,360					
May-16	$770,909				$1,927,267	
Feb-19		$2,990,634				
May-19		$2,990,634				
Aug-19		$2,990,634				
Nov-19		$2,990,634			$11,962,536	
Feb-20		$2,990,634				
May-20		$1,993,756			$4,984,390	
Feb-21			$2,757,076			
May-21			$2,757,076			
Aug-21			$2,757,076			
Nov-21			$2,757,076		$11,028,305	
Feb-22			$2,757,076			
May-22			$2,757,076			
Aug-22			$2,757,076		$8,271,229	
Feb-24				$948,742		
May-24				$948,742		
Aug-24				$948,742		
Nov-24				$948,742	$3,794,968	
Feb-25				$948,742		
May-25				$632,495	$1,581,237	
Totals	$6,552,709	$16,946,926	$19,299,534	$5,376,205	**$48,175,374**	

[1] Total construction costs have been escalated to the mid-point of the year of construction as shown on Table 8-1.

9.2 Pricing Policy for Recycled Water

The price that the District will charge its potential users has not been fully defined at this time, but will be discounted slightly from the price of potable water to encourage users to take advantage of the recycled water.

9.3 Water Pollution Control Costs

The water pollution control costs are already accounted for in the cost of the sanitary sewer collection and tertiary treatment facilities. No additional water pollution control cost is expected for the delivery of recycled water.

9.4 Annual Projections

9.4.1 Fresh Water Prices

The District's water pricing details are discussed in Section 3.2.1.

9.4.2 Recycled Water Used

In Section 8.6.7, the estimated dates for the construction completion for each phase are shown. This schedule assumes that funding is available to complete all phases of the project. With construction phases being completed over the course of 12 years, from 2014 to 2025, the recycled water use will increase over those years. The recycled water use for each year is shown in Table 9-3.

Table 9-3
Recycled Water Annual Use

Date	Recycled Water Use		Cumulative Recycled Water Use	
	AFY	MGD	AFY	MGD
2016[1]	206	0.18	206	0.18
2017	0	0.00	206	0.18
2018	0	0.00	206	0.18
2019	0	0.00	206	0.18
2020	260	0.23	466	0.42
2021	0	0.00	466	0.42
2022	1,409	1.26	1,875	1.67
2023	0	0.00	1,875	1.67
2024	0	0.00	1,875	1.67
2025	350	0.31	2,225	1.99
2026	0	0.00	2,225	1.99
2027	0	0.00	2,225	1.99

[1] Phase IA projected to be operating in 2016.

9.4.3 Annual Costs of Recycling Project

For approximately the first twenty years, the users will likely be paying the initial capital costs for the construction of the recycled water facilities as well as the O&M costs. Thereafter, the annual costs of the recycled water project will be the O&M costs only. These costs are described in Section 7.4.

9.4.4 Allocation of Costs to Users

The costs of the O&M for delivery of recycled water will be included in the price that potential users will pay for a unit of water. As stated in Section 9.2, this price has not yet been confirmed but is anticipated to be less than potable water. In addition, new users to the system may be charged a connection fee.

9.4.5 Unit Costs to Serve Users

The only category of users is irrigation. See Section 7.3.1.

9.4.6 Unit Price of Recycled Water

The unit price of recycled water can be expected to rise over the years as costs of operations and maintenance increases. In addition, it is likely that if the potable rate increases, the same percentage increase would be applied to the recycled water prices.

9.4.7 Sensitivity Analysis to Underutilization of Recycled Water

These projects are not particularly sensitive to the underutilization of water because all the users identified are existing users that are already using potable water. If the users do not use recycled water, they will still have to use potable water. In addition to the existing users, there are several proposed residential users, which the District has a high level of confidence will be successful in moving forward with their development to use the recycled water when available. A letter of interest from the largest developer (John Laing Homes) is found in Appendix D. Since the District is planning to serve existing users with recycled water and the area is such a high-growth area where the potable water is a limited resource, this project is not sensitive to underutilization of recycled water in Phases IA through III.

9.5 Sunk Costs and Indebtedness

The District has established funding for this project through the connection fee program. Funding to recover capital will also likely occur from commodity charges for recycled water which have yet to be set. There are minimal sunk costs currently associated with the project. The District plans to issue certificates of participation (COP) to raise funds for the project. These COPs are expected to be repaid at a rate of 4% over 30 years.

Section 10: References

2003 Consumer Confidence Report, Elsinore Valley Municipal Water District.

Administrative Draft: Draft Environmental Impact Report – Distribution System Master Plan and Wastewater Master Plan, Montgomery Watson Harza, June 2005.

California Health Laws Related to Recycled Water, "The Purple Book", Excerpts from the Health and Safety Code, Water Code, and Titles 22 and 17 of the California Code of Regulations, California Department of Health Services, June 2001.

Draft Report, Title 22 Engineering Report for the Temescal Division Agricultural System, Montgomery Watson Harza, February 2004.

District-wide Water Supply Assessment Final Report, Elsinore Valley Municipal Water District, August 2005.

EVMWD 2004 Standard Specification for Water and Recycled Water Requirements.

EVMWD Alberhill Water and Wastewater Facilities Participant Study, Kennedy/Jenks, April 2005.

EVMWD Distribution System Master Plan, MWH, May 2002.

EVMWD Groundwater Management Plan, MWH, 2005.

EVMWD John Laing Homes Community Development Water Supply Assessment, MWH, October 2003.

Plan of Study Proposal Approval; Elsinore Valley Municipal Water District (District); Regional Service Area Recycled Water Project Study (Study); Water Recycling Construction Program Project No. WRCP-3814-010, Letter from State Water Resources Control Board, July 2004.

Title 22 Engineering Report for the Regional Wastewater Reclamation Facilities Expansion to 8 MGD, Montgomery Watson Harza, August 2002.

Waste Discharge and Producer/User Water Recycling Requirements for Elsinore Valley Municipal Water District, Regional Water Reclamation Facility, Riverside County – Order No. R8-2005-0003 (NPDES CA8000027), California Regional Water Quality Control Board, Santa Ana Region, March 2005.

Wastewater Master Plan, Final Draft Report, Kennedy/Jenks, June 2003.

Water Recycling Funding Program Guidelines, State Water Resources Control Board, October 2004.

Water Quality Control Plan for Santa Ana River Basin Plan, RWQCB, 1995.

Wildomar Recycled Water Project: Facilities Planning Report, Kennedy/Jenks, January 2005.

Wildomar Service Area Recycled Water Master Plan, Kennedy/Jenks June 2004.

Appendix A

Annual and Peak Irrigation Usage of Potential Recycled Water Users

Appendix A - Annual and Peak Irrigation Usage of Potential Recycled Water Users

Site Code	Customer Name	Service Address	City	Zip Code	Meter Number	Account Number (APN)	User Code	Average CCF	Average AF/Y	Average Month MGD	Max Month Avg Day MGD	Max Month Peak Day MGD	Max Month Peak Hour MGD
	LAKE ELSINORE UNIFIED SCHOOL DISTRICT (DISTRICT OFFICE)	545 CHANEY ST	LAKE ELSINORE	92530	046-104-3	377151001	999	1445	3.32	0.004	0.006	0.010	0.027
	LAKE ELSINORE UNIFIED SCHOOL DISTRICT (DISTRICT OFFICE)	565 CHANEY ST	LAKE ELSINORE	92330	046-103-3	377151001	999	652	1.50	0.002	0.003	0.005	0.012
	LAKE ELSINORE UNIFIED SCHOOL DISTRICT (DISTRICT OFFICE)	550 BIRCH ST	LAKE ELSINORE	92530	405-1615-6	377151017	999	377	0.87	0.001	0.002	0.003	0.007
S-1								**2474**	**5.69**	**0.006**	**0.010**	**0.017**	**0.046**
S-2	BUTTERFIELD ELEMENTARY SCHOOL	16275 GRAND AVE	LAKE ELSINORE	92530	430-153-2	386140008	903	6657	15.31	0.016	0.028	0.047	0.125
	ELSINORE ELEMENTARY SCHOOL	409 W HEALD AVE	LAKE ELSINORE	92530	405-0409-1	374152003	999	2601	5.98	0.006	0.011	0.018	0.049
	ELSINORE ELEMENTARY SCHOOL	501 W SUMNER AVE	LAKE ELSINORE	92530	404-1615-1	374053025	999	1303	3.00	0.003	0.005	0.009	0.024
	ELSINORE ELEMENTARY SCHOOL	207 N LANGSTAFF ST	LAKE ELSINORE	92530	123-0207-0		999	3582	8.24	0.009	0.015	0.025	0.067
S-3								**7486**	**17.22**	**0.018**	**0.031**	**0.053**	**0.140**
S-4	RICE CANYON ELEMENTARY SCHOOL	29535 WESTWIND	LAKE ELSINORE	92530	185-938-1	391560011	999	13538	31.14	0.033	0.057	0.095	0.254
S-5	MACHADO ELEMENTARY SCHOOL *	15150 JOY ST	LAKE ELSINORE	92530	120-1043-1	379370022	999	0	0.00	0.000	0.000	0.000	0.000
S-6	WITHROW ELEMENTARY SCHOOL	30100 AUDELO ST	LAKE ELSINORE	92330	153-483-1	387030009	999	16400	37.72	0.040	0.069	0.115	0.308
S-7	RAILROAD CANYON ELEMENTARY SCHOOL	1300 MILL ST	LAKE ELSINORE	92530	039-1594-1	363540015	999	11040	25.39	0.027	0.046	0.078	0.207
	TUSCANY HILLS ELEMENTARY SCHOOL	BOX #10 30 SUMMERHILL DR	LAKE ELSINORE	92532	TH-208-3		999	13278	30.54	0.033	0.054	0.091	0.242
	TUSCANY HILLS ELEMENTARY SCHOOL	23 PONTE RUSSO	LAKE ELSINORE	92532	TH-305-1	349280032	999	5480	12.60	0.013	0.023	0.039	0.103
S-8								**18758**	**43.14**	**0.046**	**0.077**	**0.129**	**0.345**
	ELSINORE MIDDLE SCHOOL	1203 W GRAHAM AVE	LAKE ELSINORE	92530	407-9072-1	374181001	999	12297	28.28	0.030	0.051	0.086	0.231
	ELSINORE MIDDLE SCHOOL	115 N LEWIS ST	LAKE ELSINORE	92530	117-0115-2		999	7142	16.43	0.018	0.030	0.050	0.134
S-9								**19439**	**44.71**	**0.048**	**0.081**	**0.137**	**0.365**
	TERRA COTTA MIDDLE SCHOOL	29291 LAKE ST	LAKE ELSINORE	92330	110-360-4	389040063	999	31931	73.44	0.079	0.134	0.224	0.599
	TERRA COTTA MIDDLE SCHOOL	29291 ROBB RD	LAKE ELSINORE	92530	110-102-1	389040063	999	9582	22.04	0.024	0.040	0.067	0.180
S-10								**41513**	**95.48**	**0.102**	**0.174**	**0.292**	**0.779**
SF-11	EDGE DEVELOPMENT INC (LAKELAND VILLAGE MIDDLE)	18663 GRAND AVE	LAKE ELSINORE	92530	100-007-20	0	905	1811	4.17	0.004	0.007	0.012	0.033
	EDGE DEVELOPMENT, INC (LAKESIDE HIGH SCHOOL) **	32693 RIVERSIDE DR	LAKE ELSINORE	92530	100-111-27		905	8220	18.91	0.020	0.034	0.058	0.154
	EDGE DEVELOPMENT, INC (LAKESIDE HIGH SCHOOL) **	32693 RIVERSIDE DR	LAKE ELSINORE	92530	100-042-10		905	2225	5.12	0.005	0.009	0.016	0.042
	LAKESIDE HIGH SCHOOL **	32693 RIVERSIDE ST	LAKE ELSINORE	92530	130-065-5	379050031	999	18609	42.80	0.046	0.078	0.131	0.349
SF-12								**29054**	**66.83**	**0.072**	**0.122**	**0.204**	**0.545**
S-13	TEMESCAL CANYON HIGH SCHOOL	28551 EL TORO RD	LAKE ELSINORE	92530	110-718-2	389210032	999	38425	88.38	0.095	0.161	0.270	0.721
	ORTEGA CONTINUATION HIGH SCHOOL	520 CHANEY ST	LAKE ELSINORE	92530	046-1657-1	377160031	999	10480	24.10	0.026	0.044	0.074	0.197
	ORTEGA CONTINUATION HIGH SCHOOL	530 CHANEY ST	LAKE ELSINORE	92530	046-1662-1	377160033	999	1165	2.68	0.003	0.005	0.008	0.022
S-14								**11645**	**26.78**	**0.029**	**0.049**	**0.082**	**0.218**

* MACHADO ELEMENTARY SCHOOL SHARES FIELD WITH CITY OF LAKE ELSINORE'S MACHADO SCHOOL PARK
** LEUSD IS ALREADY WATERING SOME FIELDS AS EDGE DEVELOPMENT FINISHES CONSTRUCTION.

C-1	ELSINORE VALLEY CEMETERY	18170 COLLIER AVE	LAKE ELSINORE	92530	910-595-1	377050077	209	29000	66.70	0.071	0.121	0.204	0.544
	LATTER DAY SAINTS CHURCH	18220 DEXTER AVE	LAKE ELSINORE	92530	930-806-1	377040020	999	3500	8.05	0.009	0.015	0.025	0.066
	LATTER DAY SAINTS CHURCH	18220 DEXTER AVE	LAKE ELSINORE	92530	930-804-1	377040020	911	158	0.36	0.000	0.001	0.001	0.003
CH-1								**3658**	**8.41**	**0.009**	**0.015**	**0.026**	**0.069**

Appendix A - Annual and Peak Irrigation Usage of Potential Recycled Water Users

Site Code	Customer Name	Service Address	City	Zip Code	Meter Number	Account Number (APN)	User Code	Average CCF	Average AF/Y	Average Month MGD	Max Month Avg Day MGD	Max Month Peak Day MGD	Max Month Peak Hour MGD
P-1	CITY OF LAKE ELSINORE (CITY PARK)	243 S MAIN ST	LAKE ELSINORE	92530	126-9243-0	0	903	4631	10.65	0.011	0.019	0.033	0.087
P-2	CITY OF LAKE ELSINORE (COMMUNITY CENTER)	GRAHAM AVE	LAKE ELSINORE	92530	307-1288-1	374261026	999	4186	9.63	0.010	0.018	0.029	0.079
	CITY OF LAKE ELSINORE (DIAMOND FIELD)	500 DIAMOND DR	LAKE ELSINORE	92530	640-406-3	373210040	999	4486	10.32	0.011	0.019	0.032	0.084
	CITY OF LAKE ELSINORE (DIAMOND FIELD)	500 DIAMOND DR	LAKE ELSINORE	92530	640-408-3		999	4468	10.28	0.011	0.019	0.031	0.084
	CITY OF LAKE ELSINORE (DIAMOND FIELD)	500 DIAMOND DR	LAKE ELSINORE	92530	640-407-3		999	7048	16.21	0.017	0.029	0.050	0.132
	CITY OF LAKE ELSINORE (DIAMOND FIELD)	500 DIAMOND DR	LAKE ELSINORE	92530	640-406-3	0	999	0	0.00	0.000	0.000	0.000	0.000
P-3									**36.81**	**0.039**	**0.067**	**0.112**	**0.300**
	CITY OF LAKE ELSINORE (ELK GROVE PARK)	LAKESHORE DR (GREENBELT)	LAKE ELSINORE	92330	110-400-2		999	1199	2.76	0.003	0.005	0.008	0.023
	CITY OF LAKE ELSINORE (ELK GROVE PARK)	600 LAKESHORE DR	LAKE ELSINORE	92530	011-0600-2	374301002	903	3203	7.37	0.008	0.013	0.023	0.060
	CITY OF LAKE ELSINORE (ELK GROVE PARK)	LAKESHORE DR	LAKE ELSINORE	92330	110-141-1	374301006	999	414	0.95	0.001	0.002	0.003	0.008
	CITY OF LAKE ELSINORE (ELK GROVE PARK)	500 LAKESHORE DR	LAKE ELSINORE	92530	009-1711-1	374301006	999	1528	3.51	0.004	0.006	0.011	0.029
	CITY OF LAKE ELSINORE (ELK GROVE PARK)	500 LAKESHORE DR	LAKE ELSINORE	92330	222-0000-0		999	9	0.02	0.000	0.000	0.000	0.000
P-4								**6353**	**14.61**	**0.016**	**0.027**	**0.045**	**0.119**
P-5	CITY OF LAKE ELSINORE (MACHADO SCHOOL PARK)	15150 JOY ST	LAKE ELSINORE	92530	120-520-1	0	903	6196	14.25	0.015	0.026	0.044	0.116
	CITY OF LAKE ELSINORE (MCVICKER CANYON PARK)	30001 GRAND AVE	LAKE ELSINORE	92530	175-468-1	0	999	2358	5.42	0.006	0.010	0.017	0.044
	CITY OF LAKE ELSINORE (MCVICKER CANYON PARK)	29355 GRAND AVE	LAKE ELSINORE	92531	185-434-2	391260032	903	20125	46.29	0.050	0.084	0.141	0.378
P-6								**22483**	**51.71**	**0.055**	**0.094**	**0.158**	**0.422**
P-7	CITY OF LAKE ELSINORE (LAKEPOINT PARK)	420 E LAKESHORE DR	LAKE ELSINORE	92530	350-4200-1	373300027	903	14945	34.37	0.037	0.063	0.105	0.280
P-8	CITY OF LAKE ELSINORE (OAK TREE PARK)	LINCOLN ST	LAKE ELSINORE	92530	185-128-2	0	999	5715	13.14	0.014	0.024	0.040	0.107
P-9	CITY OF LAKE ELSINORE (SUMMERHILL PARK)	BOX #2 100 SUMMERHILL DR	LAKE ELSINORE	92532	TH-339-1	363263016	999	4212	9.69	0.010	0.018	0.030	0.079
P-10	CITY OF LAKE ELSINORE (SUMMER LAKE PARK)	900 W BROADWAY ST	LAKE ELSINORE	92530	185-101-2		999	589	1.35				
P-11	CITY OF LAKE ELSINORE (SWICK & MATICH PARK)	402 LIMITED	LAKE ELSINORE	92330	009-0402-0	374254002	903	5715	13.14	0.014	0.024	0.040	0.107
P-12	CITY OF LAKE ELSINORE (YARBOROUGH PARK)	419 N POE ST	LAKE ELSINORE	92530	122-0419-0	0	903	5168	11.89	0.013	0.022	0.036	0.097
	ROSETTA CANYON *	HWY 74 & TRELLIS LN	LAKE ELSINORE	92532	100-002-14	0	905	41845	96.24	0.103	0.175	0.294	0.785
	ROSETTA CANYON *	OHANA & CAMINO DEL NORTE	LAKE ELSINORE	92530	100-320-9	0	905	0	0.00	0.000	0.000	0.000	0.000
	ROSETTA CANYON *	HWY 74 & RAMSGATE DR	LAKE ELSINORE	92530	100-145-6	0	905	0	0.00	0.000	0.000	0.000	0.000
RF-1								**134106**	**309.00**	**0.103**	**0.175**	**0.294**	**0.785**
R-2	HARBOR GRAND APARTMENTS	15120 GRAND AVE	LAKE ELSINORE	92530	155-508-2	379050035	999	5970	13.73	0.015	0.025	0.042	0.112
R-3	LAKE COUNTRY VILLAS	617 WALNUT DR	LAKE ELSINORE	92587	135-112-3	379161001	999	1633	3.76	0.004	0.007	0.011	0.031
	SHORE POINTE	29191 SUNSWEPT DR	LAKE ELSINORE	92530	185-1142-2		999	4410	10.14	0.011	0.018	0.031	0.083
	SHORE POINTE	29151 1/2 GRAND AVE	LAKE ELSINORE	92530	185-1143-2		999	1992	4.58	0.005	0.008	0.014	0.037
	SHORE POINTE	29126 SUNSWEPT	LAKE ELSINORE	92530	185-1179-2		999	0	0.00	0.000	0.000	0.000	0.000
	SHORE POINTE	29117 SUNSWEPT	LAKE ELSINORE	92530	185-1180-2		999	0	0.00	0.000	0.000	0.000	0.000
	SHORE POINTE	29151 SUNSWEPT DR	LAKE ELSINORE	92530	185-1159-2		999	0	0.00	0.000	0.000	0.000	0.000
R-4								**6402**	**14.72**	**0.016**	**0.027**	**0.045**	**0.120**
	WALNUT GROVE APARTMENTS	16460 JOY ST	LAKE ELSINORE	92330	120-1011-4	379131018	999	939	2.16	0.002	0.004	0.007	0.018
	WALNUT GROVE APARTMENTS	16460 JOY ST	LAKE ELSINORE	92530	120-1012-4	379131018	999	802	1.84	0.002	0.003	0.006	0.015
	WALNUT GROVE APARTMENTS	16460 JOY ST	LAKE ELSINORE	92530	120-1010-5	379131018	999	711	1.64	0.002	0.003	0.005	0.013
R-5								**2452**	**5.64**	**0.006**	**0.010**	**0.017**	**0.046**
RF-6	ALBERHILL RANCH **		LAKE ELSINORE	92530			999	208200	478.00	0.512	0.869	1.461	3.900
RF-7	LAKE ELSINORE VALLEY **		LAKE ELSINORE	92530			999	28644	66.00	0.071	0.120	0.202	0.538
RF-8	LA LAGUNA **		LAKE ELSINORE	92530			999	61628	142.00	0.152	0.258	0.434	1.159
RF-9	JOHN LAING HOMES EAST LAKE **		LAKE ELSINORE	92530			999	531900	1221.00	1.308	2.221	3.731	9.962

* TOTAL USAGE IS ANTICIPATED DEMAND. DEVELOPMENT IS UNDER CONSTRUCTION, AND METERS LISTED ARE USED FOR CCONSTRUCTION IRRIGATION.
** ANTICIPATED DEMAND. REFER TO SECTION 5.2.2 FOR CALCULATION METHODS.

Appendix A - Annual and Peak Irrigation Usage of Potential Recycled Water Users

Site Code	Customer Name	Service Address	City	Zip Code	Meter Number	Account Number (APN)	User Code	Average CCF	Average AF/Y	Average Month MGD	Max Month Avg Day MGD	Max Month Peak Day MGD	Max Month Peak Hour MGD
I-1	ARCO AM / PM	19930 COLLIER AVE	LAKE ELSINORE	92530	910-602-1	389200030	999	3248	7.47	0.008	0.014	0.023	0.061
	CENTRAL BUSINESS PARK	601 D CRANE ST	LAKE ELSINORE	92330	046-1609-3	377410006	999	3485	8.01	0.009	0.015	0.024	0.065
	CENTRAL BUSINESS PARK	570 J CENTRAL AVE	LAKE ELSINORE	92330	046-1605-4	377410025	999	1673	3.85	0.004	0.007	0.012	0.031
	CENTRAL BUSINESS PARK	570 CENTRAL AVE	LAKE ELSINORE	92330	046-1604-3	377410037	999	499	1.15	0.001	0.002	0.004	0.009
I-2								**5657**	**13.01**	**0.014**	**0.024**	**0.040**	**0.106**
I-3	D AND D CATTLE COMPANY	18501 COLLIER AVE	LAKE ELSINORE	92530	910-931-1	377151061	999	834	1.92	0.002	0.003	0.006	0.016
I-4	DOUGLAS BURGERS #23	18461 DEXTER AVE	LAKE ELSINORE	92531	930-809-1	377030075	999	1026	2.36	0.003	0.004	0.007	0.019
I-5	JACK IN THE BOX / 003182	31650 RIVERSIDE DR	LAKE ELSINORE	92530	120-1037-2	379120012	999	1655	3.81	0.004	0.007	0.012	0.031
I-6	LAKE ELSINORE SELF STORAGE	29151 RIVERSIDE ST	LAKE ELSINORE	92330	910-480-2	377050073	999	1150	2.65	0.003	0.005	0.008	0.022
	MERCURY MARKING DEVICE	600 B 3RD ST	LAKE ELSINORE	92530	405-1668-1	377151064	999	553	1.27	0.001	0.002	0.004	0.010
	MERCURY MARKING DEVICES	600 3RD ST	LAKE ELSINORE	92530	405-1666-1	377151064	999	868	2.00	0.002	0.004	0.006	0.016
I-7								**1421**	**3.27**	**0.004**	**0.006**	**0.010**	**0.027**
I-8	MOBIL OIL SS18 AAH	29300 CENTRAL AVE	LAKE ELSINORE	92532	910-541-1	377030057	999	1107	2.55	0.003	0.005	0.008	0.021
	NEAR CAL CORPORATION	CRANE ST	LAKE ELSINORE	92530	100-113-16	377140012	905	1024	2.36	0.003	0.004	0.007	0.019
	NEAR-CAL CORPORATION	512 CHANEY ST	LAKE ELSINORE	92530	046-1654-1	377160037	999	821	1.89	0.002	0.003	0.006	0.015
I-9								**1845**	**4.25**	**0.005**	**0.008**	**0.013**	**0.035**
	PRIME OUTLETS (LAKE ELSINORE OUTLETS)	17600 BOX 20 BLDG K COLLIER AVE	LAKE ELSINORE	92530	910-596-1	389612007	999	758	1.74	0.002	0.003	0.005	0.014
	PRIME OUTLETS (LAKE ELSINORE OUTLETS)	17600 BOX 18 BLDG J COLLIER AVE	LAKE ELSINORE	92530	910-597-1	389612007	999	7995	18.39	0.020	0.033	0.056	0.150
								8753	**20.13**	**0.022**	**0.037**	**0.062**	**0.164**
	PRIME OUTLETS (LAKE ELSINORE OUTLETS)	17600 BOX 4 PH I LANDSCAPE COLLIER	LAKE ELSINORE	92530	910-561-1	389210052	999	4540	10.44	0.011	0.019	0.032	0.085
	PRIME OUTLETS (LAKE ELSINORE OUTLETS)	17600 BOX 13 PH II CRIBWALL COLLIER	LAKE ELSINORE	92530	910-560-1	389210052	999	3163	7.27	0.008	0.013	0.022	0.059
	PRIME OUTLETS (LAKE ELSINORE OUTLETS)	17600 BOX 7 PH I CRIBWALL COLLIER	LAKE ELSINORE	92530	910-563-1	389210052	999	2684	6.17	0.007	0.011	0.019	0.050
	PRIME OUTLETS (LAKE ELSINORE OUTLETS)	17600 BOX 25 PH II LANDSCAPE COLLIER	LAKE ELSINORE	92530	910-562-1	389210052	999	2540	5.84	0.006	0.011	0.018	0.048
	PRIME OUTLETS (LAKE ELSINORE OUTLETS)	17600 BOX 26 PH II COURTYARD COLLIER	LAKE ELSINORE	92530	910-575-1	389210052	999	1288	2.96	0.003	0.005	0.009	0.024
	PRIME OUTLETS (LAKE ELSINORE OUTLETS)	17600 BOX 5 PH I COURTYARD COLLIER	LAKE ELSINORE	92530	910-564-1	389210052	999	1149	2.64	0.003	0.005	0.008	0.022
	PRIME OUTLETS (LAKE ELSINORE OUTLETS)	17600 BOX 23 COLLIER AVE	LAKE ELSINORE	92530	910-582-1		999	786	1.81	0.002	0.003	0.006	0.015
								16150	**37.13**	**0.040**	**0.068**	**0.113**	**0.303**
I-10								**24903**	**57.26**	**0.061**	**0.104**	**0.175**	**0.467**
I-11	PYRAMID ENTERPRISES	32040 RIVERSIDE ST	LAKE ELSINORE	92530	120-655-3	379100015	999	7024	16.15	0.017	0.029	0.049	0.132
I-12	SECURED SELF STORAGE	29135 RIVERSIDE DR	LAKE ELSINORE	92530	910-600-1	377050067	999	1730	3.98	0.004	0.007	0.012	0.032
I-13	STAR PLAZA	16331 LAKESHORE DR	LAKE ELSINORE	92530	120-158-5	379422012	999	999	2.30	0.002	0.004	0.007	0.019
IF-14	LAKE ELSINORE TOWN CENTER *	CENTRAL AVE & COLLIER AVE	LAKE ELSINORE	92530			999	7378	17.00	0.018	0.031	0.052	0.139
IF-15	LAKE ELSINORE SQUARE *	CENTRAL AVE & COLLIER AVE	LAKE ELSINORE	92530			999	9114	21.00	0.022	0.038	0.064	0.171
IF-16	LAKE ELSINORE MARKET PLACE *	CENTRAL AVE & DEXTER AVE	LAKE ELSINORE	92530			999	29512	68.00	0.073	0.124	0.208	0.555

* ANTICIPATED DEMAND. VALUE SHOWN IS MIDPOINT OF POSSIBLE RANGE. REFER TO SECTION 5.2.3 FOR CALCULATION METHOD.

G-1	SHERIFF STATION COUNTY OF RIVERSIDE	334 LIMITED ST	LAKE ELSINORE	92530	009-1713-1	374261023	999	1141	2.62	0.003	0.005	0.008	0.021
G-2	RIVERSIDE COUNTY FIRE DEPT	29405 GRAND AVE	LAKE ELSINORE	92530	185-1002-2	391260036	999	2593	5.96	0.006	0.011	0.018	0.049
G-3	RIVERSIDE COUNTY BLDG/GROUNDS	117 S LANGSTAFF ST	LAKE ELSINORE	92530	223-1119-1	374252002	999	1398	3.22	0.003	0.006	0.010	0.026
	CALTRANS DISTRICT 8 EVMW	516 MAIN ST	LAKE ELSINORE	92530	126-9429-2		999	11460	26.36	0.028	0.048	0.081	0.215
	CALTRANS DISTRICT 8 EVMW	516 1/2 MAIN ST	LAKE ELSINORE	92530	126-9430-3		999	7420	17.07	0.018	0.031	0.052	0.139
G-4								**18880**	**43.42**	**0.047**	**0.079**	**0.133**	**0.354**

Appendix B

EVMWD Draft Recycled Water Ordinance

ORDINANCE NO. _____

AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE ELSINORE VALLEY MUNICIPAL WATER DISTRICT ESTABLISHING A WATER RECYCLING MASTER PLAN AND IMPLEMENTING PROCEDURES

WHEREAS, the people of the State of California have a primary interest in the development of facilities to recycle wastewater to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the State (California Water Code, §13510 et seq.); and

WHEREAS, conservation of all available water resources requires the maximum reuse of recycled water for beneficial use (California Water Code, § 461); and

WHEREAS, the State of California has declared that continued use of potable water for irrigation of greenbelt and other areas and for certain other uses may be an unreasonable use of such water where recycled water is available (California Government Code, § 65602(e); California Water Code, § 13550 et seq.; California Code of Regulations, Title 22, § 60301 et seq.);

NOW, THEREFORE, the Board of Directors of the Elsinore Valley Municipal Water District does hereby ordain as follows:

CHAPTER 1. FINDINGS

Existing state statutes declare that the people of the State of California have a primary interest in facilities to recycle wastewater to supplement existing surface and underground water supplies and to assist in meeting the State's future water requirements. Conservation of all available water resources requires the maximum use of recycled water for beneficial use. The State of California has also declared that continued use of potable water to irrigate greenbelt and other areas and for certain other uses may be an unreasonable use of such water where recycled water is available.

Implementing the above State policies is in the Elsinore Valley Municipal Water District's (the "District's") best interest. This Ordinance is necessary to protect the region's common water supply, which is vital to public health and safety, and to prevent injury to persons and to public and private property The District is highly dependent on limited imported water for domestic, agricultural and industrial uses. The reliability of the supply of imported water is uncertain. By developing and utilizing recycled water, the need for additional imported water can be reduced. In light of these circumstances, certain potable water use may be considered unreasonable or wasteful where recycled water is available. Recycled water should also be more readily available in seasons of drought when potable water supply for nonessential uses may be uncertain.

CHAPTER 2. POLICY

It is District policy that recycled water determined to be available pursuant to Water Code Section 13550 shall be used within the jurisdiction whenever and wherever there is not an alternative higher or better use for the recycled water; its use is economically justified; its use is financially and technically feasible; and its use is consistent with legal requirements, preservation of public health, the safety and welfare of the public, and protection of the environment.

CHAPTER 3. DEFINITIONS

The following terms are defined as follows for purposes of this chapter:

3.1. Agricultural Purposes. Agricultural purposes include but are not limited to growing field and nursery crops, row crops, trees, vines, and feeding fowl and livestock.

3.2. Commercial Use. Water used in any building used for office, retail, commercial or similar purposes as toilets, urinals, decorative fountains, landscape irrigation and similar non-residential uses. (See California Water Code, §§ 13550 et seq.).

3.3. Construction Use. Approved reclaimed water use for construction activities such as soil compaction, mixing concrete, and dust control during grading.

3.4 Greenbelt Areas. Greenbelt areas include, but are not limited to, golf courses, cemeteries, parks and non-residential landscaping.

3.5. Industrial Process Water. Water used by any industrial facility with process water requirements including, but not limited to, rinsing, washing, floor trap priming, cooling and circulation, or construction, including any facility regulated by any Industrial Waste Discharge Ordinance of the District. (See California Water Code, §§ 13550 et seq.)

3.6. Lake Elsinore Replenishment. The use of recycled water to replenish Lake Elsinore.

3.7. Off-site Facilities. Facilities under District control including, but not limited to, recycled water transmission and distribution mains and pipelines, reservoirs, pumping stations, treatment plants, and other appurtenances and property. For recycled water service, offsite facilities shall be those upstream of the point of connection with the customer's onsite facilities, normally ending with the meter tailpiece.

3.8. On-site Facilities. Facilities under applicant, owner, or customer control including, but not limited to, landscape irrigation systems and agricultural irrigation systems. For reclaimed water service, the onsite facilities shall be those downstream of the reclaimed water service connection, which shall normally be the meter tailpiece.

3.9. Potable Water. Water conforming to federal, state, and local standards for human consumption.

3.10. Recycled Water. Water which, as a result of treatment of waste, is suitable for direct beneficial use or controlled use that would not otherwise occur (also, "Reclaimed Water"). (See Water Code, §13050(n).)

3.11. Recycled Water Distribution System. A piping system for the delivery of recycled water exclusively and which is separate from any potable water distribution system.

3.12. Recycled Water Use Areas: Existing or planned areas for recycled water use.

3.13. Rules and Regulations: The Rules and Regulations for Reclaimed Water Use adopted April, 2005, and as amended or revised thereafter, establishing the general rules and regulations governing the distribution and use of reclaimed (recycled) water.

CHAPTER 4. Water Recycling Master Plan.

4.1. GENERAL. The District shall prepare and adopt Recycled Water Master Plan(s) ("Master Plan(s)") to define, encourage, and develop the use of recycled water within District boundaries. The Master Plan shall be updated as necessary.

4.2 CONTENTS. Master Plan(s) shall include, but are limited to, the following:

4.2.1. Plants and Facilities. Evaluation of the location and size of and need for present and future reclamation/treatment plants, transmission and distribution mains and pipelines, pump stations, reservoirs, and other related facilities, including cost estimates and potential financing methods for any infrastructure improvements.

4.2.2. Recycled Water Areas. A designation, based on the policies set forth in Chapter 2 and the information set forth in a Master Plan, of the areas within the District that can or will be able to use recycled water in lieu of potable water. Recycled water uses may include, but are not limited to, greenbelt and agricultural irrigation, artificial lakes, Lake Elsinore replenishment, and appropriate commercial, construction, and industrial uses.

4.2.3. Mandatory Recycled Water Use. For each recycled water area, an evaluation whether greenbelt irrigation, agricultural irrigation, artificial lake filling, Lake Elsinore replenishment, commercial, construction or industrial uses shall be limited to recycled water use. As appropriate, mandate construction of recycled water distribution systems or other facilities in new and existing developments for current or future recycled water use as a condition of any development approval or continued water service if future water recycling facilities are proposed in the Master Plan that could adequately serve the development, in accordance with the procedures described in Section 5. Identify resources and adopt measures to assist water users in the financing of necessary conversions.

4.3. RULES AND REGULATIONS. The District shall establish by ordinance rules and regulations governing the use and distribution of recycled water ("District Rules and Regulations").

CHAPTER 5. Procedures.

5.1. EXISTING POTABLE WATER SERVICE

5.1.1. Preliminary Determination. Based upon the Master Plan(s), and in accordance with the District Rules and Regulations, upon the designation of each recycled water area or the commencement of the design of new recycled water facilities, the District shall make preliminary determinations as to which existing potable water customers will be converted to recycled water use. Each water customer shall be notified of the basis for a determination that conversion to recycled water service will be required, as well as the proposed conditions and schedule for the proposed conversion, and any incentives provided for such conversion.

5.1.2. Notice. The notice of the preliminary determination described in Section 5.1.1, including the proposed conditions, time schedule for conversion, and a recycled water permit application, shall be sent to the water customer by certified mail.

5.1.3. Objections; Appeals. The water customer may file a notice of objection with the District within (30) days after receipt of any notice of determination to comply, and may request reconsideration of the determination or modification of the proposed conditions or schedule for conversion. The objection must be in writing and specify the reasons for the objection. The preliminary determination shall be final if the customer does not file a timely objection. Staff shall review the objection and shall confirm, modify or abandon the preliminary determination. Upon issuance of a final determination by staff, the customer may appeal the determination by submitting a written appeal letter to the District's General Manager describing the basis of the appeal. The District's General Manager shall make the final determination regarding the appeal within 30 days of Staff's final determination.

5.2. DEVELOPMENT AND WATER SERVICE APPROVALS

5.2.1. Application as Condition of Approval. Upon application by a developer or owner of a new industrial, commercial or residential subdivision (herein referred to as "applicant") for a discretionary approval for development, District staff shall review the Master Plan(s) and make a preliminary determination whether the use of the subject property requires recycled water, and/or whether to include facilities to accommodate future recycled water use. Based upon such determination, recycled water use, and construction of recycled water distribution systems or other recycled water facilities within the development, and an application for a recycled water permit, may be required conditions of approval of any such development application, in addition to any other conditions.

5.2.2. Voluntary Application. On a case by case basis, upon application for a recycled water permit for property not otherwise covered by Sections 5.1.1 and 5.2.1, the District shall review the Master Plan(s) and determine whether the applicant property may obtain

recycled water. If the potential recycled water customer and the District cannot agree on recycled water service terms, or if the District determines that recycled water is not available for the proposed use, the District may, in its sole discretion, refuse to provide such service.

5.2.3. Notice of Determination. A notice of the basis for the preliminary determination, proposed conditions of approval, and a schedule for compliance shall be provided to the applicant prior to approving the development application.

5.3. RECYCLED WATER PERMIT PROCESS. Upon the District's final determination that a property may or shall be served with recycled water, or upon adoption of a condition of development approval requiring recycled water use or accommodation, the water customer, owner, or applicant shall obtain a recycled water permit.

5.3.1. Permit Conditions. The recycled water permit shall specify the design and operational requirements of the applicant's water distribution facilities, and schedule for compliance, based on the District Rules and Regulations, and shall require compliance with the California Department of Health Services Wastewater Reclamation Criteria (see California Code of Regulations, Title 22) and Regional Water Quality Control Board requirements.

5.3.2. Plan Approval. The District shall review plans for the recycled and non-recycled water distribution systems and perform a field inspection before granting the permit.

5.3.3. Permit Issuance. Upon approving the plans described in Section 5.3.2, the District shall issue the recycled water permit. Recycled water shall not be supplied to a property until District inspection determines that the applicant complies with the permit conditions.

5.4. TEMPORARY USE OF POTABLE WATER. At the District's discretion, potable water may be temporarily available to a site required to use recycled water, until recycled water is available. The applicant must obtain a recycled water permit before it may receive temporary potable water for new on-site distribution facilities. Prior to commencing recycled water service, the District will conduct an on-site facilities inspection to verify that the facilities have been maintained and are in compliance with the recycled water permit and current service requirements. Upon a determination that the recycled water facilities are not in compliance, the applicant shall be notified of necessary corrective actions per the District's Rules and Regulations.

5.5. RECYCLED WATER RATE. The rate charged for recycled water shall be established by District resolution.

CHAPTER 6. Enforcement and Sanctions.

6.1. PUBLIC NUISANCE. Discharge of wastes or the use of recycled water in any manner in violation of this Ordinance, the District Rules and Regulations, or of any permit issued hereunder is hereby declared a public nuisance and shall be corrected or abated as directed by District. Any person creating such a public nuisance is guilty of a misdemeanor.

6.2. CEASE AND DESIST ORDERS: When the District finds an activity, waste discharge, practice, or operation in violation of this Ordinance or the District Rules and Regulations has occurred or is likely to occur, the District may issue an order to cease and desist such activity, waste discharge, practice, or operation causing or likely to cause such violation.

6.3 CIVIL ACTIONS and INJUNCTIONS. In addition to any other available remedies, the District may enforce any violation of this Ordinance or the District Rules and Regulations by a civil action. In any such action, the District may seek, as appropriate, any or all of the following remedies:

6.3.1. A temporary and/or permanent injunction;

6.3.2. Assessment of the violator for the costs of any investigation or monitoring leading to the establishment of the violation, and for the reasonable costs to prepare and bring legal action under this section;

6.3.3. Costs incurred to remove, correct or terminate the adverse effects resulting from the violation; or

6.3.4. Compensatory damages for loss or destruction to water quality.

6.4. PERMIT REVOCATION. In addition to any other statute or rule authorizing termination of water service, the District may revoke permits issued hereunder if it finds a violation of any provision of this Ordinance or the District Rules and Regulations, or if a waste discharge or a recycled water use causes or threatens to cause a nuisance.

6.5. PENALTY. Any person or entity who violates this Ordinance or the District Rules and Regulations shall be subject to a fine not exceeding $1,000 for each day, or portion thereof, of violation. In addition, water service to the property may be discontinued. This section shall be in addition to, and shall not limit or restrict any other penalties or corrective actions granted, taken or authorized under the District Rules and Regulations.

CHAPTER 7. Validity.

If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, the remainder of the ordinance and the application of such provisions to other persons or circumstances shall not be affected thereby.

I HEREBY CERTIFY that the forgoing ordinance was introduced at a regular meeting of the Board of Directors of the Elsinore Valley Municipal Water District held May 13 ,2004, by Board Member _____ who moved its adoption and passage by the following vote:

AYES:
NOES:
ABSENT:
SECONDED:

_____
President of the Board of Directors of
Elsinore Valley Municipal Water District

ATTEST:

_____
Secretary of the Board of Directors
of Elsinore Valley Municipal Water District

Appendix C

Letter of Intent for John Laing Homes

John Laing Homes
Hand crafted since 1848

January 14, 2005

Mr. Phillip M. Miller
Director of Engineering
Elsinore Valley Municipal Water District
31315 Chaney Street
Post Office Box 3000
Lake Elsinore, CA 92531-3000.

Subject: Letter of Intent to Execute a User Agreement for Recycled Water Use

Dear Mr. Miller:

We hereby confirm our commitment to use recycled water for irrigation for Laing-CP, Lake Elsinore LLC (John Laing Homes' Southerly Development) in Lake Elsinore when it is available by signing this letter of intent to execute a user agreement.

John Laing Homes understands that the Elsinore Valley Municipal Water District (District) is in the process of applying for a construction grant from the State Water Resources Control Board and requires this letter of intent to execute a user agreement from the potential users of recycled water.

We look forward to working with the District in developing a user agreement so that the Southerly Development can participate in the Recycled Water Project and reduce our dependence on potable water.

Please contact Michael A. Filler at (951) 245-9075 if you have any questions regarding this matter.

Sincerely,
John Laing Homes

Michael A. Filler
Vice President

31900 Mission Trail Suite 225 Lake Elsinore CA 92530 tel 951-245-9075 fax 951-245-2270 www.johnlainghomes.com

Appendix D

Resolution Adopting CEQA Documentation

Board of Directors
Phil Williams, President
W. Ben Wicke, Vice President
Harvey R. Ryan, Treasurer
Christine Hyland, Director
Kris Anderson, Director

Elsinore Valley Municipal Water District

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

EVMWD BOARD ACTION:
☒ APPROVED
☐ APPROVED AS AMENDED
☐ DENIED
☐ CONTINUED
4-0 8/10/06

DATE: August 10, 2006

TO: Board of Directors

FROM: General Manager

SUBJECT: CONSIDER ADOPTION OF THE MITIGATED NEGATIVE DECLARATION FOR THE REGIONAL RECYCLED WATER MASTER PLAN

RECOMMENDATION

The General Manager and staff recommend that the Board of Directors:

1st ~~Motion~~ Motion

1. Determine in light of the whole record, that the project will not have a significant effect on the environment with the incorporation of mitigation measures into the project, that the Mitigated Negative Declaration reflects the independent judgment of the Board of Directors, and that the Mitigated Negative Declaration as proposed by Staff be adopted; and,

2nd motion

2. Approve the Project, and direct Staff to file and post a Notice of Determination in accordance with the District's Guidelines.

BACKGROUND

The purpose of the Regional Service Area Recycled Water Master Plan is to identify potential recycled water users that may be served from the Regional Water Reclamation Facilities (WRF), analyze the recycled water market, develop alternatives, layout the recommended facilities, identify the estimated construction costs, and determine the environmental impacts. The State Water Resources Control Board approved a grant commitment for $75,000 for the recycled water planning study.

Pursuant to the California Environmental Quality Act (CEQA), an Initial Study was prepared for the project, and based on the study; staff prepared a Draft Mitigated Negative Declaration. A Notice of Preparation of Draft Mitigated Negative Declaration has been filed with the Riverside County Clerk and State Clearinghouse, and published and posted in accordance with CEQA Guidelines. Public comments were received and the District responses to those comments are included herewith.

951.674.3146
Fax 951.674.9872
www.evmwd.com

31315 Chaney Street
P.O. Box 3000
Lake Elsinore, CA 92530

Appendix E

EVMWD Rules and Regulations for Recycled Water Use

Elsinore Valley Municipal Water District

Elsinore Valley Municipal Water District

Final Report

Rules and Regulations for Recycled Water Use

July 2005

MWH

TABLE OF CONTENTS

Section Name **Page Number**

SECTION 1 INTRODUCTION 1-1

1.1 GENERAL 1-1
1.2 POLICY 1-1
1.3 PURPOSE 1-2
1.4 INTERPRETATION 1-2

SECTION 2 DEFINITIONS 2-1

SECTION 3 RECYCLED WATER SERVICE REQUIREMENTS 3-1

3.1 SERVICE CONDITIONS 3-1
3.2 APPLICATION PROCEDURE 3-1
3.3 PERMITS 3-2
3.4 ESTABLISHING SERVICE 3-3
3.5 CONDITIONS FOR RECYCLED WATER SERVICE 3-4
3.6 SIZE AND LOCATION OF SERVICE CONNECTIONS 3-7
3.7 ILLEGAL CONNECTIONS 3-7
3.8 METER TESTING 3-7
3.9 CROSS-CONNECTION PREVENTION 3-8
3.10 CONVERSION TO/FROM RECYCLED WATER SERVICE 3-10
3.11 AUTHORIZED USES OF RECYCLED WATER 3-11
3.12 SCHEDULING RECYCLED WATER 3-12
3.13 TEMPORARY/EMERGENCY CONNECTIONS TO THE POTABLE SYSTEM 3-12
3.14 ADDITIONAL RESTRICTIONS ON THE USES OF RECYCLED WATER 3-13

SECTION 4 FACILITIES DESIGN AND CONSTRUCTION 4-1

4.1 DESIGN GUIDELINES FOR OFFSITE AND ONSITE FACILITIES 4-1
4.2 OFFSITE RECYCLED WATER FACILITIES 4-1
4.3 ONSITE RECYCLED WATER FACILITIES 4-5
4.4 RECYCLED WATER FOR CONSTRUCTION USE 4-7
4.5 SUBMITTALS 4-8
4.6 RECYCLED WATER GENERAL NOTES 4-11
4.7 RECORD (“AS-BUILT”) DRAWINGS 4-14
4.8 RECYCLED WATER INSPECTION PROCEDURES 4-14

SECTION 5 FACILITIES OPERATION 5-1

5.1 OFFSITE RECYCLED WATER FACILITIES 5-1
5.2 ONSITE RECYCLED WATER FACILITIES 5-1
5.3 POSTING APPROVED USE AREAS 5-3

SECTION 6 MONITORING AND INSPECTION 6-1

SECTION 7 RECYCLED WATER CONNECTION, METER, AND SERVICE CHARGES 7-1

SECTION 8 CUSTOMER’S GUARANTEE DEPOSIT 8-1

SECTION 9 RECYCLED WATER SERVICE 9-1

9.1 ESTABLISHMENT OF RATES 9-1
9.2 CHANGE OF RATES 9-1
9.3 DISTRICT CHARGE 9-1

9.4 RECYCLED WATER METER 9-1
9.5 BILLING 9-2
9.6 PAYMENT OF RECYCLED WATER BILLS 9-2

SECTION 10 SEVERABILITY 10-1

SECTION 11 ENFORCEMENT AND PENALTIES 11-1

11.1 GENERAL 11-1
11.2 INTERIM DISCONTINUATION OF RECYCLED WATER SERVICE 11-2
11.3 PERMANENT REVOCATION 11-3

SECTION 12 INCORPORATION BY REFERENCE 12-1

Appendices

Appendix A – Application for Recycled Water Services
Appendix B – Checklist / Action Request Form for Obtaining Recycled Water Service
Appendix C – Status of Application for Recycled Water Service
Appendix D – Elsinore Valley Municipal Water District (EVMWD) Permit for Recycled Service
Appendix E – EVMWD Valve Box Details
Appendix F – EVMWD Standard Backflow Prevention Assembly Details
Appendix G – EVMWD Standard Blow-Off and Air and Vacuum Assembly Details
Appendix H – EVMWD Recycled Water Controller Notification
Appendix I – EVMWD Recycled Water Site Inspection Report

SECTION 1
INTRODUCTION

1.1 GENERAL

The Elsinore Valley Municipal Water District (EVMWD) is located in the City of Lake Elsinore in Riverside County. EVMWD provides wastewater collection and treatment for the City of Lake Elsinore and other sewered developments in the EVMWD service area, including the adjacent unincorporated communities of Wildomar and Lakeland Village. EVMWD owns and operates several wastewater reclamation plants, which treat domestic wastewater to the State's Title 22 quality standards for recycled water use.

The California Department of Health Services (DHS) is required to establish uniform statewide recycling criteria for each type of recycled water use to protect public health. State law requires regional water quality control boards to issue water reclamation requirements or a master water reclamation permit based on the DHS statewide criteria and other permit conditions on a case-by-case basis.

EVMWD's recycled water use is regulated by the California Regional Water Quality Control Board (RWQCB), Santa Ana Region, subject to a master reclamation permit. California Water Code Section 13510-12 establishes a state policy to encourage the use of recycled water. Use of recycled water is based on the ability to adequately treat domestic wastewater to meet the requirements, set forth in Division 4, Chapter 3 of Title 22 of the California Code of Regulations ("Title 22").

The following Rules and Regulations ("Rules") govern the distribution and use of recycled water for landscape irrigation and other permitted non-potable uses.

District approval of any proposed use will be contingent upon DHS approval as required. Only those uses specified in a Recycled Water Permit as defined in Section 2 are authorized uses.

Recycled water may only be used in approved areas. District approval of any proposed use area will be contingent upon regulatory agency approval as required. Only those use areas specified in the Permit are approved use areas.

The use of "gray water" is expressly excluded from these Rules.

1.2 POLICY

The State of California through its Water Code Section 13510 encourages the development of facilities to recycle water, which formerly contained wastes, to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state. Further, Water Code Section 461 sets forth the policy of conserving

all available water resources by requiring the maximum reuse of wastewater for beneficial use.

EVMWD's newly adopted Water Recycling Ordinance sets forth the District's policy that recycled water determined to be available pursuant to Section 13550 of the Water Code shall be used for non-potable uses within designated Recycled Water Use Areas within the District's jurisdiction. This policy will apply wherever there is not a higher alternative or better use for the recycled water, if its use is economically justified, financially and technically feasible, and consistent with legal requirements, preservation of public health, safety and welfare, and the environment.

1.3 PURPOSE

These Rules establish procedures for the distribution and use of recycled water by EVMWD within the District's designated Recycled Water Use Areas. Because recycled water is considered unsafe for human consumption, it is important that these Rules contain provisions which will minimize or eliminate the possible misuse of recycled water.

1.4 INTERPRETATION

These Rules shall be interpreted according to the purpose and policy of these Rules and the definitions set forth in Section 2 herein. To the extent these Rules depend upon or incorporate Title 22, any amendment thereto shall be incorporated by reference in these Rules accordingly.

SECTION 2
DEFINITIONS

The terms hereinafter set forth, unless otherwise specified, shall be defined as follows:

AIR-GAP SEPARATION shall mean a physical break between a supply line and a receiving vessel. The air-gap shall be at least double the diameter of the supply pipe, measured vertically above the flood rim of the vessel, and in no case less than one inch. The design shall be to the satisfaction of the Elsinore Valley Municipal Water District, and the regulatory agencies.

AMERICAN WATER WORKS ASSOCIATION ("AWWA") shall mean the American Water Works Association.

APPLICANT shall mean any person, firm, corporation, association, agency or authorized representative who applies for recycled water service under the terms of these Rules.

APPLICATION RATE shall mean the rate at which recycled water is applied to an irrigation or construction area expressed in inches per hour (or cm/hr).

APPROVED BACKFLOW PREVENTION DEVICE shall mean a device installed to protect the potable water supply from contamination and pollution as approved by DHS and the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, School of Engineering ("USC").

APPROVED USE AREA shall mean a site, with defined boundaries, designated in a Recycled Water Permit issued by the District to receive recycled water for an approved use.

APPROVED USE shall mean the use of recycled water in a manner, and for such purpose, According to a Recycled Water Permit issued by the District and in compliance with any and all applicable regulatory agency requirements.

AS-BUILT DRAWINGS (see RECORD DRAWINGS).

AUTOMATIC SYSTEM shall mean an electronic, electrical or mechanical system, which includes automatic controllers, valves, and associated equipment required for the programming of effective water application rates when using recycled water.

COMMERCIAL USE shall mean the use of recycled water for toilets, urinals, decorative fountains, and similar non-residential uses.

CONNECTION FEE shall mean a charge imposed by the District for establishing or reestablishing recycled water service, including construction and/or installation of offsite facilities.

CONSTRUCTION USE shall mean the approved use of recycled water for construction activities such as soil compaction, mixing concrete, and dust control during grading.

CONTRACTOR shall mean a person, persons, or firm entering into a legal agreement with the Applicant, Owner, or the District for the performance of work on all or any portion of facilities subject to these regulations.

COUNTY shall mean the County of Riverside, California.

CROSS-CONNECTION shall mean any unprotected actual or potential connection between potable water system used to supply water for drinking purpose and any source or system containing unapproved water or a substance that is not or cannot be approved as safe and potable.

CROSS-CONNECTION SPECIALIST shall mean a person certified by California-Nevada Section of AWWA or approved equivalent who coordinates and monitors a cross-connection inspection and control program to prevent contamination of the potable system used to supply water for drinking purpose by any source or system containing unapproved water or a substance that is not or cannot be approved as safe and potable.

CUSTOMER shall mean any person, firm, corporation, association, or agency that holds a District Recycled Water Permit, including any agent or authorized representative thereof.

DEPARTMENT OF HEALTH SERVICES shall mean the Department of Health Services of the State of California ("DHS").

DESIGN AREA shall mean a site, with well-defined boundaries, proposed to receive recycled water for an approved use, as delineated in the application for recycled water service.

DIRECT BENEFICIAL USE shall mean the use of recycled water, which has been transported from the point of treatment or production to the point of use without an intervening discharge to waters of the State.

DISCHARGE shall mean any release or distribution of recycled water to a sewerage system, or storm drain system, any water of the State, or any other release or distribution other than for a permitted use.

DISTRICT CHARGE shall mean a one-time connection charge determined from the Schedule of Rates of the District, and payable by the Customer for obtaining recycled water. The purpose of this charge is for the expansion of recycled water facilities to serve the customers.

DISTRICT shall mean the Elsinore Valley Municipal Water District, California.

GENERAL MANAGER shall mean the General Manager of the Elsinore Valley Municipal Water District or his/her designee.

GPH shall mean the rate of recycled water delivery in gallons per hour.

GPM shall mean the rate of recycled water delivery in gallons per minute.

GRAY WATER shall mean untreated wastewater other than toilet and/or urinal ("sanitary") wastes.

HCF shall mean hundreds of cubic feet.

INDUSTRIAL PROCESS WATER shall mean recycled water used in industrial facilities for non-potable uses including rinsing, washing, cooling, circulation, or boiler feed.

INFILTRATION RATE shall mean the rate at which water will penetrate the soil surface and enter the soil profile, expressed in inches per hour or centimeters per hour.

INSPECTOR shall mean any person authorized by the District to perform inspections of either onsite or offsite facilities or areas prior to construction, during construction, after construction and during operation.

NON-POTABLE WATER shall mean water not satisfactory for drinking, culinary and domestic purposes or that does not meet the requirements of the health authority having jurisdiction. Non-potable water includes recycled water.

NON-RESTRICTED RECREATIONAL IMPOUNDMENT shall mean an impoundment of recycled water in which no limitations are imposed on body-contact water recreational activities.

OFFSITE FACILITIES shall mean facilities under the control of the District including, but not limited to, recycled water transmission mains, recycled water pipelines, reservoirs, pumping stations, treatment plants, and other appurtenances and property. For recycled water service, offsite facilities shall be those upstream of the point of connection with the Customer's onsite facilities, normally ending with the meter tailpiece.

ONSITE FACILITIES shall mean the facilities under the control of the Applicant, Owner or Customer including, but not limited to industrial water systems, landscape irrigation systems and agricultural irrigation systems. For recycled water service, the onsite facilities shall be those downstream of the recycled water service connection, which shall normally begin with the meter tailpiece.

OPERATIONS PERSONNEL shall mean any employee of the Owner, or Customer, whether permanent or temporary, or any contracted worker whose regular or assigned work involves the supervision, operation, or maintenance of equipment, facilities, or a system using recycled water.

PERMIT (see RECYLED WATER PERMIT)

PERMITTED CAPACITY OF RECYCLED WATER shall mean the amount of recycled water that the Customer is permitted to have for the use area specified in the Recycled Water Permit.

POINT OF CONNECTION shall mean the point of connection of the Customer's onsite facilities to the offsite facilities of the recycled water distribution system.

PONDING shall mean the retention of recycled water on the surface of the ground or other man-made surfaces, other than the approved use area, for a period of time following the cessation of an approved recycled water use activity such that a hazard or potential hazard to public health results.

POTABLE WATER shall mean water that is pure, wholesome and suitable for human consumption, and which conforms to the latest edition of the U.S. Environmental Protection Agency National Primary Drinking Water Regulations, the California Safe Drinking Water Act, and any other applicable standards.

RECORD DRAWINGS shall mean approved mylar drawings that correctly show the completed onsite facilities and/or offsite facilities as constructed or modified. These drawings shall show all potable water, recycled water and sewer lines, and other utility lines.

RECYCLED WATER FACILITIES shall mean systems, structures, appurtenances, etc., used in the treatment, storage, pumping, transmission and distribution of recycled water.

RECYCLED WATER SERVICE CONNECTION shall mean the connection of the Customer's recycled water line to the District recycled water service line.

RECYCLED WATER SERVICE LINE shall mean the District's pipeline between its recycled water distribution system and the point of connection.

RECYCLED WATER SITE SUPERVISOR shall mean a person designated and authorized by the Owner or Customer and who shall operate the onsite facilities and irrigation systems and be responsible for the application of the guidelines, criteria, and standards of these Rules. The designated supervisor shall be trained to operate and maintain the onsite facilities and irrigation system, and to assume the responsibilities outlined in Section 5.2.2 of these rules. The recycled water site supervisor must be certified by a District recognized recycled water site supervisor training program.

RECYCLED WATER DISTRIBUTION LINES shall mean recycled water distribution pipelines and appurtenances acquired or constructed and owned by the District, and used for the conveyance of recycled water between the recycled water transmission mains and/or reservoirs, and the recycled water service connections and/or appurtenances.

RECYCLED WATER shall have the definition set forth in Division 4, Chapter 3 of Title 22 and shall mean water which, as a result of treatment of wastewater, is suitable for a direct beneficial use or a controlled use that otherwise would not occur. "Gray water" is specifically excluded from this definition.

RECYCLED WATER PERMIT ("PERMIT") shall mean a permit issued by the District to a recycled water service Applicant after the satisfactory completion of the service application procedures set fourth in these Rules. The Permit constitutes a service agreement, which legally binds the Customer to all conditions of the Permit and these Rules.

RECYCLED WATER TRANSMISSION MAINS shall mean major recycled water pipelines and appurtenances acquired or constructed and owned by the District, used to convey recycled water between the water reclamation plant and pump station or other source, to a reservoir and/or the recycled water distribution mains.

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (RPP) shall mean a backflow prevention device incorporating not less than two check valves, an automatically operated differential relief valve located between the two check valves, a tightly closing shut-off valve on each side of the check valve assembly, and equipped with necessary test cocks for testing as approved by the DHS and the Foundation for Cross-Connection Control and Hydraulic Research, School of Engineering.

REGULATORY AGENCIES shall mean those public entities legally constituted by federal, state, and local statutes to protect public health and water quality.

RESTRICTED RECREATIONAL IMPOUNDMENT shall mean a body of recycled water in which recreation is limited to fishing, boating, and other non-body-contact water recreation activities.

RUN-OFF shall mean the movement of recycled water beyond the boundaries of the designated use area along the surface of the ground or other natural or man-made surfaces including, but not limited to, pedestrian walkways, streets, playground surfaces, grassy slopes and drainage courses.

RWQCB shall mean the Regional Water Quality Control Board of the State of California, Santa Ana Region.

SCHEDULE OF RATES shall mean a schedule containing fees, charges, and deposits determined and issued by the District for the uses and services of recycled water.

SEPARATION shall mean the horizontal and/or vertical distance between a recycled water pipeline and a parallel potable water pipeline, sewer pipeline, or a sludge force main. The separation shall be the clear distance between the outside faces of the pipelines in question.

SPRAY IRRIGATION shall mean application of recycled water to land to maintain vegetation or support growth of vegetation by spraying it from sprinklers or orifices in piping.

SSPWC shall mean the latest edition of the Standard Specifications for Public Works Construction, including the Regional Supplement Amendments of the County of Riverside, commonly known as the "Green Book".

SURFACE IRRIGATION shall mean application of recycled water by means other than spraying.

UNAUTHORIZED DISCHARGE shall mean any release of recycled water that violates these Rules or any applicable federal, state, or local statutes, regulations, ordinances, contracts or other requirements.

USE AREA: An area where recycled water is used.

WASTEWATER shall mean water or a combination of water and water-carried wastes discharged into or permitted to enter a public sewer.

WINDBLOWN SPRAY shall mean dispersed, airborne liquid particles of recycled water resulting from the use or discharge of recycled water and capable of being transmitted through the air to locations other than those for which the direct application of recycled water was intended.

SECTION 3
RECYCLED WATER SERVICE REQUIREMENTS

3.1 SERVICE CONDITIONS

The District shall control and schedule recycled water distribution to Customers. The provision of recycled water service and the use of recycled water by any Customer shall be subject to all the terms and conditions of these Rules.

3.2 APPLICATION PROCEDURE

3.2.1 Filing Application For Recycled Water Service

The Applicant shall meet with the District at the earliest possible date to determine whether the design area is within the District's service area. At this time, the availability of recycled water and the proximity of the site to the District's recycled water system will be reviewed.

An Applicant meeting the requirements for recycled water service seeking a Permit shall file an application for recycled water with EVMWD.

The application form shall contain detailed information concerning the Applicant as follows:

a. The Applicant's relationship to the property for which recycled water service is requested. In cases where the Applicant is not the legal owner of the property, the legal owner shall consent to the application on a supplemental notarized form.

b. The address and legal description of the property.

c. The purpose for which the property will be used.

d. The proposed use of recycled water.

e. The proposed use area on the property.

f. The Customer's estimated service requirements (flow, pressure, water quality, etc.) for recycled water.

g. A designated contact that will become the Recycled Water Site Supervisor.

h. Any special condition for service pursuant to these Rules.

The *Application Form for Recycled Water Service* is attached as Appendix A; the Checklist/Action Request Form for Obtaining Recycled Water Service is attached as

Appendix B; the Status of Application for Recycled Water Service is attached as Appendix C; Permit For Recycled Water Service is Appendix D.

The application form shall be accompanied by plans and specifications per Section 4.5, delineating the proposed recycled water use area, the proposed location, size, and type of all recycled water service connections and onsite facilities, and any areas from which recycled water must be specifically excluded.

3.2.2 Applicant Compliance with Regulatory Requirements

The Applicant for recycled water shall agree to comply with the requirements of these Rules and any and all applicable federal, state and local statutes, ordinances, regulations and any other requirements.

3.2.3 Application Fees and Other Charges

Application fees, deposits, and capacity charges shall be paid in accordance with the District schedule of rates and shall be subject to all terms and conditions of these Rules.

3.3 PERMITS

3.3.1 Permit Issuance

The District shall review the application and conduct any necessary investigation to determine whether the District will provide recycled water service. The District may prescribe written requirements including but not limited to facility design, construction, operation and conditions of service. The District shall review plans of the onsite recycled and non-recycled water systems and conduct a field inspection before the Permit is granted. (See also Section 4.5 below).

The Permit shall be issued upon approval by the District and DHS. The Permit shall incorporate all the provisions of these Rules by express reference, and any additional requirements prescribed by the District. The Permit shall not be effective until construction of all required facilities is completed, tested, and inspected, and the District determines the Applicant is in compliance with all Permit conditions.

The Permit shall specify all allowable uses of recycled water and all restrictions thereon.

The Permit shall state the quantity of recycled water available to the Customer under the Permit. Delivery of the full quantity is subject to the District's supply capabilities. The District shall make a good faith effort to supply full permitted quantity, but shall be held harmless in the event that such a volume is not available for any reason, including, but not limited to, reduced plant production, increased demand, repairs to facilities, or regulatory compliance.

A copy of the Customer's current Permit must be available for review at all times, clearly posted at the use site, and/or on file at the Customer's office.

3.3.2 Permit Renewal

The term of a Permit shall extend indefinitely and shall not require renewal, except that the District reserves the right to suspend or terminate the Permit, or to modify its terms and conditions, if any of the following occurs:

a. A change of the owner, tenant, Customer or occupant of the property covered by the Permit.

b. A change in the use of the property covered by the Permit.

c. A change in the water quality characteristics of recycled water.

d. A violation of these Rules and/or other applicable regulations.

e. A change in federal or state regulations rendering performance by the District to be impractical or impossible.

3.4 ESTABLISHING SERVICE

3.4.1 Request for Service Connection

Following the completion of construction and/or installation of the recycled water facilities as applicable, the Customer shall request the District to install the service connection.

The request for service connection shall be accompanied by all required fees for installation and connection as indicated in the current schedule of rates and as appropriate for the size and type of service.

3.4.2 Request for Service Start-up

Following final District acceptance of the onsite facilities by the District, the Customer shall request service start-up. The request for start-up shall be accompanied by any outstanding cash payments as per the current schedule of rates in addition to those indicated in Section 3.2.3.

3.4.3 Temporary Use of Potable Water

At the discretion of the District, potable water may be made available to a Customer on a temporary basis, until recycled water is made available. In such an event, the Customer will be charged the potable water rate by the District. Before the Customer receives temporary potable water service, a Permit must be obtained. Prior to commencement of temporary potable service, an inspection of the onsite facilities shall be conducted by the District to verify that the facilities comply with the Permit. Upon verification of compliance, the Customer shall request service start-up of temporary potable water service. A customer supplied Reduced Pressure Principle Backflow Prevention Assembly (RPP) must be used in any connection for temporary potable water.

3.4.4 Suspension of Service

The recycled water service is subject to suspension or termination any time the recycled water does not meet regulatory requirements at the terminal point of the District's reclamation plant.

3.5 CONDITIONS FOR RECYCLED WATER SERVICE

Permits for recycled water service and any connections for service made, as provided in the Permit issued under these Rules, shall be subject to the following conditions:

3.5.1 Adherence to Permit Conditions

Except as otherwise provided herein, all recycled water will be provided to the Customer in the condition and quantity specified in the Permit.

3.5.2 Control of Facilities (Liability)

a. The District shall have control of and maintain and repair offsite recycled water service lines and meters. The Customer shall repair and maintain the recycled water service connections, in good working condition at or beyond the point of connection, and all onsite facilities. The District shall be entitled to inspect and test all connections and onsite facilities in the manner specified in Section 6.

b. The Customer shall implement a preventative maintenance program designed to ensure the continued operation of all system elements complies with these Rules. The Customer shall be responsible for furnishing all operations and maintenance personnel with the system operating and maintenance instructions and record drawings to ensure proper system operation in accordance with system design and these regulations. At least one complete set of this information shall be kept onsite or in the nearest field office or maintenance building established by the Customer. The Customer is responsible for properly disseminating this information to all appropriate operations personnel.

c. The Customer shall indemnify and hold harmless the District, its employees, and its agents from and against all claims, damages, losses or expenses arising from the use of recycled water under the Permit, from the use of facilities by which recycled water is conveyed, or from the inability or failure of the District to provide recycled water.

3.5.3 Extension of Distribution Mains

Unless otherwise provided by written agreement between the Customer and the District, the Customer shall pay for all onsite facilities, including their installation, as well as for recycled water service lines and extension of recycled water transmission and distribution mains in order to provide recycled water service to the Customer, in accordance with the provisions of these Rules and Regulations.

3.5.3.1 Reimbursement Agreement

Where an Applicant requests recycled water service in areas where the District does not have existing recycled water transmission and distribution mains, the Applicant's request for recycled water service shall be addressed as follows.

If the District determines it is necessary to extend transmission and distribution mains to areas not included within a subdivision or area proposed by the Applicant in a Permit application, or where the District determines that oversized or additional facilities may be needed to accommodate future development, the District may grant the Permit contingent upon the Applicant financing and developing, at its sole cost and expense, such oversized service lines and facilities. In this event, the District and Applicant may enter into a reimbursement agreement whereby District will require subsequent Customers benefiting from such improvements to pay to the District an amount, to be determined by the District in accordance with the common practice, which represents the subsequent Customers' proportionate share of the costs of the improvements. The District will then pay to Applicant the amounts collected from the subsequent Customers. A reimbursement agreement may, however, contain a provision stating that the District's obligation to either directly reimburse the Applicant or collect such amounts from subsequent Customers pursuant to Section 3.5.3.1 shall expire in a given number of years from the date of execution of such reimbursement agreement.

3.5.3.2 Participation Agreement

Where the District intends to construct and develop a planned capital improvement project according to a planned timetable, and where the Customer desires to undertake to complete such planned capital improvement project prior to the District's completion date, the Customer and the District may enter into a participation agreement whereby the Customer shall agree to complete the planned capital improvement project in accordance with such design requirements and specifications of the District. The participation agreement shall provide for the equitable sharing of the costs of the capital improvement project between the Customer and the District in accordance with such mutually agreed upon terms.

3.5.4 Prohibition of Changes

The Customer shall not make any changes in, or additions to, the recycled water system without prior notification to, and permission from, the District. Any changes or alterations to existing onsite facilities, whether intentional or unintentional, shall be reported immediately to the District.

3.5.5 Services to Common Areas

The District reserves the right to supply recycled water to contiguous areas under single ownership through a single recycled water service connection.

Common areas owned or operated by homeowners' associations or similar cooperatives should have only one service connection whenever it is practical, and will be operated as a single ownership.

3.5.6 Subdividing an Approved Use Area

a. When a property provided with a recycled water service connection and water meter is subdivided, such connection and meter shall be considered as serving the lot or parcel of land on which the meter is located. Additional recycled water distribution mains and/or service lines will be required for all subdivided areas in accordance with these Rules, unless the subdivider provides covenants, conditions, and restrictions ("CC&R") properly recorded with the County Recorder for the operation of onsite recycled water facilities serving more than one lot, and also provides easements for recycled water distribution mains and/or service lines or shows easement locations in the CC&Rs.

b. All recycled water used on any premise where a meter is installed must pass through the meter. Customers shall be charged for all recycled water passing through the meters.

c. Every recycled water service connection and meter assembly shall include a curb cock or wheel valve, as approved by the District (Valve Box detail provided in Appendix E), on the inlet side of the meter, which shall be used exclusively by the District for controlling the recycled water supply through the recycled water service line. If the curb cock or wheel valve is damaged by the Customer or the Customer's use, repair and/or replacement by the District shall be at the Customer's expense.

d. Each Customer shall restrict the use of recycled water to those uses set forth in the Permit for recycled water services approved by the District.

3.5.7 Temporary Discontinuation of Recycled Water Service

By reason of circumstances beyond the control of the District, or in order to protect the facilities of the District, or for the protection of public health, safety and welfare of the residents or property owners of the District, recycled water service may be terminated under the conditions set forth below:

a. On a temporary or permanent basis in the manner provided for in Sections 11.2 and 11.3, respectively.

b. On a temporary basis, at any time the recycled water at the terminal point of the District's water reclamation plant takeoff, does not meet the requirements of the regulatory agencies, including but not limited to those prescribed in Title 22 and any permit issued by the RWQCB. Recycled water service would in such cases, be renewed at such time that recycled water at the terminal point of the water reclamation plant would again meet the requirements of the regulatory agencies or at

such time that the District would supplement the recycled water system from the potable water system in the manner provided by Section 3.4.3.

c. When the District determines that a water shortage exists or is threatened, which prevents further recycled water service.

d. Whenever such action is warranted pursuant to one of the proceedings or actions taken by the District pursuant to Section 11 of these Rules.

3.5.8 Conditions of Pressure and Service

Pressure and service shall be provided on an "as available" basis, at the Customer's meter. The District shall state the available pressure of the system in its design guide. For dual plumbed sites, optimally, the on-site recycled water supply pressure should be operated at least 10 psig lower than the potable water system pressure. All Customers shall hold the District harmless from any and all damages and liabilities caused in whole or in part by pressure conditions, water quality variations, or interruptions in service. It shall be the Customer's responsibility to install booster pumps or pressure regulating valves to adjust pressure, if necessary.

3.6 SIZE AND LOCATION OF SERVICE CONNECTIONS

The District reserves the right to determine the size and location of recycled water service lines, service connections and meters, and shall also have the right to determine the kind and size of backflow prevention devices and any and all other appurtenances to the service.

The recycled water service lines shall be extended to a curb line, or property line of the Customer's property, abutting upon a public street, highway, road, or District easement in which recycled water distribution mains are installed.

3.7 ILLEGAL CONNECTIONS

No person shall make any connection to recycled water facilities of the District without a Permit from the District. Penalties for violations may be assessed according to Section 11 of these Rules.

3.8 METER TESTING

Any Customer may request the District to test the accuracy of its recycled water meter. In such an event, the Customer shall make a request to the billing section of the District for a Meter Accuracy Test. The meter testing shall be performed in conformance with the District's Administrative Code.

3.9 CROSS-CONNECTION PREVENTION

3.9.1 Purpose

The primary purpose of this Section is to protect the District's potable water supply from possible contamination by prohibiting and preventing cross-connections between the potable water distribution system and the recycled water distribution system, in accordance with Chapter 5, Title 17 of the California Code of Regulations ("Title 17"), and between the recycle water distribution system and on-site plumbing, in accordance to Title 22 of the California Code of Regulations ("Title 22"). The secondary purpose is to protect the recycled water system from other contaminants.

These provisions are in addition to, and not in lieu of, the controls and requirements of other regulatory agencies, such as DHS.

3.9.2 Backflow Prevention

Regulations governing backflow prevention devices are intended to protect the District's potable water supplies and are not intended to protect Customers from potential hazards of cross-connections in the Customer's onsite facilities.

a. District approved backflow prevention for the District's potable water supply shall be provided by the Customer in accordance with the specifications of and as required by the District's latest edition of Standard Specifications and Drawings.

b. Provision, installation, maintenance and inspection of backflow prevention devices shall be the sole responsibility and duty of the Customer, and shall be performed at Customer expense. Inspection of backflow prevention devices shall be performed at least once a year, or more often in those instances where successive inspections indicate repeated failures. These devices shall be inspected, repaired, overhauled or replaced at the expense of the Customer whenever they are found to be defective. Records of such tests, repairs and overhauls shall be kept by the District, and such records shall be made available to any concerned regulatory agency upon request.

Installation and inspection of backflow prevention devices shall be performed by a certified tester at the Customer's expense. The certified tester shall submit to the District the original inspection reports as proof of compliance. All inspection and testing shall be performed to the District's satisfaction.

3.9.3 Type of Protection

The level of protection required is relative to the degree of hazard that the District determines exists on the premises served. Listed in increasing levels of protection, the following protective devices may be required: Reduced Pressure Principle Backflow Prevention Device (RPP) and air-gap separation. The Customer may choose a higher level of protection than required by the District. Minimum types required, relative to various situations, are listed below. The majority of situations require a RPP be installed on the potable water supply,

immediately downstream of the supply meter. Situations not listed shall be evaluated on a case-by-case basis and the appropriate level of protection required shall be determined by the District in consultation with DHS.

3.9.3.1 Degree of Hazard

a. On premises where the District's potable water system is used to supplement the recycled water supply, an air-gap separation shall be provided.

b. On premises where recycled water is used and there is no interconnection with the potable water system, a RPP separation may be used instead of an air-gap separation if approved by the District and DHS.

c. On premises where hazardous materials and toxic substances are stored, handled, or produced in any manner in which the substances may enter either the potable water and/or the recycled water systems, an air-gap separation shall be provided for the affected system. A RPP may be provided in lieu of an air-gap separation, if approved by the District and DHS.

d. On premises where entry is restricted so that cross-connection inspections cannot be made with sufficient frequency or at sufficiently short notice to assure that cross-connections do not exist, an air-gap separation shall be used.

e. On premises where there is a repeated history of cross-connections being established or re-established, an air-gap separation shall be used.

3.9.3.2 Color-Coding on Dual or Multiple Water Systems:

Where any property subject to recycled water service is served by or contains dual or multiple water systems and piping, the exposed portion of recycled water pipelines, valves, and other fittings shall be colored purple, banded or marked to distinguish clearly which is used for potable water and which is used for recycled water (see also Section 4). In addition, all new unexposed recycled water pipes installed on any such property shall be similarly colored purple and marked: "RECYCLED WATER – DO NOT DRINK" with wording facing up. All recycled water appurtenances, facilities, and valves shall be posted or tagged with the wording "RECYCLED WATER - DO NOT DRINK".

3.9.4 Customer's Designated Recycled Water Site Supervisor

The operation and surveillance of onsite systems shall be under the management of the Customer's Recycled Water Site Supervisor. The use site supervisor shall attend a District approved training program. The site supervisor or their representative shall be available during normal working hours, at an address listed with the District for the purpose of hosting inspection tours or for discussing operational aspects of the system. The designated supervisor shall be available via telephone at a number listed with the District for emergency off-hours contact.

The customer's Recycled Water Site Supervisor, whose qualifications and responsibilities are discussed in Section 5.2.2, shall be responsible for the prevention of any cross-connections on the property. In the event of a cross-connection to the potable water system, the Customer's Recycled Water Site Supervisor shall immediately shut off the main recycled water supply valve and depressurize the recycled water system to prevent further mixing with the potable supply, and shall also immediately advise the District of the occurrence of the cross-connection. The District will advise DHS so that appropriate measures may be taken to control any contamination or pollution.

The Customer shall assume all responsibilities to prevent cross-connections between the on-site facilities and any potable water supply, and shall indemnify and hold the District harmless from and against any claim of damage or loss which is caused or is alleged to have been caused, in whole or in part, by cross-connections of on-site facilities. The Customer shall be subject to these rules, including but not limited to, those allowing the District or DHS to inspect and approve all on-site recycled water facilities as provided in Sections 5.2.1. and 6.

3.10 CONVERSION TO/FROM RECYCLED WATER SERVICE

3.10.1 Conversion to Recycled Water Service

Proposals to construct a new onsite recycled water system or to retrofit an existing potable or non-potable system to serve recycled water for irrigation purposes must satisfy the requirements of these Rules. Applicants that propose to use recycled water for industrial applications or for other special uses, may be required to supply additional information on a case-by- case basis.

When a Customer seeks to convert any existing potable water irrigation system to a recycled water irrigation system, the proposed recycled water system shall be investigated for the District at Customer expense. The District and DHS shall review the as-built drawings and investigation reports, and determine the measures necessary for the existing system to comply with these Rules. The Applicant shall cooperate with the District in its efforts to obtain information, review existing documents, and inspect the onsite facilities. The Customer will be responsible for all costs associated with the conversion to recycled water system. The District or DHS may deny issuance of a Permit if either determines that the proposed conversion cannot be safely made.

3.10.1.1 Installation of Backflow Prevention Device:

The Customer shall install approved backflow prevention devices on all potable water or other water meter connections.

3.10.2 Conversion from Recycled Water Service

If, due to onsite failure of the recycled water system or use violations, the District determines it necessary to convert the onsite facilities from recycled water supply to a potable water system or other water supply, it shall be the responsibility of the Customer to pay all costs for such conversion, unless determined otherwise by the District. Conversion costs shall include, but may not be limited to the following:

3.10.2.1 Isolation of the recycled water supply

Service shall be removed and plugged by the District at the recycled water main, or abandoned in a manner approved by the District.

3.10.2.2 Installation of Backflow Prevention Device

The Customer shall install approved backflow devices on all potable water or other water meter connections.

3.10.2.3 Removal of Existing Fittings

The Customer shall be responsible for removal and replacement of all fittings with approved fittings for potable water.

3.10.2.4 Hydraulic Testing and Disinfection

The Customer shall be responsible for hydraulic testing and disinfection of the converted pipeline, service line, connection, etc. prior to initiating the connection and use of the potable water supply.

3.10.2.5 Notification

The Customer shall notify all personnel involved with the operation of the abandoned recycled water service.

3.10.2.6 Warning Labels/Signs

The Customer shall be responsible for the removal of all warning signs and labels and repainting.

3.10.2.7 Installation of Potable Water System

Provision and installation of all potable water lines and facilities and any capacity fees due therefor shall be the responsibility of the Customer.

3.11 AUTHORIZED USES OF RECYCLED WATER

The uses of recycled water may include, but are not limited to, agricultural irrigation, commercial use, construction use, enhancement of wildlife habitat, industrial processes,

landscape irrigation, and recreational impoundment. Determinations as to specific uses to be allowed shall be in accordance with Title 22. The District may, at its discretion, set forth specific requirements as conditions to providing such services and/or require specific approval from the appropriate regulatory agencies.

The use of recycled water in swimming pools is **not permitted.**

The use of recycled water for street cleaning operations is **not permitted.**

3.12 SCHEDULING RECYCLED WATER

The District will control and schedule the delivery of recycled water as necessary to maintain acceptable working pressure in the recycled water system and to safeguard the public health.

3.13 TEMPORARY/EMERGENCY CONNECTIONS TO THE POTABLE WATER SYSTEM

In the event of a present or impending emergency whereby full recycled water service is not available, the District may approve a temporary connection to the potable water system. Such temporary connection shall be made in accordance with Sections 4 and 5 of these Rules. The decision to provide temporary service from the potable water system shall be at the sole discretion of the District, and the District shall maintain and operate all connections. Any cost associated with such temporary connections shall be incurred by the Customer.

Before such temporary connection is made, the portion of use area where potable water is to be supplied shall be isolated by an air-gap separation from the remainder of the recycled water system. This isolation shall occur at either individual services or on the offsite system, as determined by the District. A District-approved backflow prevention device shall be installed on the potable water lines in accordance with Section 3 of these Rules and all applicable regulations of the governing agencies. The emergency connection shall be removed before connection is re-established to the recycled water system. Re-establishment of recycled water service must be inspected and approved by a District inspector prior to resuming delivery of recycled water.

The District may approve a temporary potable water connection for a Customer's recycled water system, without an air-gap. The temporary connection shall be designed to allow only one water source to serve the Customer's system at any given time. A District-approved backflow prevention device and meter shall be installed on the potable water service.. At no time shall the potable water system be connected to a system simultaneously served by a non-potable source. To ensure separation of the potable and recycled water supplies, the recycled water meter(s) shall be pulled prior to connecting the potable water supply.

The District, at its own discretion, may provide potable water in lieu of recycled water.

3.14 ADDITIONAL RESTRICTIONS ON THE USES OF RECYCLED WATER

3.14.1 Run-off and Ponding

a. The onsite facilities shall be designed not to exceed the peak moisture demand of the plant materials used within the design area and to apply irrigation water in a manner compatible with the infiltration rates of the approved use area.

b. Conditions that directly or indirectly cause a run-off of recycled water outside of the approved use area; cause ponding of recycled water; or permit windblown spray to pass outside of the approved use area, whether by design, construction practice, or system operation, shall be eliminated or controlled to the greatest extent possible.

3.14.2 Protection of Drinking Fountains and Public Facilities

Any and all drinking fountains located within an approved use area shall be protected from contact with recycled water, whether by windblown spray or by direct application through irrigation or other approved uses. Protection shall be by relocation or isolation with a protective structure.

Recycled water irrigation systems shall not be installed near food establishments or public facilities such as picnic tables. Design of systems near such facilities shall require DHS approval.

3.14.3 Hose Bibbs and Quick Couplers

Hose bibbs shall not be installed on the onsite recycled water system regardless of style, construction or identifications. The use of quick couplers is at the District's sole discretion and requires a separate plan review by the District. Only quick couplers with approved color and identification will be allowed.

3.14.4 Fire Hydrants

No fire hydrants or other fire services connections may be installed on any onsite system that presently operates or is designed to operate with recycled water.

3.14.5 Irrigation or Impoundment of Recycled Water near Wells

There shall be no irrigation with, or impoundment of recycled water within 100 feet of any well used for potable or irrigation water unless it is demonstrated to the satisfaction of the District and the regulatory agencies that special circumstances justify less distance. In all circumstances, the restrictions imposed by Title 22 shall apply.

3.14.6 Irrigation with Recycled Water near Residences Certain Public Places

No spray irrigation of any recycled water, other than disinfected tertiary recycled water, shall take place within 100 feet of a residence or where the public could be exposed in a manner similar to a park, playground, or schoolyard.

SECTION 4
FACILITIES DESIGN AND CONSTRUCTION

4.1 DESIGN GUIDELINES FOR OFFSITE AND ONSITE FACILITIES

Offsite recycled water facilities design, including plans and specifications, shall be supervised by an engineer registered with the State of California. The onsite recycled water facilities design, including the plans and specifications, shall supervised by appropriate professionals registered with the State of California, including a landscape architect, civil engineer or mechanical engineer. All recycled water facilities shall comply with Title 22, the AWWA (California-Nevada Section) Guidelines for Distribution of Non-potable Water, and the DHS Guidelines for Use of Recycled Water, and shall also comply with all the requirements, conditions and standards set forth in the current edition of the Standard Specifications for Public Works Construction including the Regional Amendments of the County, Elsinore Valley Municipal Water District's Standard Specifications and Drawings, the provisions of these Rules, and other applicable design standards and construction specification guidelines.

4.2 OFFSITE RECYCLED WATER FACILITIES

The costs to extend recycled water service shall be borne by the benefited property owners or the District as provided in Section 3.5.3.1 or Section 3.5.3.2 of these Rules. Such costs shall be in addition to other fees, deposits and charges.

4.2.1 Pressure Requirements

Service pressure requirements shall be determined by the District. The Customer shall design the onsite system to accommodate available pressure.

When a reasonable service pressure would not be available to onsite facilities, the Customer shall be responsible for correcting the situation. If available service pressure is too high, the Customer shall utilize pressure regulators downstream of the meter to obtain the correct pressure. If available pressure is too low, the Customer shall provide booster pumps to increase the pressure. For dual plumbed sites, a pressure regulator should be installed on the on-site recycled water system if the recycled water distribution pressure is equal to or above the potable system pressure. The pressure regulator on the recycled water system should be set at a value approximately 10 psi lower than the potable supply after the RPP backflow prevention device.

Whenever possible, the District will operate the recycled water system at a lower pressure than the potable water system.

4.2.1.1 Booster Pumps

Customers using booster pumps shall identify the pumping systems as recycled water, avoid release of recycled water in an uncontrolled manner, and provide proper drainage of the packing seal water. At least one sign in English and Spanish shall be posted on the premises of the booster pumps, which can be readily seen by all operations personnel working in the area.

4.2.1.2 Sealing Water

An air gap is required for potable sealing water on a recycled water pump.

4.2.2 Depth of Pipe Cover

The top of the pipe of transmission/distribution mains shall be a minimum of 3 feet below the finished grade unless approved otherwise. The depth of cover on service lines shall be in accordance with the District's Standards.

4.2.3 Pipe Separations to Other Utilities

The following separation criteria apply between recycled water pipelines and other utility pipelines.

4.2.3.1 Horizontal

A 10-foot separation of the recycled water pipeline shall be maintained at all times between parallel potable water pipeline and/or a sanitary sewer or sludge pipelines. Separation distance shall be measured from the outside diameter of the pipes or fittings. If a 10-foot separation is not possible, the approval for special construction requirements shall be obtained from the District and DHS prior to construction. Common trench construction is not permitted. In any situation, a horizontal separation of less than 4 feet shall not be allowed.

4.2.3.2 Vertical

On new systems, potable water, recycled water, and sewer lines shall be located from the ground surface in order of descending quality. Potable water shall be located above recycled water, which shall be located above sewer. Minimum vertical separation shall be one foot between top and bottom surfaces of pipes. Exceptions to this general rule are as follows:

a. On irrigation systems where intermittently pressurized recycled water lines (laterals) serve sprinkler heads, the potable water line(s) may be placed under the recycled water laterals. No special construction requirements are necessary provided that one-foot vertical separation is maintained.

b. On sites using pressurized irrigation laterals with valve-in-head sprinklers, the potable water line(s) may be placed under the recycled water laterals if additional protection

is provided for the potable line. Common practices include sleeving or automatic flow control/shut off devices installed and functioning properly on each lateral that crosses a potable line.

No additional special construction requirements are necessary provided that at least one foot vertical separation is maintained.

4.2.3.3 Pipe Crossings

As per the DHS Guidance Memo No. 2003-02, at places where potable and recycled water lines cross, either there should be no connection joints in the water main within eight horizontal feet of fluid pipeline or the recycled water piping should be sleeved 10 feet each side of the potable line crossing measured from the outside of the pipe. Pipe crossings shall be consistent with the District's Design and Construction Standards.

4.2.4 Color Identification of Recycled Water Pipes

All new transmission/distribution mains in the recycled water system, including service pipelines, valves and other appurtenances shall either be colored purple and embossed or be integrally stamped/marked "RECYCLED WATER - DO NOT DRINK", or be installed with a purple identification tape, or a purple polyethylene or vinyl wrap. (See also Section 4.5.5.)

Color-coded identification (caution) tape differentiating the recycled water piping from other utility lines shall be consistent throughout the District's service area. The purple color shall be Pantone #512 per AWWA Guidelines.

When converting an existing potable water pipeline to recycled water usage, the water pipeline shall be accurately located and tested in coordination with District and regulatory agency requirements, and the necessary actions taken for the pipeline and appurtenances to comply with these Rules. If the existing pipeline meets District and the regulatory agencies requirements, excepting pipe identification, the pipeline shall be approved for recycled water service. If verification of the existing pipeline is not possible, the pipeline shall be uncovered, inspected, and identified prior to use. All maintenance or new work to offsite recycled water systems shall be color-coded for identification in accordance these Rules.

4.2.5 Identification Tapes

Identification tapes which help to trace the pipeline shall have black printing on a purple field having the words "RECYCLED WATER - DO NOT DRINK". The overall width of the tape shall be at least three inches.

Identification tapes shall be installed centered above the pipe longitudinally. The identification shall be continuous in its coverage on the pipe and shall be fastened to each pipe length. Taping attached to sections of pipe before they are placed in the trench shall have overlaps sufficient for continuous coverage. Other satisfactory means of securing the tape during backfill of the trench may be used if suitable for the work, as determined by the

District. Sample tape marking and the inscriptions that go with it are as shown in the following figure.

RECYCLED WATER - DO NOT DRINK

4.2.6 Recycled Water Valve Casings

Valve casings shall be the standard steel casings with a special triangular, heavy-duty cover. All valve covers on offsite recycled water transmission lines shall not be interchangeable with potable water covers and shall contain a recognizable inscription cast on the top surface.

4.2.7 Valve Box Identification

Valve boxes shall be the standard concrete or fiberglass boxes with a special triangular, heavy-duty cover. All valve covers on offsite recycled water transmission mains shall not be interchangeable with potable water covers and shall contain a recognizable inscription cast on the top surface.

4.2.8 Color-Coding Exposed Recycled Water Facilities

All above ground, exposed recycled water facilities shall be consistently color-coded (purple) and marked to differentiate recycled water facilities from potable water and/or wastewater facilities.

4.2.9 Blow-off and Air and Vacuum Assemblies

Either in-line type or end-of-line type blow-off or drain assembly shall be installed for removing water or sediment from the pipe. Blow-off assemblies must be installed in a low point of the pipeline. The discharge of recycled water to storm drains is prohibited. If there is no sanitary sewer to receive the discharge, the RWQCB and the DHS must be consulted regarding acceptable alternatives. All regulations must be strictly adhered to regarding the discharge and disposal of recycled water in a non-approved use area.

Air vacuum and release valves must be provided in high points of the pipeline system and sized according to the manufacturer's recommendations. All appurtenances for blow-off and air vacuum and release valve assemblies must be consistently color-coded purple and marked to differentiate recycled water facilities from potable water and/or wastewater facilities.

The EVMWD's standard details on Blow-off and Air and Vacuum assemblies are provided in Appendix G.

4.2.10 Swivel Ell Connections

In the event that recycled water is not available, or a planned temporary use of potable water supply is required, a Swivel Ell connection may be used. The Swivel Ell connection prevents the interconnection of potable water and recycled water supplies.

DHS Policy Memo 2003-03, dated May 7, 2003, describes the requirements for swivel ell connections. The design, maintenance, and operation of swivel ell connections shall be in compliance with the Policy Memo 95-004. A copy of the swivel ell connection shall be submitted to the State DHS for review and approval. The District and State DHS must approve the swivel elbow before use. Otherwise, the potable water supply line shall be protected by an air-gap configuration to physically separate the potable and recycled plumbing lines.

Connections using the swivel ell must be witnessed by a District Cross-Connection Control Specialist. Swivel ell connections are illustrated in Standard Detail RW-123, *Swivel Ell for Recycled and Potable Water Supply*. In an emergency, the swivel ell is switched from the normal recycled water connection to the potable connection. This procedure is reversed once the recycled water supply is restored. In addition, the potable water supply must be protected by an approved reduced pressure principle backflow prevention device upstream of the swivel ell.

4.3 ONSITE RECYCLED WATER FACILITIES

All onsite recycled water facilities (e.g. decorative fountains, car washes, etc.), which specifically benefit the approved use area, shall be provided by the Applicant, owner or Customer at their expense. The Customer shall make, at their expense, any modification to the potable water system on the premises which is required by the District for recycled water service, including but not limited to District-approved backflow prevention devices. Onsite recycled water facilities shall be designed for recycled water use in those areas where the District has determined that recycled water will be supplied in the future, even though recycled water service is not immediately available when the design area is ready for construction. Provisions shall be made for connection to the recycled water system when it becomes available. In the interim, potable water may be supplied to the onsite facilities through an approved temporary potable water connection. Such temporary connection to the potable water system shall be provided with an approved reduced pressure backflow prevention assembly installed by the Customer to the satisfaction of the District and DHS.

Plans and specifications for Customer recycled water facilities shall be submitted to the District as specified in Sections 3.5.1 and 4.5.1 of these Rules and Regulations.

4.3.1 Identification of Onsite Pipes and Fittings

New onsite pipelines shall be identified as recycled water pipes by using a purple color code differentiating them from potable water piping.

All piping must be appropriately labeled or continuously taped with appropriate identification.

Approved use areas for recycled water service shall also be posted with precautionary notices per Section 5.3.

When converting an existing potable water line to recycled water usage, the water line shall be accurately located and tested in coordination with the District and the regulatory agencies, and the necessary actions taken to bring the water line and appurtenances in compliance with these Rules. If the existing line meets approval of the District and the regulatory agencies, except for the pipe identification, the line shall be approved for recycled water service. If verification of the existing line is not possible, the line shall be uncovered, inspected, and identified prior to use. All maintenance or new work to onsite recycled water systems shall be color-coded for identification in accordance with these Rules.

4.3.2 Warning Tapes

A warning tape with metallic backing shall be installed on all recycled water service lines. The tape shall run continuously the entire length of the pipe and shall be at least 3 inches in width (see Section 4.2.5 for tape sample and color).

4.3.3 Color-Code for Recycled Water Pipes

All recycled pressure or non-pressure pipe shall be purple with the words "RECYCLED WATER - DO NOT DRINK" embossed or integrally stamped/marked on the pipe.

The warning shall be stamped on opposite sides of the pipe, repeated every three feet.

All connections, temporary and permanent to a recycled water system shall be identified in such a manner as to differentiate them from connections to a potable water system.

4.3.4 Valve Box Identification

All new recycled water valve boxes and covers for irrigation control valves, isolation valves, quick couplers, etc., shall be color-coded purple and embossed “Recycled Water – Do Not Drink”. Existing covers may be retrofitted with a purple nameplate marked: “RECYCLED WATER – DO NOT DRINK” and permanently attached to the cover.

4.3.5 Separation

Refer to Section 4.2.3 for horizontal and vertical separations.

4.3.6 One Hundred Year Flood

4.3.6.1 Runoff and Erosion

All recycled water storage facilities owned and/or operated by recycled water Customers shall be protected against erosion, overland runoff, and other impacts resulting from 100-year frequency 24-hour-duration storms to the satisfaction of the District.

4.3.6.2 Peak Flood Levels

All recycled water storage facilities owned and/or operated by recycled water Customers shall be protected against 100-year frequency peak stream flows and flood levels, as defined by the Riverside County Flood Control District, and to the satisfaction of the District.

4.4 RECYCLED WATER FOR CONSTRUCTION USE

4.4.1 Permits

The use of recycled water for construction purposes requires approval of the District and the appropriate regulatory agencies. The Permit shall be obtained prior to beginning construction.

4.4.2 Uses

Recycled water for construction purposes may only be used for soil compaction during grading operations, dust control and consolidation and compaction of backfill in trenches for non-potable water, sanitary sewer, storm drain, gas and electric pipelines. Recycled water shall not be used for water jetting and consolidation or compaction of backfill in trenches for potable water pipelines.

4.4.3 Equipment

Vehicles used for distributing recycled water for soil compaction and dust control shall be provided with an adequate tank and plumbing system to ensure that leaks and ruptures will not occur in the course of normal use.

Control valves shall be provided such that recycled water can be applied in a controlled fashion on the approved use area, and completely retained during transit to all other areas. Spray heads or nozzles shall be provided and configured in such a way that the recycled water is uniformly applied, and runoff, ponding or windblown spray conditions are prevented.

Each tank shall be equipped with an approved air-gap separation. Above ground recycled water appurtenances shall be color-coded purple and labeled or tagged "RECYCLED WATER – DO NOT DRINK" . Labeling or tagging in Spanish is optional. Water towers and trucks utilizing recycled water shall be properly identified and clearly marked with recycled water notification to the satisfaction of the District.

Equipment operators shall be instructed about the requirements contained herein and the proper use of recycled water. Water trucks, hoses, drop tanks, etc. shall be identified as containing recycled water and not suitable for drinking water. Recycled water shall not be introduced into any domestic water piping system. No unprotected connection shall be made between equipment containing recycled water and any part of a potable water system.

4.4.4 Ponds

Ponds used for storage of recycled water for construction shall be fenced and posted to limit public access. Fences shall be in accordance with Regional Standards.

4.4.5 Equipment and Facilities Cleaning

Any equipment or facilities such as tanks, temporary piping or valves, and portable pumps which have been used with recycled water shall be cleaned and disinfected before moving to another job site. This disinfection and cleaning shall ensure the protection of public health in the event of any subsequent District-approved use.

Service connections, equipped with recycled water meters, for the construction use of recycled water shall be provided by the District at locations convenient to the Customer and at the discretion of the District. A secure fence or enclosure must be provided to prevent vandalism or unauthorized use of recycled water. This enclosure shall have an approved sign stating: "RECYCLED WATER – DO NOT DRINK" both in English and Spanish.

4.5 SUBMITTALS

The following information shall be submitted to and approved by the District prior to commencing any construction.

4.5.1 Customer's Plans and Specifications

Plans and specifications for the construction of onsite recycled water facilities shall be prepared by a civil engineer, a mechanical engineer or a landscape architect registered with the State of California, and submitted to the District and State DHS for review and approval per Sections 3.5.1 and 4.3. The plans shall delineate the proposed recycled water service area, the proposed location, size and type of all recycled water service connections and onsite facilities. The plans shall include the layout of existing potable water pipelines and facilities including any areas in which recycled water must be specifically excluded.

A declaration of responsible charge shall be included on the cover sheet as follows:

Declaration of Responsible Charge

I hereby declare that I am the _____of work for this project, and that I have exercised responsible charges over the design of this project as defined in Section 6703 of the Business and Professions Code and design is consistent with current standards.

I understand that the check of project drawings and specifications by EVMWD and DHS is confined to a review only and does not relieve me, as the _____ of work, of my responsibilities for project design.

Firm name and address:

_____

_____

_____

Phone No: _____

By: _____ Date_____
Name

Registration No._____ Expiration Date: _____

4.5.2 Information on Customer's Plans

The following information shall be provided on the plans for every Customer applying for any recycled water service meter:

a. Application information specified in Section 3.2.1.
b. Meter size (inches) and the District to verify
c. Irrigated area to be served through the recycled water meter (square feet or acres).
d. Peak flow through the meter (gpm).
e. Estimate of the yearly recycled water requirement (acre-feet or HCF).
f. Service pressure at the meter as provided by the District (psi).
g. Topographic contours of the site (1 ft interval), or if not available, sufficient information to determine elevation differences within the site.
h. Direction of drainage.
i. Location of wells (if applicable).
j. Location of 100 Year Flood Plain (if applicable).
k. Location of potable water lines and sanitary sewers.
l. Location of storm drains.

4.5.3 Information Required for Recycled Water Irrigation Systems

If the onsite facilities include a landscape irrigation system, the following data for the materials used in the irrigation system shall be included on the plans:

a. A pipe schedule listing pipe sizes and materials of construction.

b. Valve types/sizes.

c. The following information for each type of sprinkler head:

    i. Sprinkler radius (feet).
    ii. Operating pressure (psi).
    iii. Flow (gpm or gph).
    iv. Sprinkler pattern.
    v. Manufacturer, model number and all pertinent information.

d. Drip irrigation information and all other pertinent equipment.

e. Estimates of application rate, acres to be irrigated, soil texture and soil infiltration rate, and information on pressure requirement, hourly delivery rate, and the wetting pattern of sprinklers.

4.5.4 Additional Information to be Specified on Customer's Plans

Exterior drinking fountains, potable water hose bibbs, public eating and cooking facilities, playground equipment, tot lots, outdoor swimming pools and spa locations shall be shown and identified on the plans. If no exterior drinking fountains or other public facilities are present in the design area, then it shall be specifically stated on the plans that none exist. For dual-plumbed sites, if recycled and potable lines cross, a typical cross-section must be included in the detail section of the plans.

The design and proposed locations for recycled water "DO NOT DRINK" signs shall be shown on the plans. An additional, detailed signage plan may be required by the District for unusual circumstances.

4.5.5 Standard Notes for Inclusion on Customer's Plans

Provide the following notes as applicable, on the recycled water improvement and irrigation plans under the heading "Recycled Water General Notes:"

4.6 RECYCLED WATER GENERAL NOTES

1. The contractor shall notify EVMWD at (951) 674-3146, 48 hours prior to commencement of any excavation onsite improvements.

2. All work shall be performed in accordance with these Rules and DHS requirements.

3. All public facilities such as comfort stations, drinking fountains, outdoor eating areas, etc., shall be protected from spray and/or misting by recycled water.

4. No ponding, run-off, misting or over spray is permitted. Locate or adjust all irrigation heads to prevent over spraying onto sidewalks, streets, private lots, and non-approved use areas.

5. No ponding, run-off, misting or over spray is permitted. Locate or adjust all irrigation heads to prevent over spraying onto sidewalks, streets, private lots, and non-approved use areas.

6. Non-approved use areas shall be protected from contact with recycled water, whether by windblown spray or by direct application through irrigation or other use. Lack of protection, whether by design, construction practice, or system operation is strictly prohibited.

7. Hose bibbs on recycled water systems are prohibited.

8. Cross connection between recycled water lines and potable water lines is strictly prohibited.

9. Recycled water quick coupling valves shall be designed for use on recycled water in accordance with these Rules.

10. Quick coupling valves used in recycled water systems shall conform to the following:

    a. Quick coupling valves can be 1-inch or 3/4-inch nominal size, with brass construction and a normal working pressure of 150 psi or equal.

    b. A purple rubber or vinyl locking cover shall be permanently attached to the quick coupling valves.

11. No substitution of pipe materials will be allowed without prior approval by the District and DHS.

12. All irrigation pipe shall be colored purple and stenciled with "Recycled Water Do Not Drink" . Orient the stenciling to the top of the trench for laterals. Install purple metallic tape over the recycled water mains as described in these Rules.

13. Burial of all piping shall be in accordance with these Rules for the use of Recycled Water. Provide a minimum cover of all pipe and wire in accordance with these Rules for the use of recycled water.

14. Hours for irrigation with recycled water are from 9:00 p.m. to 6:00 a.m. The hours for irrigation with disinfected tertiary recycled water may be modified by the local authority and shall be under the supervision of the Customer's Recycled Water Site Supervisor. Irrigation with water of a lesser quality than disinfected tertiary recycled water must be reviewed and approved by DHS.

15. When potable water and recycled water lines cross, the recycled water line shall be installed within a protective sleeve. The sleeve shall extend 10 feet from each side of the outside edge of the potable line.

16. Maintain separation between potable water, recycled water, and/or sewer pipelines according to the District's Rules & Regulations and DHS Guidance Memo No. 2003-02 latest revision. Measurements shall be between facing surfaces, not pipe centerlines. Install sewer line below a recycled water line and a recycled water line below a potable water line.

17. Provide a minimum of 12 inches of vertical separation between potable water, recycled water, and sewer line according to these Rules and DHS. Maintain at least 12 inches crossing separation between other utilities.

18. All public and private potable water mains including fire mains and any water wells and water courses within the recycled water project shall be shown on plans.

19. The site irrigation systems as shown on these documents may utilize potable water until such time as the District makes recycled water available to the site.

20. Install purple colored Pantone #512 material for all above ground irrigation facilities per AWWA Guidelines and Section 116815 of the California Health and Safety Code.

    a. Valve and other on-grade boxes - integral color

    b. Sprinkler heads - integral color plastic

    Above ground piping to sprinklers can be UV resistant PVC material; however, all sprinkler risers and heads must be marked for recycled water use.

21. All recycled water sprinkler control valves and other below grade facilities within boxes shall be tagged with identification tags. Tags shall be weather proof plastic 3 inches x 4 inches, purple in color, with words "RECYCLED WATER – DO NOT DRINK" and "AGUA IMPURA – NO BEBER" imprinted on one side, and the recognized symbol for do not drink on the other side. Imprinting shall be permanent and black in color. One tag shall be attached either to the valve stem directly or with plastic tie wrap, or to the solenoid wire directly or with plastic tie wrap.

22. The Applicant shall conduct a cross-connection control shutdown test and coverage test (as defined in Section 4.8 of the District's Rules) when requested by the District or DHS prior to any use of recycled water. The method of this test must be approved by the District.

23. The required cross-connection control shutdown test may be performed by an outside contractor who is a certified Cross-Connection Control Specialist as defined in the District's Rules and witnessed by the District's Cross-Connection Control Specialist. Copies of inspection reports will be forwarded to the District.

24. The design and location for recycled water "DO NOT DRINK" signs shall be in accordance with the District's Design and Construction Standards and shall be included on the plans.

25. An annual site survey shall be performed by the District subject to approval by the DHS. Copies of the inspection reports will be forwarded to the relevant parties.

26. Prior to conversion to recycled water, an on-site recycled water site supervisor shall be designated in writing as required in Section 3.9.4 of these Rules. Copies of the site supervisor's certificate of training with a 24-hour contact telephone number shall be provided to the District and DHS.

27. All maintenance personnel shall be educated on a continuous basis of the presence of recycled water. Personnel must be informed that recycled water is meant for

irrigation and DHS-approved non-potable use only. It is not approved for drinking purposes, hand washing, cleaning of tools, etc. Given the high turnover rate of employees in the landscape industry, it is important this information be disseminated on continual basis.

28. A physical separation shall be provided between areas irrigated with recycled water and those irrigated with potable water. Separation may be provided by concrete mow strips, fence or wall, or other means as approved by the District and DHS.

29. Customers and Applicants may not create or maintain any direct (pipe-to-pipe) drainage of recycled water into the storm drains.

4.7 RECORD ("AS-BUILT") DRAWINGS

The Applicant, Customer, or owner shall submit record drawings to the District before a request for service start-up is made.

Any proposed changes from the original design shall be accurately recorded on one set of drawings and submitted to the District for agreement and approval prior to recycled water service. Such changes shall be approved by the District before any changes, modifications, or additions are made.

4.8 RECYCLED WATER INSPECTION PROCEDURES

4.8.1 Coverage Test

Upon completion of the construction of any irrigation system, the system shall be inspected to determine its adequacy to meet health and safety concerns. The coverage test looks at overspray, misting, ponding, runoff, color-coding, and signage. The Cross-Connection Specialist will schedule the coverage test with the Customer site supervisor and DHS. Any punchlist is finalized by the Cross-Connection Specialist. This procedure may be performed concurrently with the shutdown test as described in the following section. On LMDs, the inspection relates to the possibility of the inhalation of recycled water irrigation spray, overspray and misting into non-approved use areas, and runoff into area storm drains. The inspection must also include the possibility of cross-connecting the irrigation system and other private potable water systems. All changes from the approved design drawings shall be marked on as-built drawings.

4.8.2 Shutdown Test

The following applies to sites using recycled water for landscape irrigation. These sites may have on-site potable services to drinking fountains, restrooms, and isolated systems using potable water. Additionally, potable water may serve on-site buildings for domestic purposes.

The initial test of new and retrofit sites with potable water services (dual-plumbed sites) is conducted using potable water high-lined to the irrigation system point of connection. A

reduced pressure principal (RPP) backflow prevention device must be used for the high-line connection, and all testing is conducted using potable water. The recycled water meter will be set, and service activated after successful completion of cross-connection testing and inspection.

The cross-connection test using pressure data loggers or recorders is designed to provide reasonable assurance that a recycled water system is not intentionally or inadvertently cross-connected to any other water system. Modifications to the following procedure may be necessary. For each site, the specific method of cross-connection testing must be approved by DHS and the District. The location and type of pressure recording equipment must be specified in the test method.

The cross-connection test begins by monitoring the recycled water system and any on-site potable water system(s) for 24 hours prior to the shutdown test. During this 24-hour period, the recycled water system is pressurized with irrigation stations running during their normal schedule. It is very important that the irrigation controller clock is set correctly, and the station schedule is noted. Usually, recycled water quick couplers are used as points of connection for pressure recording equipment. This part of the test is designed to check irrigation system operation and detect any unauthorized connections or uses of the recycled water system. Additionally, normal operating pressures for the recycled water system and potable system are recorded during this period. For the recycled water system, any spikes or dips in the pressure record that are not within the operating period of the irrigation system must be explained before proceeding.

The shutdown test starts with a shutdown of the recycled water system for at least 4 hours. During the recycled water shutdown, potable water service is left on at normal pressure while the recycled water system is shutoff at the meter service connection. After shutoff, the initial pressure of the recycled water system is lowered to approximately 30 psi at the point of connection. This pressure must hold until the first irrigation station is activated. During the recycled water system shutdown, all irrigation stations must be activated for at least two minutes per station. Additionally, any adjacent site irrigation system stations should run during the recycled water system shutdown. Any pressure spikes noted on the recycled water system pressure record must be accounted for before proceeding.

A successful recycled water system shutdown, with no pressure increases or flows noted, provides basic assurance that cross-connections do not exist.

If the site has potable water service connection(s), a minimum 4-hour potable water shutdown is conducted after the recycled water system shutdown test. During this part of the test, the recycled water system is on at normal pressure, while the potable system is off and depressurized to approximately 30 psi. On the potable system, building isolation valves should be closed first, and any occupants notified that the water is off. It is always preferable to conduct the potable water system shutdown at a time when buildings are unoccupied. After building isolation valves are closed, the potable system is shutoff at the RPP backflow prevention device using shutoff valve #1 and the system is depressurized to approximately 30 psi. Each irrigation station on the recycled water system must run at least once during the

potable water system shutdown. Since each irrigation station is operating during the potable water system shutdown, usually, the coverage test is conducted at this time.

Any increases noted during the potable water system shutdown must be investigated for cross-connection between the onsite irrigation and domestic supply or adjacent water systems.

Test valve #4 on the RPP is usually used for monitoring the potable water system during shutdown testing. For the test, the RPP must be in excellent working order with check valve #2 holding tight. The RPP must be tested at the conclusion of cross-connection testing.

4.8.3 New and Retrofit Sites Testing

Shutdown tests and use site inspections shall be conducted for both new construction (with complete sets of planning and inspection documents) and retrofit (with minimal planning and inspection documents). Because retrofit applications can pose additional challenges from unfamiliarity with the site and plumbing layout, retrofit sites must be thoroughly inspected by the District's cross-connection specialist. All available plans must be provided to the District, either as "as-builts" or as developed by the Customer. The District Cross-Connection Specialist must survey the site before final retrofit plans are submitted for District and DHS review. The District may conduct a preliminary cross-connection test to help determine the feasibility of recycled water conversion.

4.8.4 Results

The results of the cross connection test for dual-plumbed systems shall be compiled in an engineering report for the site. Test results will be provided to all concerned parties. (Reference Section 60314 of Title 22 in a format that is acceptable to DHS)

SECTION 5
FACILITIES OPERATION

5.1 OFFSITE RECYCLED WATER FACILITIES

Operation, maintenance and monitoring of all of the District's offsite recycled water systems including, but not limited to, recycled water transmission and distribution mains, service lines, valves, connections, storage facilities, and other appurtenances and properties up to and including the District's meter, shall be under the management and control of the District. No other persons except authorized representatives of the District shall have any right to enter any portion of the foregoing. No other persons except authorized representatives of the District shall have any right to operate, adjust, repair, change, alter, move or relocate any portion of the offsite recycled water system.

5.2 ONSITE RECYCLED WATER FACILITIES

5.2.1 Customer's Responsibilities

The Customer or owner shall be responsible for preventing pollution or contamination of the on-site water system and the District's distribution system from backflow.

The Customer or owner shall be responsible for the safe and efficient operation, and maintenance of their facilities. However, the District shall also have the right to monitor and inspect the onsite operation of the Customer's facilities pursuant to Section 6 of these Rules.

The Customer shall notify the District of any and all updates or proposed changes, modifications or additions to the onsite facilities. Changes require District approval and shall be designed and constructed according to these Rules and any other District requirements.

The Customer or owner shall notify the District immediately when there is a change of either owner or Customer. The District will then reassess the level of protection required and amend the existing Permit in accordance with Section 3.3.2 as necessary. Any alterations to existing onsite facilities that may affect required protection levels must also be reported directly to the District.

The Customer shall comply with any and all applicable Federal, State, and local statutes, ordinances, regulations, contracts and requirements prescribed by the District. In the event of violation, any charges and penalties shall be applied by the District in accordance with Section 11 of these Rules.

It shall be the responsibility of the Customer to notify the District of any and all failures in a recycled water system whether or not in the Customer's opinion the failures resulted in violations. It shall also be the responsibility of the Customer to notify the District of any and all violations which occur as a result of the Customer's action or the action of their operations

personnel. The Customer shall keep a written log of all system failures and violations including corrective action taken. The log shall be available for review by the District.

5.2.2 Designation/Responsibility of the Recycled Water Site Supervisor

Each recycled water Customer shall designate a Recycled Water Site Supervisor. The Recycled Water Site Supervisor shall be a person accepted and approved by the District to operate and maintain the onsite recycled water facilities and to assume the responsibilities outlined below. The Recycled Water Site Supervisor shall obtain instruction in the use of recycled water, such instruction being approved by the District. The customer must notify the District whenever the Recycled Water Site Supervisor will change. The Recycled Water Site Supervisor shall be the contact person for the Customer in all matters between the Customer and the District concerning the operation of the onsite system and the use of recycled water (see Section 3.9.4). Subsequently, the Customer shall be responsible to obtain the District's acceptance and approval of their newly designated supervisor. The Recycled Water Site Supervisor will have the following responsibilities:

a. To supervise recycled water service and maintain onsite facilities.

b. To ensure that all operations personnel are trained and familiarized with the use of recycled water, including all pertinent information contained in these Rules and Regulations and those applicable portions of the California Code of Regulations. This information shall be supplied by the District upon request by the Applicant or Customer. The Applicant shall attest that training will be provided.

c. To furnish operations personnel with operating instructions, maintenance instructions, controller changes, and record drawings to ensure proper operation in accordance with the facilities design and these Rules and all applicable permits. At least one complete set of this information shall be kept onsite or in the nearest field office or maintenance building.

d. To operate and control the Customer's recycled water system in order to prevent human consumption of recycled water, to prevent run-off, to minimize public contact, and comply with Title 22.

e. To provide a preventative maintenance program to ensure the continued optimal operation of all system elements within the requirements of these Rules.

f. To prevent cross-connections to other water systems, and also to protect the recycled water system from contamination from cross-connections to other sources.

g. To ensure that maintenance and inspection of backflow prevention assemblies is performed annually per requirements of regulatory agencies, or more often in those instances where successive inspections indicate repeated failures.

h. To report to the District any and all onsite facilities failures whether or not such failures may result in violations.

5.3 POSTING APPROVED USE AREAS

Recycled water use areas must be posted in English and Spanish to inform the public of recycled water use. All signs must meet District standards for size, wording, and installation. Signs must be located at all entrances to the site and other locations so the public and persons working at the site are adequately notified of recycled water use. For sign placement within the site, consult with the District's Cross-Connection Specialist.

For landscape irrigation systems, additional signs (4" x 8" size) and notification shown in Appendix H must be posted at each controller and booster pump.

For restricted recreational impoundments and landscape ponds or fountains, signs must be placed so the public is adequately notified that the water is unsafe to drink.

For temporary construction sites, signs must be located at all entrances to the site and any pumps, tanks, water trucks, ponds, or other equipment used for recycled water. Additional signs and recycled water tags can be required as determined by the District's Cross-Connection Specialist or DHS.

For all other authorized uses of recycled water, approval of signage must be obtained prior to using recycled water.

Required signs, labels, and tags must be installed and maintained by the customer. The customer's Recycled Water Site Supervisor shall routinely inspect signage, and ensure that missing or damaged signs are promptly replaced.

A signage plan shall be prepared and forwarded to the District and DHS for review and approval prior to using recycled water.

SECTION 6
MONITORING AND INSPECTION

The District, the DHS, the RWQCB, or authorized representatives of any of these agencies, shall have authority to monitor and inspect the entire recycled water system, including both onsite and offsite facilities. The District shall conduct monitoring programs as it deems necessary to ensure that the Customer's recycled water facilities are being operated in accordance with these Rules, including the requirement that cross-connections between potable water facilities and the recycled water facilities do not exist. In carrying out these functions, the District, DHS, RWQCB, or authorized representative of any of these agencies, shall have the right to enter any Customer's premises during reasonable hours upon presentation of proper credentials. Reasonable hours shall include hours when irrigation is being performed. The Customer shall indemnify and hold the District harmless for any damage, loss, or injury alleged to have been caused by District personnel while inspecting on-site facilities, except where the District's sole negligence is duly established. If such entry is refused or cannot be obtained, the District shall have authority to shutoff the recycled water supply and discontinue service.

Where potable and recycled water lines are on the same site and located in the same area, an annual site inspection will be required. This inspection shall be performed by the District, DHS, or a certified Cross-Connection Control Specialist. These inspections may occur more frequently at the discretion of the District, especially where potable irrigation systems have been converted to use recycled water. A copy of the inspection report will be forwarded to the relevant parties.

A sample Recycled Water Site Inspection Report form is presented in Appendix I.

SECTION 7
RECYCLED WATER CONNECTION, METER, AND SERVICE LINE CHARGES

The District shall assess charges for the installation and maintenance of all recycled water services, meters, and appurtenances thereto, and these shall remain the property of the District. Said charges, in addition to all other usual and regular charges of the District, must be paid before work will be performed. The amount of said charges shall be established by the District and shall be determined and computed in order to fully reimburse the District for the cost of materials, labor, equipment, and any other costs incidental to the performance of said services.

Whenever a Customer requires an installation covered by established District rates, the work charges will be based upon a statement of costs prepared by the District. If a required installation cannot be performed for the amount stated in the appropriate schedule of rates established by the District, owing to the peculiarity of the proposed service, the District reserves the right to perform that installation on the basis of a statement of cost.

Whenever a Customer requests the District to remove recycled water service lines, meters or other appurtenances, the charges shall be made on the basis of a statement of costs by the District.

The District may impose a fee to re-establish recycled water service terminated at the Customer's request or for Customer's violation District's requirements, including these Rules.

SECTION 8
CUSTOMER'S GUARANTEE DEPOSIT

All recycled water service Applicants must post a guarantee deposit, unless the Applicant has at least one other active water service account with the District and no record of delinquent water account payments. This deposit shall be equal to double the estimated monthly recycled water service bill, and shall in no event be less than the amount specified in the schedule of rates. Refer to the District's Administrative Code pertaining to customer deposits.

Guarantee deposits may be refunded upon customer application, after a satisfactory payment record has been established for the twenty-four (24) consecutive months after the date of deposit. The District may disallow or withhold the refund of any deposit after the twenty-four (24) month period if payment or settlement of service bills has not been timely. Where service has been permanently terminated for non-payment of service bills, the outstanding amount and the separation costs for all of the Customer's recycled water service accounts shall be settled against the deposit account, and any balance will be returned to the Customer. The service contract will then be closed.

Any request for re-establishment of a recycled water service subsequent to permanent revocation or termination of the Permit shall be handled per Section 11.4 of these Rules.

SECTION 9
RECYCLED WATER SERVICE

9.1 ESTABLISHMENT OF RATES

The District shall establish rates for recycled water service.

9.2 CHANGE OF RATES

The District reserves the right to change its rates for recycled water service, as authorized by the District Board from time to time.

9.3 DISTRICT CHARGE

The District Board shall establish a District Charge. The District Charge shall be paid before any Applicant or Customer obtains a new recycled water connection, or increase its recycled water use.

9.4 RECYCLED WATER METER

9.4.1 Meter Reading Period

Recycled water meters shall be read at the same time as the potable water meter in accordance with the applicable provisions of the District.

If a recycled water meter fails to register during any period or is known to register inaccurately, the Customer shall be charged for that period pursuant to an average daily consumption rate based upon a reading of the meter when in use and registering accurately during the same season or as close to the same season as is reasonably possible. Any Customer may request that the meter through which the recycled water is being furnished be examined and tested per Section 3.8 of these Rules.

9.4.2 Meter Protection

The Customer shall, at all times, keep the meter assembly and the area around the meter or other facilities free from deposits of oil, toxic, hazardous or contaminated liquid or waste, trash, soil, building materials or substances, objects, or obstructions. The Customer shall not allow or permit meter boxes or other facilities to become obstructed or obscured by trees, shrubs, plants or in any manner impede their use or access to them. If such substances, objects or obstructions are not cleaned and removed by the Customer, the cleaning and removal shall be performed by the District at the expense of the Customer after a reasonable time of notification.

9.5 BILLING

9.5.1 Permanent Service

The District will send recycled water bills separate from the potable water bills at rates established by the District Board.

9.5.2 Temporary Service

The District has one rate for recycled water, and thus recycled water sold through temporary meters shall be billed at the same rate as permanent meters per the rates established by the District Board.

9.6 PAYMENT OF RECYCLED WATER BILLS

Payment shall be made according to the applicable potable water bills provisions in the District's Administrative Code.

SECTION 10
SEVERABILITY

If any section, subsection, sentence, clause, phrase, part or portion of these Rules is for any reason held to be invalid or unconstitutional, such invalidity shall not affect any of the remaining portions of these Rules. The District declares that each section, subsection, sentence, clause, phrase or part of these Rules would have been adopted irrespective of the invalidity of any part. These Rules shall be interpreted so as to comply with applicable federal and state laws and regulations.

SECTION 11
ENFORCEMENT AND PENALTIES

11.1 GENERAL

The enforcement and penalty provisions for violations of these Rules are set herein. Any person, firm, corporation, association, or agency found to be violating any provision of these Rules; the terms and conditions of the Permit; or any applicable federal, state or local statute, regulation, resolution, ordinance or other requirement shall be subject to one or more of the following:

a. Public Nuisance. Any violation as described above is hereby declared a public nuisance and shall be corrected or abated as directed by the District. Any person creating such a public nuisance is guilty of a misdemeanor.

b. Administrative Enforcement Powers. Authorized District enforcement officers are authorized to issue:

1. Cease and Desist Orders. When an authorized enforcement officer finds that an activity has taken place or is likely to take place in violation of these Rules, the officer may issue an order to cease and desist such activity causing or likely to cause such violation, and direct that those persons responsible shall:

   a) Comply with all applicable requirements;
   b) Comply with a time schedule; and/or
   c) Take appropriate remedial or action to prevent the violation from occurring or recurring.

2. Written Warning. An authorized enforcement officer may issue a written warning, including a compliance date, to persons who are found or suspected of violating these Rules.

c. Civil Actions. In addition to any other remedies, any violation of these Rules may be enforced by civil action brought by the District. In any such action, the District may seek, and a court may grant any or all of the following remedies:

1. A temporary and/or permanent injunction;

2. Assessment of the violator for the costs of any investigation, or monitoring survey of a violation, and for reasonable legal costs;

3. Costs incurred in removing, correcting, or terminating the violation or adverse effects resulting from the violation; or

4. Compensatory damages for impacts to water quality.

d. Permit Revocation. In addition to any other statute or rule authorizing termination of water service, EVMWD may revoke a Permit issued hereunder if a violation of any provision of these Rules is not corrected or if a Customer's use of recycled water causes or threatens to cause a nuisance. Permit revocation shall allow the procedures set forth in Section 11.3, below.

e. Penalty. Any person or entity that violates these Rules shall, for each day of violation, or portion thereof, be subject to a fine not exceeding $1,000.

f. Appeal. Except in cases of Permit revocation (see Section 11.3), any person objecting to any enforcement action under these Rules make a request for reconsideration to the General Manager with ten (10) days of the effective date of the enforcement decision. The written request for reconsideration shall state in detail the specific facts supporting the request for reconsideration. The General Manager shall render a decision within 30 days of receiving the request for reconsideration.

Within ten (10) days of notification of the General Manager's decision, a person may file a written appeal of the General Manager's decision with the District Board of Directors. The specified filing fee must accompany any written appeal to the District Board of Directors. Upon receipt of the written appeal and the filing fee, the District shall set the matter for hearing with the District Board of Directors at the earliest available date. At that hearing, the District Board of Directors may reject, affirm or modify the General Manager's decision. The District Board of Directors decision shall be final and cannot be further appealed, and shall complete the administrative appeal process.

g. Enforcement Action by the RWQCB. If any person uses, transports, or stores recycled water in violation of these Rules, the Recycled Water Ordinance, the District's National Pollutant Discharge Elimination System permit(s), or any other applicable federal, state or local law, or acts in a manner which creates, or threatens to create conditions of pollution, contamination, or nuisance, as defined in the Water Code Section 13050, and the RWQCB, DHS, or any other federal, state or local agency takes action against the District, or revokes, suspends or terminates any District permit as a result, such person shall indemnify the District for any resulting damages, including but not limited to all reasonable attorneys' fees and costs related to defending such action or taking action against the violating Customer. This provision is in addition to any other rights the District may have against the offender.

11.2 INTERIM DISCONTINUATION OF RECYCLED WATER SERVICE

Where the emergency nature of violations requires immediate action, the District, DHS, and/or the RWQCB may immediately order the discontinuance of recycled water service, subject to timely decision on Permit revocation or suspension, pursuant to an administrative hearing. Reasons for termination include, but are not limited to:

a. Refusal to install a required backflow prevention device.

b. Refusal to test a backflow prevention device.

c. Refusal to repair or replace a faulty backflow prevention device.

d. Direct or indirect connection between any potable water system and the recycled water system.

e. Direct or indirect connection between the District's recycled water system and a system or equipment containing contaminants.

f. A situation which presents an immediate health hazard to the District's potable and/or recycled water system, as determined by the District or regulatory agency.

g. Operations contrary to restrictions resulting in overspray into non-approved use areas, excessive application rates or times, or improper grading of the soil, or improperly maintained drainage systems resulting in run-off, or ponding due to run-off on public rights-of-way or adjoining areas not approved for recycled water use.

h. Any discharge of recycled water in violation of any applicable discharge prohibitions or requirements prescribed by the RWQCB or any other federal, state or local agency, or in a manner which creates or threatens to create conditions of pollution, contamination, or nuisance, as defined in Water Code Section 13050.

11.3 PERMANENT REVOCATION

The District may revoke any Permit. Unless the District determines an emergency, a Permit may be revoked until after the Customer has been given an opportunity for an administrative hearing as hereinafter provided.

11.3.1 Serving Notice of Revocation

Where the District determines that a Permit should be revoked, the District shall prepare a written notice of revocation, which includes concise statements of the proposed action, reasons for the proposed action, and the Customers right to a public hearing. Such notice shall be sent by certified mail to the Customer's last billing address or be personally served on the Customer at least ten (10) days before the effective date of the proposed permanent revocation. If, within five (5) days after receipt of such notice, the Customer or authorized representative requests in writing an administrative hearing from the District, the District shall immediately set a hearing and give the Customer written notice of the time, date and place of such hearing, either by personal service or First Class mail. The hearing shall be held not more than thirty (30) days from the date of receipt of the request for hearing. The hearing shall be conducted by a hearing officer designated by the District. The hearing officer shall not have been involved in any way with the decision to revoke the subject Permit or contract. No hearing shall be continued except upon showing of a good cause.

Within ten (10) days after notification of the hearing officer's decision, the person may file a written appeal of the decision with the District Board. The written appeal to the District

Board of Directors and a requisite filing fee must be submitted to the District. Upon receipt of the written appeal and the requisite filing fee the District shall set the matter for hearing with the District Board of Directors at the earliest available date. At that hearing, the District Board of Directors may reject, affirm or modify the hearing officer's decision. The District Board of Directors decision shall be final and shall complete the administrative process.

11.3.2 RE-ESTABLISHMENT OF RECYCLED WATER SERVICE

Any request to re-establish service subsequent to revocation of the Permit and the termination of recycled water service shall be the same as for initially obtaining recycled water service. The District may, for good cause, deny re-establishment of service or require that an agreement of financial security conditioned upon compliance with these Rules be provided.

SECTION 12
INCORPORATION BY REFERENCE

Each and every of the foregoing provisions of these Rules are requirements of any application for service /or Permit, are agreed to in full by any Applicant or Customer, are hereby incorporated therein by reference; and shall survive any Permit except by mutual written agreement; and any and all Permits shall be subject to these Rules.

Appendix A
Application for Recycled Water Service

APPLICATION FOR RECYCLED WATER SERVICE

Applicant completes the following: (Please print or type)

Applicant Name: _____

Relationship to property: _____

Mailing Address: _____

Telephone number: _____ Office_____ Residence

Project/site name: _____

Project/site address: _____

Property owner(s): _____

Mailing address: _____

Telephone number: _____ Office_____ Residence

Recycled Water Site Supervisor:

Name: _____

Address: _____

_____

24-hour contact telephone number: _____

Legal description of property: _____

_____

(Check each use)

1. Type of use:

_____Landscape irrigation
_____Commercial use
_____Industrial use
_____Agricultural use
_____Impoundments
_____Construction use
_____Wildlife habitat
_____Recreational
_____Other

2. Brief description of use(s): _____

_____

3. Total irrigated area: _____ acres Types of plant material: _____

_____

4. Estimated demand: Total quantity: _____100 cu. ft./yr.(HCF/yr.)
Max. at point of connection: _____gallons per minute (Total)
Min. pressure: _____per square inch (psi)
Hours/Day: _____
Days/Week: _____

5. Number of service connections: _____
Number of meters requested: _____ Size of meters: _____

6. This is a: ____ new _____ converted system (e.g., non-potable to recycled water; potable to recycled water)

7. If a new system, how are pipes to be identified:
_____ Color-coded with labels _____ Tape wrap

8. Are additional special construction requirements beyond the District's for Recycled Water Use? _____Yes _____No

If yes, explain: _____

_____

9. Date requested to begin service: _____

10. Duration of service (temporary, interim, construction use, permanent):

_____

11. Additional information: (Include special conditions affecting service):

_____
_____
_____

Please include the following items:

(a) Items to be submitted with the initial application:

i) Location and vicinity map showing the demarcation of the recycled water use area
ii) Attachment of a properly notarized affidavit
iii) Check or money order for required fees made out to:

Elsinore Valley Municipal Water District

Although Elsinore Valley Municipal Water District may approve the Application, the Permit shall not be granted prior to the approval of the State Department of Health Services

(b) Items to be submitted subsequent to the approval of the application:

i) Drawing of the project area on one, 8½ x 11 sheet of paper which shall include and show:

- Location and vicinity map
- Demarcation of the recycled water use area
- Specific potable water use areas
- Location of service connections and sizes
- Main line locations
- Gate valve locations
- Specific recycled water use areas
- Specific potable water use areas

I, the Applicant, have read and understand the District's Rules for Recycled Water Use and agree to restrict recycled water use for the purposes described in this application. I agree to use recycled water in accordance with these Rules and all other applicable documents. I understand that recycled water may not be compatible with certain types of vegetation because of its chemical composition. I agree that the District will not be liable for damages that may occur to vegetation or for damages which may occur due to uses of recycled water for purposes not included in this application.

Applicant signature: _____ Date: _____

(The District completes the following)

STATUS OF APPLICATION:

_____ Approved
_____ Sent to State Department of Health Services for approval
_____ The Customer needs to submit required fees
_____ The Customer needs to supply additional information
_____ The Customer denied recycled water service
_____ Returned to the Applicant

Comments: _____
_____

12. Service connection(s) size approved? _____ Yes _____ No
    If not, why? _____

    Service location approved? _____ Yes _____ No
    If no, why? _____

13. Use(s) approved? _____ Yes _____ No Comments: _____
    _____

14. Can the District provide requested recycled water service with existing facilities?
    _____ Yes _____ No

    If not, what are the constraints? _____
    _____

15. Is recycled water main extension required? _____ Yes _____ No
    Comments: _____

16. Will this system be initially connected to the potable water system?
    _____ Yes _____ No

17. Describe level and method of backflow protection:
    _____
    _____
    _____

Reviewed by: _____ Date: _____

Title: _____

Appendix B
Checklist/Action Request Form for Obtaining Recycled Water Service

CHECKLIST / ACTION REQUEST FORM FOR OBTAINING RECYCLED WATER SERVICE

To:_____Date:_____

Requested by Applicant: _____

Project Name: _____

Specific Action Requested:_____

_____

Date
Completed

_____ 1. The Applicant and the District determine service availability in accordance with Rules and Regulations.

_____ 2. The Applicant submits a completed application to the District.

_____ 3. Application is approved by the District.

_____ 4. If necessary, application is sent to Department of Health Services for review.

_____ 5. Applicant submits:

_____ Completed irrigation plans
_____ Construction schedule
_____ Required review fees

_____ 6. The District reviews plans.

_____ 7. The District approves the plans & construction schedule prior to construction.

_____ 8. The District sends plans to Department of Health Services.

_____ 9. The Department of Health Services approves plans for the proposed site.

_____ 10. Preconstruction meeting with District, Applicant/Use Site Supervisor and if necessary, Department of Health Services.

_____ 11. The Applicant constructs facilities.

_____ 12. The Applicant submits as-built drawings to the District and requests final inspection.

_____ 13. The District performs final inspection and any cross-connection testing (see * below).

_____ 14. The District issues a Recycled Water Service Permit.

_____ 15. The District activates recycled water service and the Applicant becomes a recycled water Customer.

_____ 16. The District confirms service to the Department of Health Services.

HOW TO USE THIS FORM:

This form is to be used by the Applicant, the District and Department of Health Services to request specific action or items needed to complete the process for obtaining recycled water service. Complete each step in the sequence shown. Make sure the form is dated and signed. This checklist keeps all entities informed of the application process progress and the steps remaining to provide recycled water service.

* **In situations where potable water lines are on the same property and located in the same area as recycled water lines, an initial and an annual cross-connection control site inspection will be required and more frequent inspections may be required, as determined by the Department of Health Services and the Elsinore Valley Municipal Water District.**

Appendix C
Status of Application for Recycled Water Service

STATUS OF APPLICATION FOR RECYCLED WATER SERVICE

To: _____

Date: _____

We received your application for recycled water service for the project(s) listed below. The application has been reviewed by our engineers in accordance with the District's Rules and Regulations for Recycled Water Use and Distribution and the ability of our system to supply you with the quantity of recycled water you have requested. The status of the application is shown below. If you have any questions, please contact _____ _____ (review engineer) at _____ (phone #).

Project name: _____

Application reviewed on: _____

Status: _____ Your application has been approved by the District.

_____ Your application has been sent to the Department of Health Services for further review.

_____ Your application is incomplete, and we request additional information. (See comments)

_____ We require payment of fees before review can be completed.

_____ Your application has been returned. (See comments)

_____ Your application for recycled water service has been denied. (See comments)

Comments: _____

_____

_____

_____

Appendix D
Elsinore Valley Municipal Water District Permit for Recycled Water Service

ELSINORE VALLEY MUNICIPAL WATER DISTRICT
PERMIT FOR RECYCLED WATER SERVICE

Customer Account #:_____

Customer:_____ Contact: _____

Relationship to property: _____

Mailing address: _____

Project/site name: _____

Project/site address: _____

Property owner(s): _____

Mailing address: _____

Telephone number: _____Office) _____(Residence)

Recycled Water Supervisor: _____

24-hour contact telephone number: _____

Approved use(s):
1. _____
2. _____
3. _____

Approved use area(s):
1. _____
2. _____
3. _____

Total irrigated area: _____ acres

Recycled water demand:

Meter Account	Meter Size	Minimum Pressure (PSI)	Maximum Flow (GPM)	Area Serviced (HCF/yr.)	Yearly Consumption

Totals: _____ _____ _____

This is a: _____ NEW _____CONVERTED system.

Method of recycled water pipe identification:

_____ Color-coded with labels

_____ Recycled Water tape wrap

Recycled water service initiated on: _____

This is a:_____ Permanent _____Temporary _____Interim_____Construction
recycled water service to stop on: _____.

Rate charged for service: _____ $/HCF plus additional base charges shown in Appendix 5.

Special requirements/conditions: _____

_____

_____

_____

Final Inspection By the District:

I have inspected the recycled water system governed by this permit and attest that the construction and operation of this system are in accordance with the District's Rules for Recycled Water Use.

Inspector: _____ Date: _____

Title: _____

Customer Agreement:

I have reviewed the District's Rules for Recycled Water Use, and agree to operate this recycled water service in accordance with all provisions of this permit and all applicable documents. I agree to be responsible for training and supervising all personnel under my control who will be involved in operating the recycled water system.

I agree that no changes to the recycled water system will be made without issuance of an amended permit. I am aware of any/all fines and penalties to be assessed for any/all violations of these Rules for recycled Water Use.

Customer's signature: _____ Date: _____

Qualifications of Customer's Recycled Water Site Supervisor:

The Customer shall attach the qualifications of the designated Recycled Water Site Supervisor.

I have reviewed the application package and approve of providing recycled water service in accordance with the provisions contained in this Permit.

Signed: _____ Date: _____

Title: _____

Appendix E
Elsinore Valley Municipal Water District
Valve Box Details

Appendix F
Elsinore Valley Municipal Water District Standard Backflow Prevention Assembly Details

Appendix G

Elsinore Valley Municipal Water District Standard Blow-Off and Air and Vacuum Assembly Details

Appendix H
Recycled Water Site Notification

Recycled Water Site Notification

RECYCLED WATER IS USED AT THIS SITE

Recycled Water

- DO NOT DRINK -

Set the controller to irrigate between the hours of _____ PM and _____ AM.

Spot watering and sprinkler testing can be done manually when personnel are on site and monitoring use. Do not leave unattended if watering outside the normal hours of operation.

CAUTION:

- Adjust spray heads so there is no overspray outside the site.
- Minimize runoff by adjusting sprinklers, and repairing leaks promptly.
- Purple is the color code for recycled water. Use recycled water pipe and parts for repairs. Replace valve box lids, sprinkler heads, quick couplers, and pipe with the correct type.
- Use hose marked for recycled water use for spot watering.
- Report missing or damaged signs to your supervisor.
- Do not use recycled water to wash hands or tools. Wash your hands with soap and potable water (drinking water) after working with the recycled water system.
- All modifications to the irrigation system must be approved. Check with your supervisor before making changes.

CONTACTS:

Landscape Contractor: _____
Your Site Supervisor: _____
Phone Number: _____
Mobile Number: _____
Alternate: _____

Water Supplier: Elsinore Valley Municipal Water District
Specialist:
Phone Number: (951) 674-3146
Mobile Number:
Alternate Number:

Notificacion de Sitio de Agua Reciclada

SE UTILIZA AGUA RECICLADA EN ESTE SITIO

Recycled Water

- NO BEBA EL AGUA -

Coloque el control para irrigar dentro de las horas de _____ PM y _____ AM.

Pruebas de agua y de rociadores se pueden hacer manualmente solamente cuando esté el personal en el sitio observando su uso. Si está regando fuera del horario normal de operación, no lo desatienda.

PRECAUCIÓN:

- Ajuste las cabezas para que no rieguen fuera del sitio.
- Minimice gasto de agua al ajustar los rociadores, y reparando goteras rápidamente.
- El color morado es el código para el agua reciclada. Use pipas y partes reciladas para reparaciones. Reemplace las tapas de las válvulas, las cabezas de los rociadores y las pipas con el tipo correcto.
- Use la manguera marcada para uso de agua reciclada cuando vaya a regar.
- Reporte si faltan o si están dañados los letreros a su supervisor.
- No use agua reciclada para lavarse las manos o herramienta. Lávese sus manos con jabón y agua potable (agua para beber) después de haber trabajado con el sistema de agua reciclada.
- Toda modificación al sistema de irrigación tiene que ser aprobado. Verifique con su supervisor antes de hacer cualquier cambio.

CONTACTOS:

Contratista:	_____
Su Supervisor del Sitio:	_____
Número de Tel:	_____
Número Móvil:	_____
Número Alterno:	_____
Proveedor de Agua:	Elsinore Valley Municipal Water District
Especialista:	
Número de Tel:	(951) 674-3146
Número Móvil:	
Número Alterno:	

Appendix I
Recycled Water Site Inspection Report

Elsinore Valley Municipal Water District

Recycled Water Site Inspection Report

Date: **Site Code & Name:**

A. Site Information:

Reference:

Site Location:

Last Inspection:

Type of Inspection:

___ New Construction ___ Retrofit ___ Annual Inspection ___ Re-Inspection ___ Investigation

Owner Name:

Contact Name: Title:

Address:

City: State: Postal Code:

Phone: FAX:

Landscape Contractor:

Contact Name: Title:

Office Phone: Mobile Phone:

B. Connection Information: Provide Information for each recycled and potable water connection:

No.	User Code	EVMWD Acct.	Meter Number	Size	Pressure	Backflow Prevention Device

Notes:

C. Site Supervisor Information:

Name: Title:

Company:

Phone: Extension:

Pager:

Mobile:

Training/Experience:

Alternate Contact:

Comment:

D. Document Review:

D1. As built plans available for review:	___ Acceptable	___ Unacceptable	
D2. Controller charts available:	___ Acceptable	___ Unacceptable	
D3. Modifications to irrigation system:	___ Acceptable	___ Unacceptable	___ N/A
D4. Significant structural changes:	___ Acceptable	___ Unacceptable	___ N/A
D5. Major modifications shown on plans:	___ Acceptable	___ Unacceptable	___ N/A
D6. Major modifications approved:	___ Acceptable	___ Unacceptable	___ N/A
D7. EVMWD Rules and Regulations available:	___ Acceptable	___ Unacceptable	

E. Survey:

Date of Survey: Start Time: End Time:

E1. Signage: Adequate number and placement:	___ Acceptable	___ Unacceptable	
E2. Signage: Condition:	___ Acceptable	___ Unacceptable	
E3. Signage: Signs on controllers:	___ Acceptable	___ Unacceptable	
E4. Signage: Controller instructions:	___ Acceptable	___ Unacceptable	
E5. Color Coding: Valve boxes:	___ Acceptable	___ Unacceptable	
E6. Color Coding: Irrigation heads:	___ Acceptable	___ Unacceptable	
E7. Color Coding: Valves tagged properly:	___ Acceptable	___ Unacceptable	
E8. Color Coding: Lines and fittings:	___ Acceptable	___ Unacceptable	___ N/A
E9. Connections: Quick couplers:	___ Acceptable	___ Unacceptable	

E10. Connections: Irrigation hoses: ___ Acceptable ___ Unacceptable

E11. Connections: Potable C/S valves: ___ Acceptable ___ Unacceptable

E12. Connections: Recycled Water C/S valves: ___ Acceptable ___ Unacceptable

E13. Separation Between Adjacent Properties: ___ Acceptable ___ Unacceptable

E14. Operation: Normal times of operation:

Times: ___ Acceptable ___ Unacceptable

E15. Precipitation sensor operation: ___ Acceptable ___ Unacceptable ___ N/A

F. Coverage Test:

F1. Ponding: ___ Acceptable ___ Unacceptable

F2. Overspray (Drinking fountains/Eating areas): ___ Acceptable ___ Unacceptable ___ N/A

F3. Spray outside site boundaries: ___ Acceptable ___ Unacceptable

F4. Run off: ___ Acceptable ___ Unacceptable

F5. Misting (eg: Impact of spray with trees.): ___ Acceptable ___ Unacceptable

F6. Leaks: ___ Acceptable ___ Unacceptable

Comment:

G. Cross-Connection Control:

G1. Backflow prevention on potable water services: ___ Acceptable ___ Unacceptable ___ N/A

G2. Protection of potable hose bibbs with AVB's: ___ Acceptable ___ Unacceptable ___ N/A

G3. Separation of Recycled and Potable system: ___ Acceptable ___ Unacceptable ___ N/A

Was a cross-connection test performed at the site? ___ Yes ___ No

Attach records of the test, and summarize the results:

H. Results of Survey and Certification:

According to the results of this survey, is recycled water being used properly at this site?

___ Yes ___ No ___ N/A

Remarks:

Specialist	Signature	AWWA Certif. Number	Date
On-site Supervisor	Signature	Date Received	
Owner Representative	Signature	Date Received	

Number of Attached Pages: ____

Original: Elsinore Valley Municipal Water District

Copy to: ___ SDHS, Drinking Water Field Operations
___ Site Supervisor
___ Owner or Customer