



# Feasibility Study to Serve Recycled Water in the City of Fontana

Draft Report



May 2006



**City of Fontana**  
**Public Works Department**  
**16489 Orange Way**  
**Fontana, CA 92335**  
**(909)350-6760**

April 20, 2006

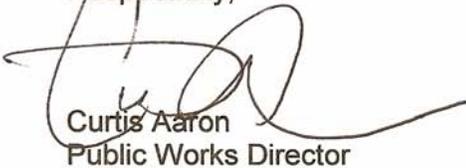
Re: Feasibility Study to Serve Recycled Water in the City of Fontana – Draft Report

Dear Mr. Stakeholders:

The City of Fontana has commissioned Camp, Dresser & McKee Inc. (CDM) to develop a Feasibility Study to Serve Recycled Water in the City of Fontana and its sphere of influence. This Feasibility Study is a refinement of the Inland Empire Utilities Agency's Regional Recycled Water Master Plan as it relates to the City of Fontana potential recycled water demands. The study was conducted to partially address growing concerns in this region regarding water supply issues. Further, the study was conducted to develop an economical action plan and distribution system that can provide a recurring resource of supply to our community and conserve our limited supplies.

The City is seeking comments regarding this Feasibility Study. Please review the document and provide your written comments by May 31, 2006 to the City of Fontana Public Works Department c/o the Director of Public Works.

Respectfully,



Curtis Aaron  
Public Works Director

CA:km

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- Appendix B* Potable Water Rates
- Appendix C* Opinion of Probable Cost

# Executive Summary

## ES.1 Introduction

The Inland Empire Utilities Agency (IEUA) has recently completed a Recycled Water Master Plan of its service area and it is in the process of building a regional recycled water system to provide recycled water to the cities and water utilities located within its service area. IEUA's plan identifies potential agricultural, industrial, and municipal recycled water users as well as groundwater recharge opportunities using recycled water. IEUA's plan identifies a total recycled water demand in the City of Fontana (City) of 4,100 ac-ft per year.

The City is looking at recycled water as a viable alternative due to the rising cost of potable water in the area. The City has recognized the need to utilize recycled water for specific land use applications including agriculture, industrial process, and landscape irrigation. This study, commissioned by the City, identifies the City's potential recycled water demand, evaluates the feasibility of a local recycled water system, and defines a recommended distribution system layout and implementation plan.

The City maintains and operates a local wastewater collection system serving most of its service area and some of the unincorporated pockets in the near vicinity within the County of San Bernardino. Wastewater flows generated within its service area are conveyed to the regional facilities and treated at Regional Plant No. 1 in the City of Ontario or at Regional Plant No. 4 in the City of Rancho Cucamonga. The City does not provide potable water service to its customers.

Water service to the City is provided mainly by the Fontana Water Company (FWC) and the Cucamonga Valley Water District (CVWD). Other water purveyors, including the West Valley Water District (WVWD), the City of Rialto (Rialto), and the Marygold Mutual Water Company (Marygold) serve smaller portions of the City's service area. The current cost of water provided by the FWC and CVWD were estimated at \$763 and \$539 per ac-ft respectively; however, the cost of water from FWC is anticipated to increase close to \$1,000 per ac-ft if FWC's petition to the Public Utilities Commission to increase rates by 32 percent over the next three years is approved.

## ES.2 Potential Recycled Water Demand

The potential users within the City were identified and are categorized into four groups: Parks, Schools, Industrial Users, and Others. The total potential demand for recycled water for all user categories is approximately 8,000 ac-ft per year. Of this amount, approximately 70 percent could be used for irrigation purposes. It should be noted that many existing and future parks and schools within the City limits were not considered for service because of their relative location and the cost to serve them.

IEUA's Implementation Plan identifies over 2,000 potential recycled water customers within IEUA's service area and estimates an ultimate recycled water demand of approximately 93,000 ac-ft per year. Of this amount, approximately 27,000 ac-ft of recycled water are anticipated to be used for groundwater recharge purposes at 17 spreading grounds located throughout the Chino Groundwater Basin. An estimated 38,400 ac-ft per year of recycled water have been identified for irrigation purposes, 5,800 ac-ft per year for industrial use, and approximately 7,000 ac-ft per year for agricultural use. Demand for recycled water at new developments is estimated at approximately 15,000 ac-ft per year.

### **ES.3 Recycled Water Supply**

The population within IEUA's service area is anticipated to increase from the current figure of 788,000 people to approximately 1,050,000 people by the year 2025 representing an increase of 35 percent over current values. During this period, the population in the City of Fontana is expected to grow by 42 percent for the same period from 159,000 to 226,000 people.

Water demand within IEUA's service area is anticipated to increase from 269,600 ac-ft, estimated for 2005, to approximately 330,000 ac-ft per year by the year 2020. Current water demands are supplied primarily by a combination of local groundwater (139,500 ac-ft per year or 52 percent of total) and imported water (83,600 ac-ft per year or 31 percent of total). The remaining seventeen percent is supplied by a combination of local surface water and recycled water.

As population and potable water demand increases over the next 20 years, the availability of recycled water is also anticipated to increase. Wastewater treatment plant capacity at the five regional plants is anticipated to increase from 77.4 mgd in 2005 to approximately 120 mgd by the year 2020 and to a projected 192 mgd for ultimate conditions in response to increasing wastewater flow generation. Daily flows are anticipated to increase from the current rate of 60.8 mgd (68,100 ac-ft per year) to 96.3 mgd (107,900 ac-ft per year) by the year 2020. While some recycled water must be released to the Santa Ana River to meet minimum base flows at Prado Dam under the Santa Ana River Judgment, estimated future supplies of recycled water should be sufficient to meet annual projected recycled water demands.

### **ES.4 Recycled Water Distribution System**

A recycled water system to serve the potential users identified within the City was developed and evaluated based on several criteria. The criteria used are consistent with IEUA's Regional Recycled Water Master Plan. A brief description of how different portions of the City would be served is presented below.

In the southern portion of the City, the proposed recycled system would connect to proposed regional pipelines off the 1158 Zone. The regional plan identifies a 24-inch pipeline along Jurupa Avenue to the existing RP-3 site. The local recycled water system in that area would include an extension of the regional line along Jurupa Avenue to serve the Valley Trails development in south eastern Fontana and would include a number of laterals to serve local parks and schools.

The central portions of the City would be served by regional pipelines operating in the 1270 and 1430 zones. In the 1270 Zone, proposed regional facilities in that area include a 16-inch line to serve the Hickory and Banana basins. This regional line, according to IEUA staff, may be extended east to deliver recycled water for groundwater recharge at the Tokay Basin. The local system would tie to the end of this proposed line to deliver to the 1270 East and 1430 East zones.

The northern portions of the City would be served off the 1630. Regional facilities in this zone include a 36-inch/24-inch pipeline to deliver recycled water for groundwater recharge to the Etiwanda and San Sevaine spreading grounds. This pipeline may need to be upsized to accommodate the additional recycled water demands identified in this study in the 1830 Zone. The local system would include a pump station and transmission facilities to serve potential users in that area including Fontana Park, Sierra Lakes Golf Course, and recycled water demands in the Summit and Rosena and the Arboretum at Fontana North developments.

## **ES.5 Opinion of Probable Cost**

A summary of demand, capital cost, and average annual cost per ac-ft for the proposed distribution system is summarized in Table ES-1. The capital cost to implement the proposed system is estimated at \$36,400,000. The average unit cost, estimated at \$420 per ac-ft, is significantly lower than the current cost of potable water charged by the two main water purveyors.

The cost to serve the Village of Heritage, estimated at \$150 per ac-ft, is based on the assumption that this portion of the system would be incorporated as part of the overall regional system since it benefits two regional agencies, CVWD and the City of Fontana.

**Table ES-1  
Recycled Water Facilities**

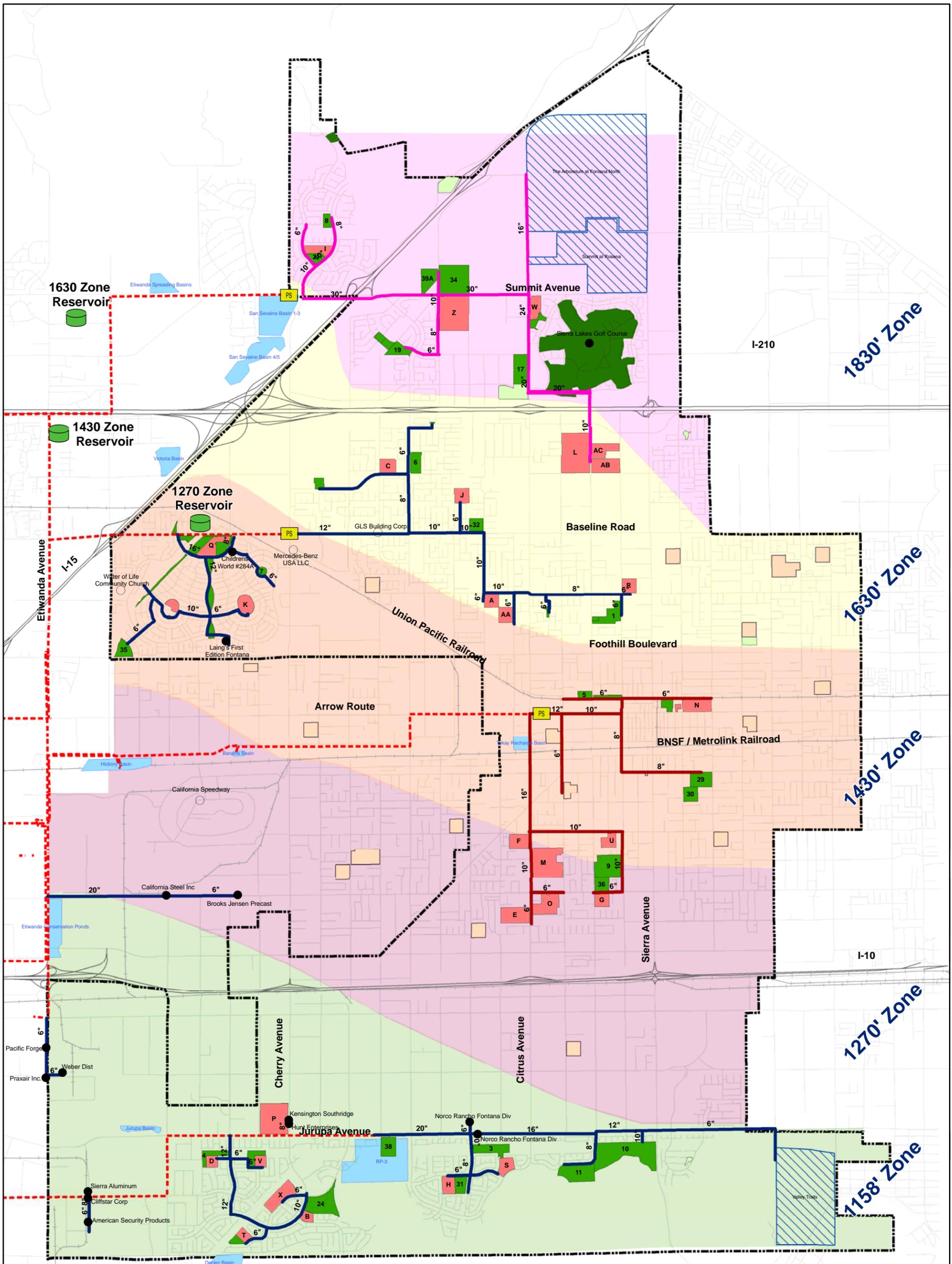
| <b>Zone</b>          | <b>Demand<br/>(ac-ft/yr)</b> | <b>Capital</b> | <b>Cost per ac-ft</b> |
|----------------------|------------------------------|----------------|-----------------------|
| 1158 Zone            | 1,977                        | \$7,500,000    | \$352                 |
| 1270 Zone (West)     | 1,243                        | \$2,500,000    | \$225                 |
| 1270 Zone (East)     | 543                          | \$3,300,000    | \$512                 |
| 1430 Zone (Heritage) | 558                          | \$0            | \$150                 |
| 1430 Zone (East)     | 331                          | \$3,100,000    | \$791                 |
| 1630 Zone            | 455                          | \$4,600,000    | \$826                 |
| 1830 Zone            | 2,977                        | \$15,400,000   | \$477                 |
| All Zones            | 8,084                        | \$36,400,000   | \$420                 |

## ES.5 Capital Improvement Program

Based on the distribution system evaluation, the proposed system development has been grouped into three main phases as follows:

- Phase 1 facilities provide recycled water to the potential users located in the 1158 Zone, 1270 Zone (West), 1430 Zone (Heritage), and the 1630 Zone. Estimated capital cost: \$14,600,000.
- Phase 2 facilities include the development of a distribution system to serve the 1830 Zone. These facilities include a 1,000 hp pumping station and distribution pipelines. Estimated capital cost: \$15,400,000.
- Priority 3 facilities include the expansion of the distribution system to include the central portions of the City. This portion of the system will serve the 1430 Zone (East) and 1270 Zone (East) and will generally include a pumping station and distribution pipelines. Estimated capital cost: \$6,400,000.

The map of the proposed system phases is presented in Figure ES-1 and a breakdown of estimated unit costs is illustrated in Figure ES-2.



NOTE: See Figure 3-1 for List of Potential Schools and Parks To Be Served.

**Legend**

- Private Users
- ▭ City Boundary
- ▭ Schools To Be Served
- ▭ Schools Not Served
- ▭ Parks To Be Served
- ▭ Parks Not Served
- ▭ Specific Plans
- ▭ Regional Spreading Basins

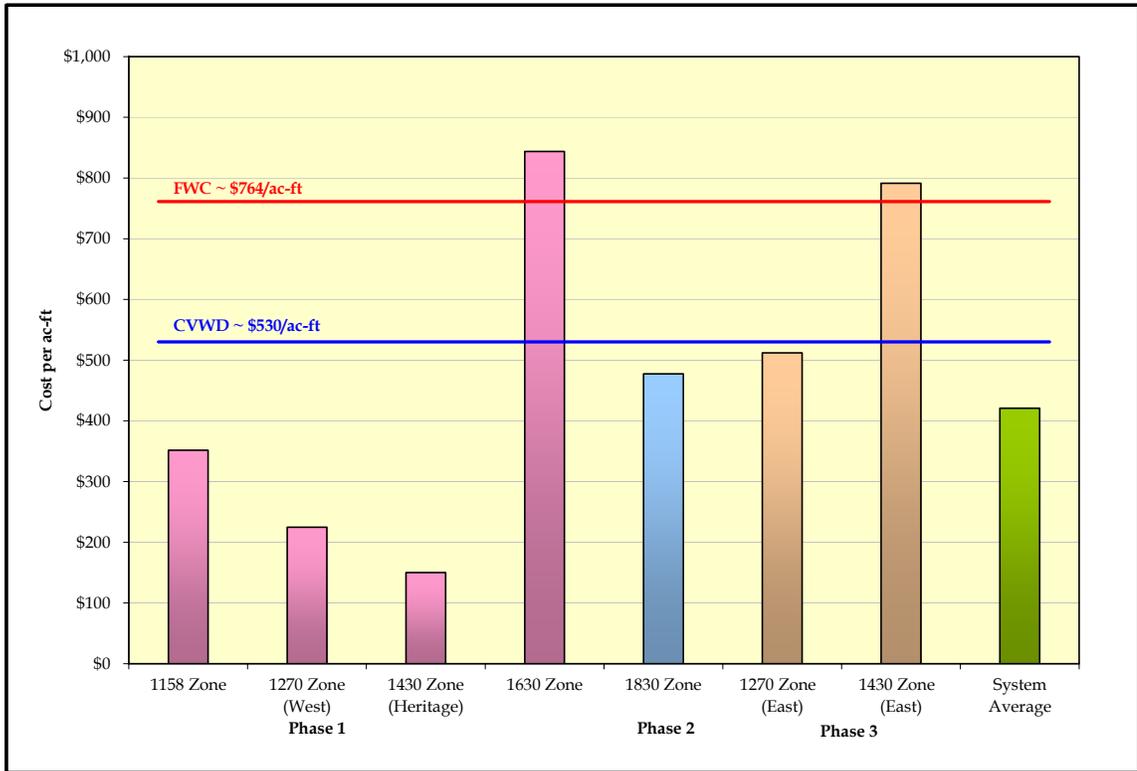
**Pipelines**

- Phase 1
- Phase 2
- Phase 3
- - - IEUA Pipelines



**Figure ES-1**  
**City of Fontana,**  
**Feasibility Study**  
**Recycled Water System**





**Figure ES-2**  
**Capital Improvement Program**  
**Estimated Recycled Water Unit Cost**

## ES.6 Conclusion

This feasibility study identifies a potential demand for recycled water of approximately 8,000 ac-ft per year throughout the City. A significant portion of this demand could be served over the next 10 years as IEUA plans to build a significant number of regional pipelines over this period that would enable the development of a recycled water system to serve the City. Further, development of said system would provide recycled water for irrigation of parks, schools and other landscape areas as well as for industrial use at a cost significantly lower than the cost of potable water currently being charged by CVWD and FWC.

# Section 1

## Introduction

### 1.1 Background and Purpose

The City of Fontana (City) concerned with the significant increase in the cost of potable water and the limited availability of imported water to meet ultimate water demands, commissioned this study to evaluate the feasibility of using recycled water from the Inland Empire Utilities Agency's regional facilities to irrigate the City's parks, school grounds, street medians, and to supply selected industrial users in the area. The City's plan builds on the regional plan prepared by IEUA and focuses on the City's service area.

The Inland Empire Utilities Agency (IEUA), formerly known as the Chino Basin Municipal Water District, was initially formed to import supplemental water from Metropolitan Water District of Southern California (MWD) to augment local surface and groundwater supplies. Since its inception, IEUA has expanded its services to include regional collection and treatment of wastewater, desalination of groundwater supplies, disposal of non-reclaimable industrial waste and brine, and the production and distribution of recycled water. IEUA's regional wastewater collection and treatment system receives flows from the cities of Chino, Ontario, Fontana, Montclair, Chino Hills, Upland and Rancho Cucamonga and includes five regional wastewater treatment plants.

IEUA has recently completed a Recycled Water Master Plan of its service area and it is in the process of building a regional recycled water system to provide recycled water to the cities and water utilities located within its service area. IEUA's plan identifies potential agricultural, industrial, and municipal recycled water users as well as groundwater recharge opportunities using recycled water.

The City maintains and operates a local wastewater collection system serving most of its service area and some of the unincorporated pockets in the near vicinity within the County of San Bernardino. Wastewater flows generated within its service area are conveyed to the regional facilities and treated at Regional Plant No. 1 in the City of Ontario or at Regional Plant No. 4 in the City of Rancho Cucamonga. The City does not provide potable water service to its customers.

Water service to the City is provided mainly by the Fontana Water Company (FWC) and the Cucamonga Valley Water District (CVWD). Other water purveyors, including the West Valley Water District (WVWD), the City of Rialto (Rialto), and the Marygold Mutual Water Company (Marygold) serve smaller portions of the City's service area. The current cost of water served by the FWC and CVWD were estimated at \$763 and \$539 per ac-ft respectively. It should be noted that court hearings are currently being conducted to consider a petition by the FWC to increase water rates in its service area over the next three years by approximately 32 percent. This increase, if approved, would bring the cost of water close to \$1,000 per ac-ft.

Due to growing water demands in the Chino Basin and the limited availability of imported water sources to meet projected water demands, alternate sources of supply have become an important issue. For this reason and the ever increasing cost of potable water, the City retained the services of Camp Dresser & McKee Inc. (CDM) to evaluate the use of recycled water as a viable option for specific land type applications including agriculture, industrial process, landscape irrigation, and groundwater recharge.

## 1.2 Project Scope

The scope of this Feasibility Study includes the following major tasks.

- Collection of existing data and information on water demands associated with landscape irrigation for city parks, schools, golf courses, and other large irrigation customers.
- Collection of existing data and information on water demands for up to twenty industrial and commercial users.
- Based on the data collected, develop overall demand projections for recycled water within the City of Fontana.
- Develop a preliminary layout of a local recycled water distribution system extending from IEUA's regional facilities into the City of Fontana.
- Develop a preliminary opinion of probable cost and conduct an economic analysis of recycled water distribution system facilities.
- Conduct a review of the regional groundwater recharge program and the potential benefits to the City.

## 1.3 Feasibility Study Organization

This report consists of four sections and appendices. Each section is briefly described below:

Section 1 – Provides the background and purpose of the study, the project scope, and the organization of the report.

Section 2 – Describes the regional recycled water master plan and distribution system developed by IEUA.

Section 3 – Develops the potential recycled water demand for the City of Fontana.

Section 4 – Describes the proposed local recycled water distribution system, presents the evaluation and economic analysis for implementation, describes the Capital Improvement Program, and the integration issues between the IEUA's regional system and the local recycled water distribution system.

## Section 2

# Regional Recycled Water Implementation Plan

The purpose of this section is to summarize the recently completed Recycled Water Implementation Plan by IEUA for its service area. The plan provides IEUA with an overview of current and projected recycled water demands, available supplies, and a recommended regional transmission and distribution system to serve recycled water throughout its service area.

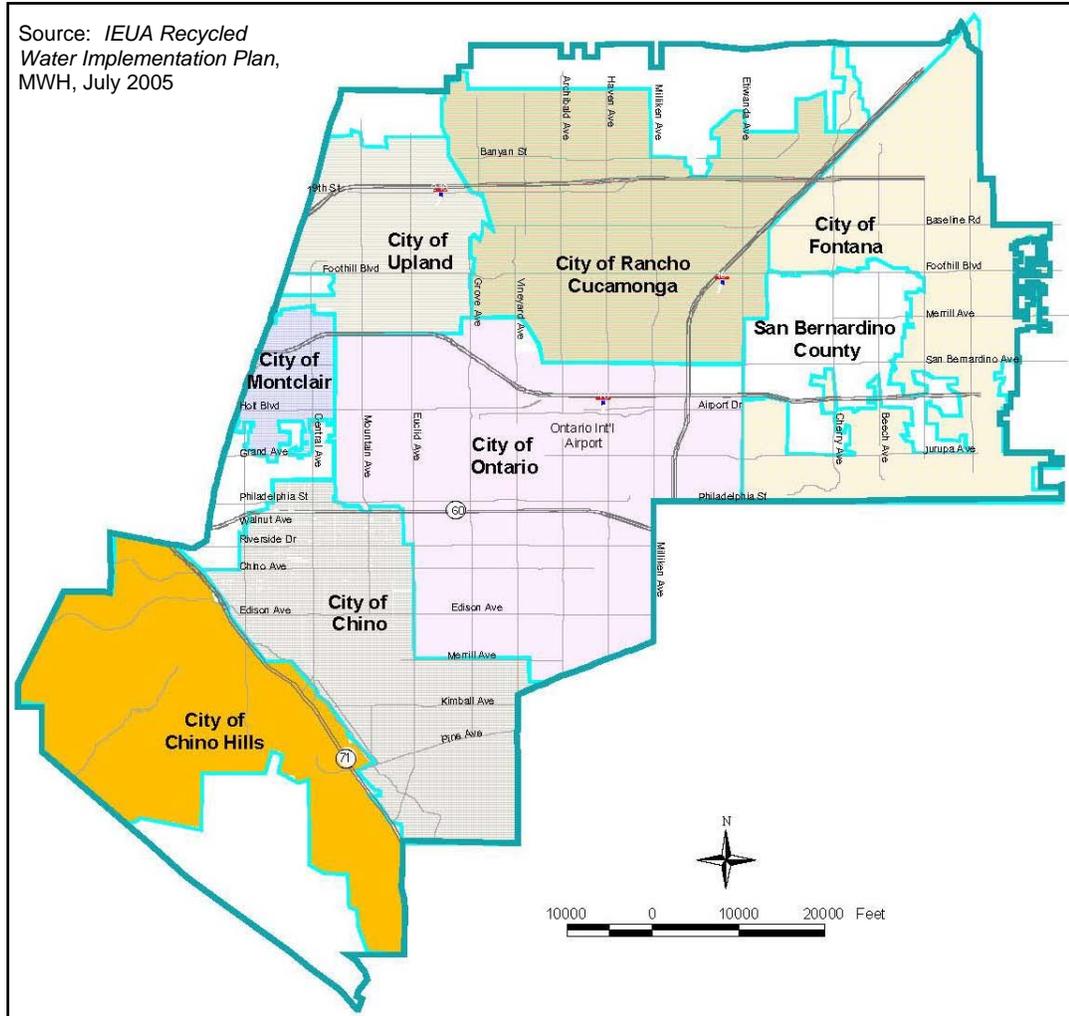
IEUA serves an area of approximately 242 square miles in the southwestern portion of San Bernardino County and includes the cities of Chino, Chino Hills, Fontana, Montclair, Ontario, Rancho Cucamonga, and Upland, and some unincorporated areas of San Bernardino County as shown in Figure 2-1.

IEUA owns and operates regional sewer pipelines that convey wastewater from all cities located within its service area. Wastewater is treated at one of the five regional wastewater reclamation plants: regional plants 1, 2, 4, and 5 and the Carbon Canyon Wastewater Reclamation Facility.

### 2.1 Recycled Water Demands

Currently, there are over 100 active recycled water users within the cities of Chino, Chino Hills, Ontario, and Rancho Cucamonga being served by IEUA. The combined recycled water demand of these users is estimated at approximately 8,000 ac-ft per year.

IEUA's Implementation Plan identifies potential future users of recycled water and groups them into five distinct categories; (a) Agricultural Users, (b) Industrial Users, (c) Irrigation Users, (d) Spreading Basins for groundwater recharge, and (e) New Developments. The study identifies over 2,000 potential recycled water customers within IEUA's service area and estimates an ultimate recycled water demand of approximately 93,000 ac-ft per year. Of this amount, approximately 27,000 ac-ft of recycled water is anticipated to be used for groundwater recharge purposes at 17 spreading grounds located throughout the Chino Groundwater Basin. An estimated 38,400 ac-ft per year of recycled water has been identified for irrigation purposes, 5,800 ac-ft per year for industrial use, and approximately 7,000 ac-ft per year for agricultural use. Demand for recycled water at new developments is estimated at approximately 15,000 ac-ft per year.



**Figure 2-1**  
IEUA Service Area

The breakdown of potential annual recycled water demand by water purveyor includes 28,000 ac-ft for IEUA, 19,000 ac-ft for the City of Ontario, 16,300 ac-ft for the Cucamonga Valley Water District, 16,000 ac-ft for the City of Chino and 6,000 ac-ft for the City of Chino Hills. A recycled annual water demand of 4,100 ac-ft has been identified in the regional study for the Fontana Water Company’s service area. Other smaller potential recycled water demands have been identified for the City of Upland, the Monte Vista Water District, and the Jurupa Community Services District.

## 2.2 Recycled Water Supply

The population within IEUA's service area is anticipated to increase from the current figure of 788,000 people to approximately 1,050,000 people by the year 2025 representing an increase of 35 percent over current values. The cities of Ontario and Fontana would experience the most significant growth in population over the next 25 years. The population in the City of Ontario is anticipated to increase from 171,000 to 276,000 people by the year 2025 representing an increase of 61 percent. Similarly, the population in the City of Fontana is expected to grow by 42 percent for the same period from 159,000 to 226,000 people.

Water demand within IEUA's service area is anticipated to increase from 269,600 ac-ft, estimated for 2005, to approximately 330,000 ac-ft per year by the year 2020. Current water demands are supplied primarily by a combination of local groundwater (139,500 ac-ft per year or 52 percent of total) and imported water (83,600 ac-ft per year or 31 percent of total). The remaining seventeen percent is supplied by a combination of local surface water and recycled water.

Water conservation and recycled water constitute important components to the future water supply mix to meet anticipated demands. The use of recycled water is estimated to increase to 76,000 ac-ft per year by the year 2020; this would reduce the demand for imported water by a similar amount. Recycled water can reduce the dependency on imported water by either offsetting potable water demands through reuse for irrigation and industrial purposes or through groundwater recharge to augment the local groundwater production of potable water from the Chino Basin.

As population and potable water demand increase over the next 20 years, the availability of recycled water is also anticipated to increase. Wastewater treatment plant capacity at the five regional plants is anticipated to increase from 77.4 mgd in 2005 to approximately 120 mgd by the year 2020 and to a projected 192 mgd for ultimate conditions in response to increasing wastewater flow generation. Daily flows are anticipated to increase from the current rate of 60.8 mgd (68,100 ac-ft per year) to 96.3 mgd (107,900 ac-ft per year) by the year 2020. While some recycled water must be released to the Santa Ana River to meet minimum base flows at Prado Dam under the Santa Ana Rive Judgment, estimated future supplies of recycled water should be sufficient to meet annual projected recycled water demands.

## 2.3 Recycled Water Regional System

### 2.3.1 Existing Recycled Water Regional System

IEUA's existing system, shown in Figure 2-2, consists of approximately 35 miles of pipelines serving customers in four different pressure zones. Some of the main transmission facilities in the existing system include a 42-inch RP-4 Outfall used to convey recycled water in both directions between Regional Plant No. 1 in the City of Ontario and Regional Plant No. 4 in the easterly portion of the City of Rancho Cucamonga. Other existing main transmission lines, also illustrated in Figure 2-2, include the 30-inch RP-1 Outfall that ties the RP-1 and RP-5 systems, and other smaller lines off the Carbon Canyon Water Reclamation Facility.

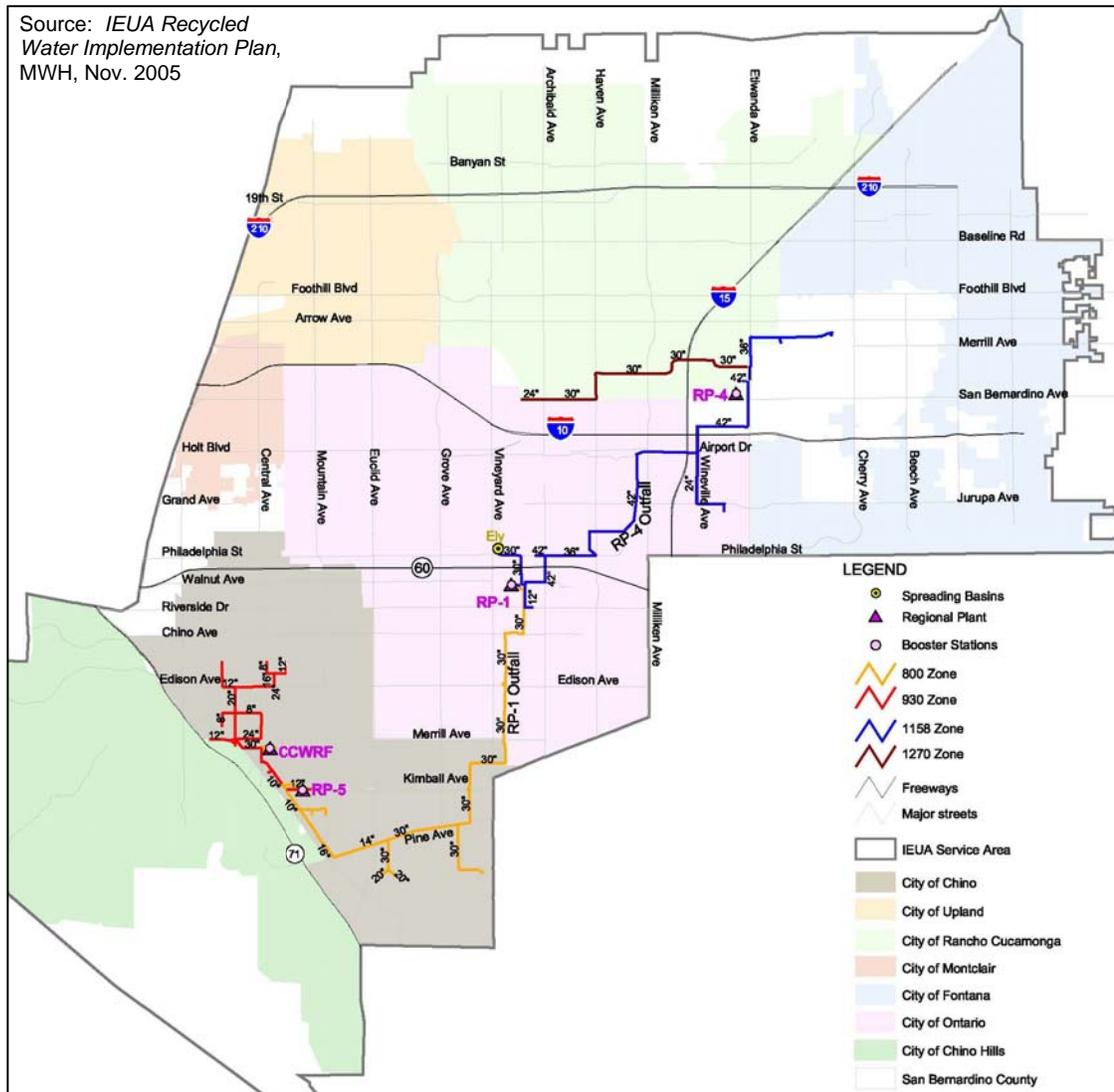
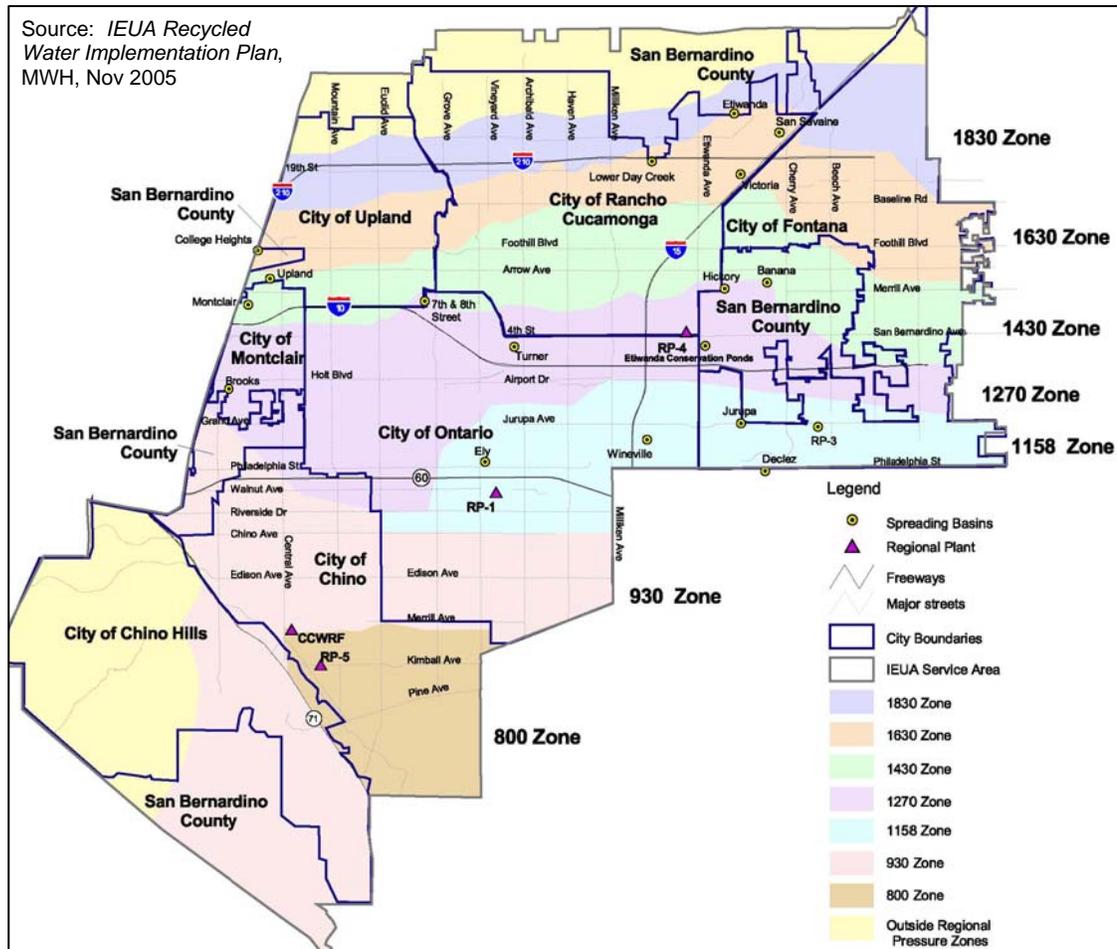


Figure 2-2  
Existing Recycled Water Regional System

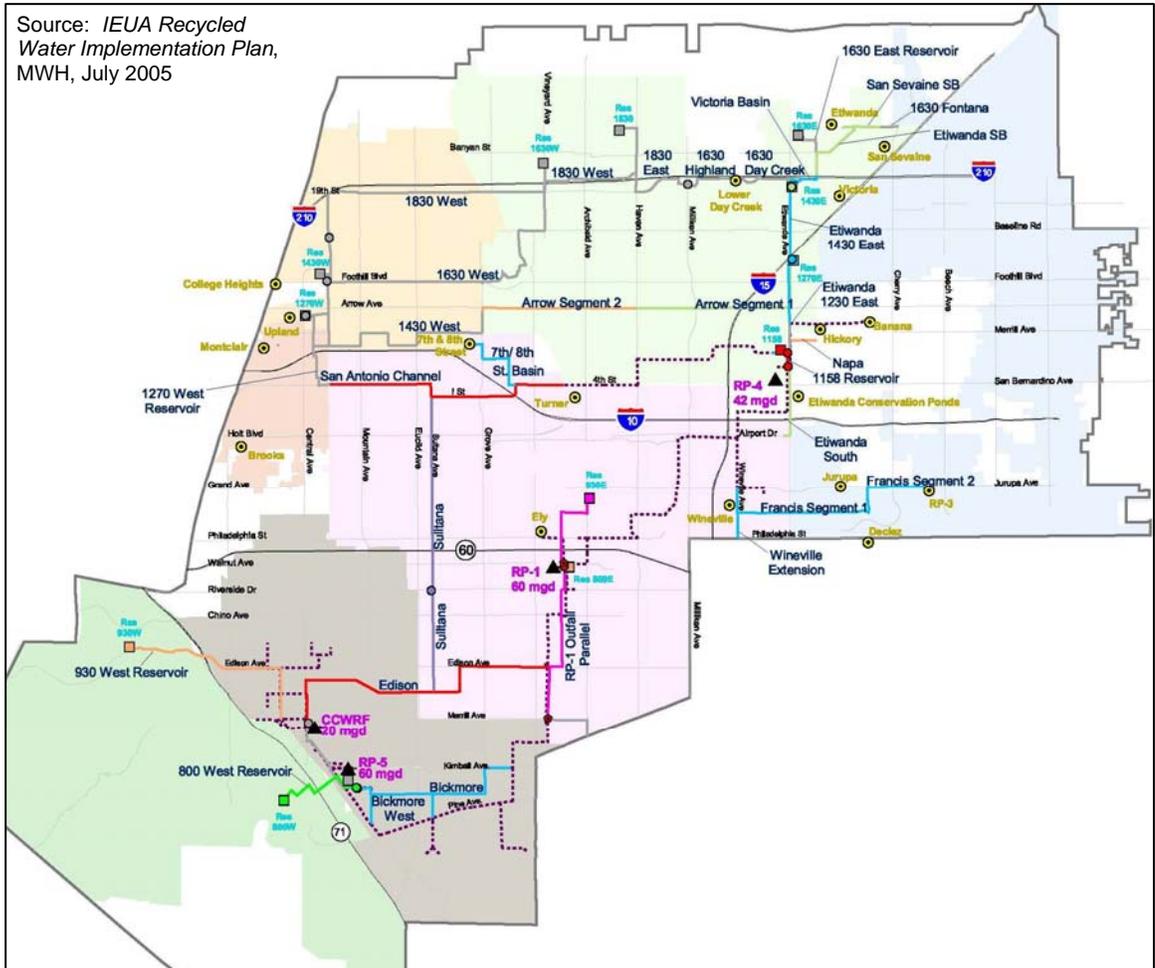
Figure 2-3 illustrates the approximate location of the seven pressure zones identified in the study within IEUA’s service area. It should be noted that the pressure zone naming designation reflected in this figure is not consistent with the zones used in this report as they are currently being revised by IEUA. The naming designation for individual pressure zones is based on the high water level elevation at storage reservoirs.



**Figure 2-3**  
Regional Recycled Water System Pressure Zones

### 2.3.2 Proposed Recycled Water Regional System

A proposed recycled water transmission and distribution system was sized to meet identified ultimate demands in the service area and it is illustrated in Figure 2-4. The proposed system is limited to the regional pipelines and facilities and does not include any laterals to serve specific users. The system main components include:



**Figure 2-4  
Regional System Implementation Priorities**

- 18 storage reservoirs at 13 sites with a combined capacity of 110 million gallons
- 35 regional pipeline segments with a total length exceeding 92 miles and ranging in size from 12-inches to 42-inches in diameter
- 13 new pump stations with a combined capacity, including backup capacity, of 207,000 gallons per minute and a combined 14,950 horsepower
- 17 regional spreading basins with a combined annual demand of approximately 26,800 ac-ft per year.

Figure 2-4 indicates that four major storage facilities would be located along Etiwanda Avenue in the City of Rancho Cucamonga. These facilities and their associated transmission lines and pump stations would be instrumental on the development of a recycled water system for the City. They are as follows:

- 1158 Pressure Zone - Regional Plant No. 4 Reservoir Site. This site, located north of the existing RP-4 water reclamation facility, along the west side of Etiwanda Avenue, would ultimately have three storage tanks with a combined storage capacity of 17 million gallon.
- 1270 Pressure Zone - East Side Reservoir Site – This reservoir site, anticipated to be constructed in the vicinity of Etiwanda Avenue and Interstate 15, would ultimately have two storage tanks with an 11.0 million gallon storage combined capacity. An alternate location for a reservoir at this elevation (1,270 ft), being considered by IEUA, is in one of the parks in the Village of Heritage in the City of Fontana. This alternate location is used in this feasibility study for the sizing and alignment of recommended facilities to serve recycled water in the City.
- 1430 Pressure Zone - East Side Reservoir Site – This reservoir site would be located in the vicinity of Etiwanda Avenue and the 210 Freeway and would consist of a single storage facility with a 5.0 million gallon storage capacity.
- 1630 Pressure Zone - East Side Reservoir Site – This reservoir site would be located north of the 210 freeway and east of Etiwanda Avenue and it would be the highest reservoir on the east side of IEUA’s regional system. Ultimately, this site would have two storage facilities with combined storage capacity of 14.0 million gallons.

### 2.3.3 Implementation Schedule

The capital improvement program outlined in IEUA’s Recycled Water Implementation Plan identifies eight different priorities from A through H. The implementation plan indicates that all facilities in priorities A through G, approximately 85 percent of the facilities, would be build over the next 10 years. Proposed facilities that are needed for the development of a recycled water system to serve the City are included under priorities A, B, and E of the regional program. These facilities, illustrated in Figure 2-4, are listed below for each respective priority.

#### Priority A

- 1158 Zone and RP-4 Reservoirs 1 and 2 – 11.0 MG
- 1270 Zone East Booster Station Phase I – 650 Hp
- RP-4 – 1158 Zone Booster Station Phase I – 650 Hp

#### Priority B

- Etiwanda 1270 Zone East Pipeline – 6,400 ft
- Etiwanda 1430 Zone East Pipeline – 7,400 ft
- Francis Segment 1 Pipeline – 10,600 ft
- Francis Segment 2 Pipeline – 12,100 ft
- Victoria Basin Pipeline – 4,100 ft

- 1270 Zone East Reservoir – 5.5 MG
- 1430 Zone East Booster Station – 1,000 Hp

**Priority E**

- Etiwanda South Pipeline – 8,000 ft
- Etiwanda Spreading Basins Pipeline – 8,800 ft
- San Sevaine Spreading Basins Pipeline – 2,700 ft
- 1430 Zone East Reservoir – 5.0 MG
- 1630 Zone East Booster Station – 950 Hp

Additional regional facilities that would be needed to provide recycled water to the northern portions of the City of Fontana, and that are anticipated to be constructed beyond the initial 10-year time frame, are included under Priority H of the regional plan and are listed below.

**Priority H**

- 1630 Zone East Reservoir Pipeline – 3,000 ft
- 1630 Zone Fontana Pipeline – 1,900 ft
- 1630 Zone East Reservoir – 7.0 MG

**2.3.4 Economics of Regional System**

Based on Ordinance No. 69 and Resolution No. 2001-6-16 approved by the IEUA Board of Trustees, the water base rate for recycled water was set at \$60 per ac-ft. This water rate is based on the following components:

|   |                          |
|---|--------------------------|
| Regional Tertiary O&M Cost                                | \$23.23 per ac-ft        |
| Regional Wastewater Treatment System<br>O&M Cost Recovery | \$15.24 per ac-ft        |
| Regional Pump Cost  | <u>\$21.53 per ac-ft</u> |
| TOTAL O&M Base Cost                                       | \$60.00 per ac-ft        |

This rate per ac-ft is applicable to any delivery of recycled water within IEUA’s regional transmission and delivery system regardless of elevation or location within its service area.

## 2.3.5 Legal and Institutional Issues

### Chino Basin Watermaster

Groundwater extractions and replenishment of the groundwater basin are regulated by the 1978 Chino Basin Judgment (Chino Basin Municipal Water District vs. the City of Chino). Under the Judgment, the Chino Basin Watermaster is responsible for administering adjudicated water rights and managing groundwater resources within the Chino Groundwater Basin. The Judgment sets the groundwater extraction rights of individual pools and individual agencies within the Appropriate Pool.

Under the Judgment, water agencies can extract as much water as needed as long as pumping exceeding the agency's rights is replenished. Historically, replenishment of the basin has been accomplished by either transfers of water between individual agencies as part of their local storage accounts and/or by asking the Watermaster to buy imported water.

The development of a recycled water system in the Chino Basin brings an additional supply source that can be used by Watermaster and/or individual agencies to fulfill their replenishment obligations as wastewater contracting agencies have the right of first refusal on the use of recycled water.

### First Right of Refusal

The IEUA Regional Sewerage Service Contract defines the ownership and right of first purchase of recycled water from IEUA's regional plants. Each contracting agency within the Chino Basin has the right to purchase recycled water equal to the percentage delivered to IEUA's sewerage system. It is the intent of IEUA to assist the contracting agencies in marketing the maximum amount of recycled water possible.

In the case of the City of Fontana, wastewater flows generated within the City's service area are approximately 20 percent of the total wastewater flows treated in IEUA's service area. This gives the City the right of first refusal to approximately 20 percent of the recycled water generated by the regional reclamation facilities after discharge requirements to maintain minimum flows at Prado Dam, under the 1969 San Ana River Judgment, are met. This Judgment establishes the treated wastewater flow contributions for all regional agencies in the Santa Ana River above Prado Dam; IEUA's discharge requirement is 16,875 ac-ft per year under the Judgment.

### DHS Requirements

Recycled water produced from each of IEUA's regional treatment plants meets the DHS Title 22 requirements for Non-restricted Recreational Use (full body contact).

### 2.3.6 System Operation

The regional recycled water pump stations located at RP-1 and RP-4 will serve as the primary pumping stations for delivery of recycled water throughout the northern and central portions of IEUA's service area. The outfall line that connects RP-4 and RP-1 was constructed as a pressure pipeline to allow pumping of recycled water from RP-1 to RP-4 when daily recycled water demands in the north exceed the available supply from RP-4. Additional booster pump stations located throughout the regional system will provide recycled water to higher elevations. The southern portion of the service area will be served primarily by gravity through the RP-1 outfall line. IEUA's southern wastewater reclamation plants (RP-2, RP-5, and CCWRF) will also be part of the southern system.

# Section 3

## City of Fontana Potential Recycled Water Demand

The purpose of this section is to present the potential recycled water demands within the City of Fontana's service area.

### 3.1 Potential Recycled Water Users

Potential recycled water users within the City limits were identified based on information obtained from IEUA's Recycled Water Implementation Plan and additional information provided by the City. Potential users were categorized into four groups: (a) parks, (b) landscape areas in Community Facility Districts (CFD) and Landscape Management Districts (LMD), (c) schools, and (d) industrial and commercial users. Recycled water demands were also considered for groundwater recharge and for new developments. Figure 3-1 depicts the location of all parks and schools in the City and segregates them based on whether or not they could be served with recycled water.

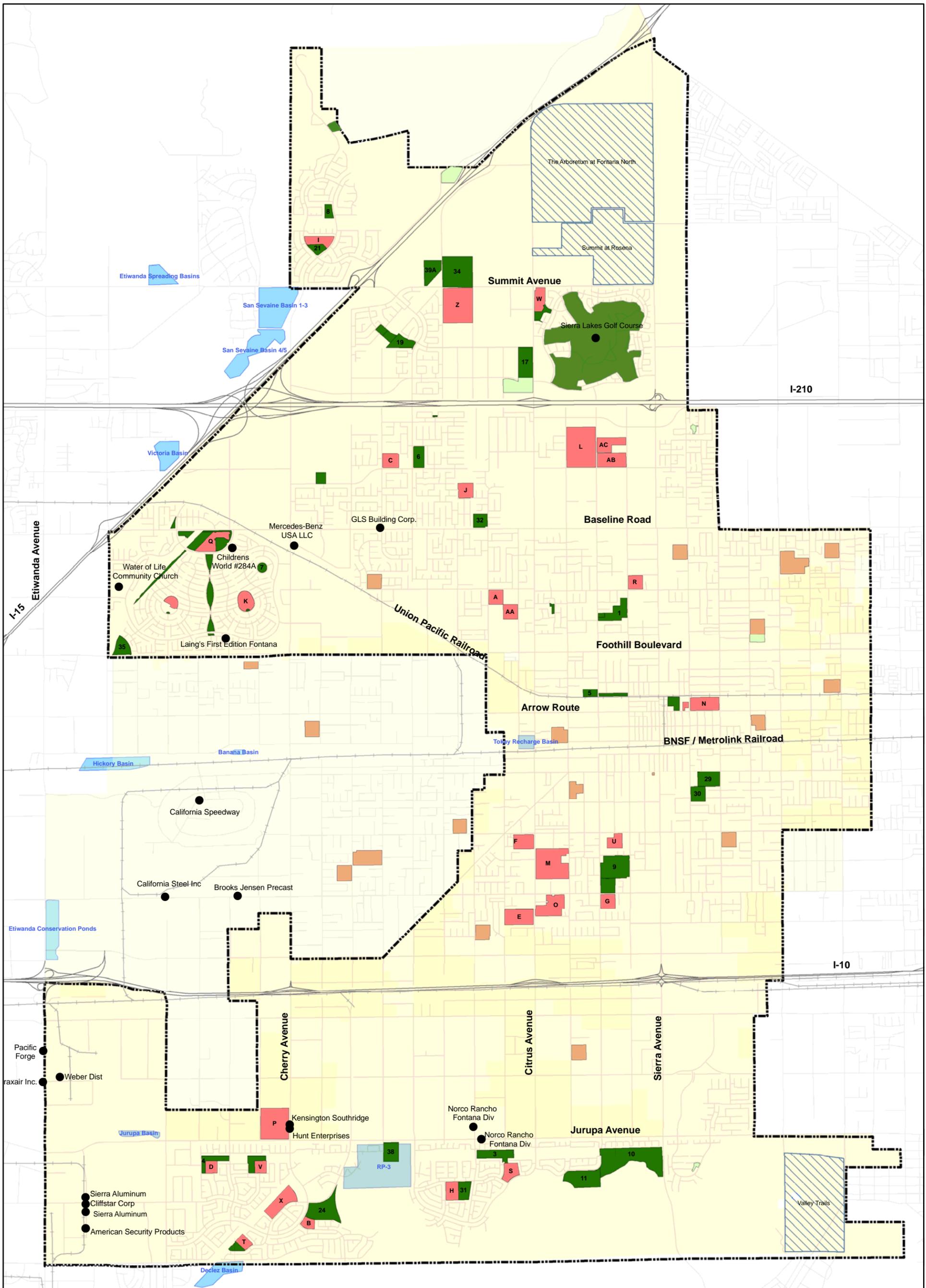
#### 3.1.1 Parks

A total of 56 existing and proposed parks representing approximately 625 acres of land were identified as potential users within the City limits. The total recycled water demand for all these parks is estimated at approximately 3,450 ac-ft per year. Parks constitute the largest potential user of recycled water.

#### 3.1.2 Landscape Areas CFD/LMDs

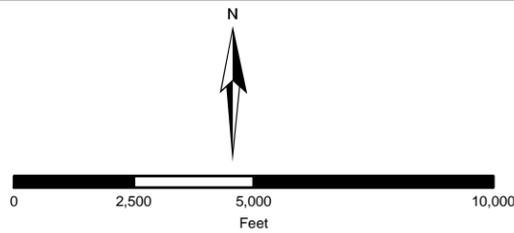
As development continues to take place in the City of Fontana, the City has formed special assessment districts to maintain landscape common areas. These areas, identified as Community Facility Districts (CFDs) and Landscape Maintenance Districts (LMDs), are used for internal City bookkeeping and are maintained by City staff. Each of these areas contains landscaped center medians, parkways, and common areas. A detailed evaluation of each CFD and LMD area was not conducted for this study; however, recycled water demand for CFDs and LMDs located in near proximity to proposed regional or local delivery pipelines were considered. For planning purposes it was assumed that 70 percent of the landscaped area could be served by the recycled water system.

Table 3-1 indicates the existence of 34 separate CFD/LMDs that could be served with recycled water. These locations represent an area of approximately 80 acres with a potential recycled water demand of approximately 480 ac-ft per year.



**Legend**

- Private Users
- ▭ Specific Plans
- ▭ Regional Spreading Basins
- ▭ City Boundary



Note: Lists of Potential Schools and Parks to be Served on Subsequent Page.

**Figure 3-1**  
**City of Fontana,**  
**Feasibility Study**  
**Potential Recycled Water Users**



List of Potential Parks and Schools to be served by Recycled Water System – See Figure 3-1 for Location.

| POTENTIAL PARKS TO BE SERVED |   |
|------------------------------|---|
| ID                           | NAME  |
| <b>EXISTING PARK</b>         |   |
| 1                            | BILL MARTIN PARK                                    |
| 2                            | CALIFORNIA LANDINGS SPECIFIC PLAN POCKET PARK       |
| 3                            | CATAWBA PARK  |
| 4                            | CHAPARRAL PARK                                      |
| 5                            | CYPRESS CENTER AND JOSEPHINE KNOPF SENIOR CENTER    |
| 6                            | DR. CHARLES A. KOEHLER PARK                         |
| 7                            | HERITAGE CIRCLE PARK                                |
| 8                            | HUNTER'S RIDGE PARK                                 |
| 9                            | JACK BULIK COMMUNITY CENTER AND PARK                |
| 10                           | MARTIN TUDOR JURUPA HILLS REGIONAL PARK             |
| 11                           | MARY VAGLE MUSEUM AND NATURE CENTER                 |
| 12A                          | McDERMOTT SPORTS COMPLEX (POOL COMPLEX)             |
| 12B                          | McDERMOTT SPORTS COMPLEX (SOCCER FIELDS)            |
| 12C                          | McDERMOTT SPORTS COMPLEX (TENNIS COURT AREA)        |
| 13                           | MILLER COMMUNITY CENTER AND PARK                    |
| 14                           | NORTH HERITAGE PARK                                 |
| 15                           | NORTHGATE PARK                                      |
| 16                           | OAK PARK  |
| 17                           | RALPH M. LEWIS MEMORIAL SPORTS COMPLEX              |
| 18                           | ROSENA PARK COMMON AREA                             |
| 19                           | ROSENA PARK EAST                                    |
| 20                           | ROSENA PARK WEST                                    |
| 21                           | SAN SEVAINE PARK                                    |
| 22                           | SEVILLE PARK AND AMPHITHEATER                       |
| 23                           | SHADOW PARK   |
| 24                           | SOUTHRIDGE COMMUNITY PARK, DON DAY COMMUNITY CENTER |
| 25A-H                        | V. OF H. COMMON AREA                                |
| 26                           | V. OF H. PLAYGROUND (EAST CONSTITUTION WAY)         |
| 27                           | V. OF H. PLAYGROUND (WEST CONSTITUTION WAY)         |
| 28                           | V. OF H. UTILITY CORRIDOR, COMMON AREA AND TRAIL    |
| 29                           | VETERANS' PARK                                      |
| 30                           | VETERANS' PARK WEST                                 |
| 31                           | VILLAGE PARK  |
| <b>FUTURE PARK</b>           |   |
| 32                           | ALMERIA BASIN PARK                                  |
| 33                           | BILL MARTIN PARK                                    |
| 34                           | FONTANA PARK  |
| 35                           | GATEWAY PARK  |
| 36                           | JACK BULIK PARK 2                                   |
| 37                           | PATRICIA MARRUJO PARK                               |
| 38                           | RP-3 PARK   |
| 39 A-B                       | WESTGATE SPECIFIC PLAN PARK                         |

| PARKS NOT SERVED BY SYSTEM                                |  |
|---|--|
| NAME  |  |
| <b>EXISTING PARK</b>                                      |  |
| CAMBRIA PARK  |  |
| FIESTA PARK   |  |
| JESSIE TURNER COMMUNITY CENTER / DOROTHY GRANT HEAD START |  |
| NORTH TAMARIND PARK                                       |  |
| SANTA FE PARK   |  |
| <b>FUTURE PARK</b>  |  |
| COYOTE CANYON SPECIFIC PLAN PARK                          |  |
| WILDERNESS PARK   |  |

| POTENTIAL SCHOOLS TO BE SERVED |                                      |
|--------------------------------|--------------------------------------|
| ID                             | NAME                                 |
| A                              | ALMERIA MIDDLE SCHOOL                |
| B                              | CANYON CREST ELEMENTARY SCHOOL       |
| C                              | CECILIA L. SOLORIO ELEMENTARY SCHOOL |
| D                              | CHAPARRAL ELEMENTARY SCHOOL          |
| E                              | CITRUS CONT. HIGH SCHOOL             |
| F                              | CITRUS ELEMENTARY SCHOOL             |
| G                              | CYPRESS ELEMENTARY SCHOOL            |
| H                              | D'ARCY ELEMENTARY SCHOOL             |
| I                              | DAVID W. LONG ELEMENTARY SCHOOL      |
| J                              | DOROTHY GRANT ELEMENTARY SCHOOL      |
| K                              | EAST HERITAGE ELEMENTARY SCHOOL      |
| L                              | FONTANA A.B. MILLER HIGH SCHOOL      |
| M                              | FONTANA HIGH SCHOOL                  |
| N                              | FONTANA MIDDLE SCHOOL                |
| O                              | HARRY S. TRUMAN MIDDLE SCHOOL        |
| P                              | HENRY J. KAISER HIGH                 |
| Q                              | HERITAGE INTERMEDIATE SCHOOL         |
| R                              | JUNIPER ELEMENTARY SCHOOL            |
| S                              | JURUPA VISTA ELEMENTARY SCHOOL       |
| T                              | OAK PARK ELEMENTARY SCHOOL           |
| U                              | RANDALL PEPPER ELEMENTARY SCHOOL     |
| V                              | SHADOW HILLS ELEMENTARY SCHOOL       |
| W                              | SIERRA LAKES ELEMENTARY SCHOOL       |
| X                              | SOUTHRIDGE MIDDLE SCHOOL             |
| Y                              | ST. JOSEPH ACADEMY                   |
| Z                              | SUMMIT HIGH SCHOOL                   |
| AA                             | TOKAY ELEMENTARY SCHOOL              |
| AB                             | WAYNE RUBLE ELEMENTARY SCHOOL        |

| SCHOOLS NOT CONSIDERED FOR SERVICE |  |
|------------------------------------|--|
| NAME                               |  |
| LOCUST ELEMENTARY SCHOOL           |  |
| MANGO ELEMENTARY SCHOOL            |  |
| ALDER MIDDLE SCHOOL                |  |
| HEMLOCK ELEMENTARY SCHOOL          |  |
| NORTH TAMARIND ELEMENTARY SCHOOL   |  |
| ALMOND ELEMENTARY SCHOOL           |  |
| TED J. PORTER ELEMENTARY SCHOOL    |  |
| SOUTH TAMARIND ELEMENTARY SCHOOL   |  |
| REDWOOD ELEMENTARY SCHOOL          |  |
| OLEANDER ELEMENTARY SCHOOL         |  |
| CHAFFEY COLLEGE FONTANA CENTER     |  |
| WEST RANDALL ELEMENTARY SCHOOL     |  |
| PALMETTO ELEMENTARY SCHOOL         |  |
| SEQUOIA MIDDLE SCHOOL              |  |
| LIVE OAK ELEMENTARY SCHOOL         |  |
| POPLAR ELEMENTARY SCHOOL           |  |
| JURUPA HILLS ELEMENTARY SCHOOL     |  |

**Table 3-1  
Potential Recycled Water Demand**

| Zone                     | 1158 Zone | 1270 Zone (West) | 1270 Zone (East) | 1430 Zone (Heritage) | 1430 Zone (East) | 1630 Zone | 1830 Zone | TOTALS |
|--------------------------|-----------|------------------|------------------|----------------------|------------------|-----------|-----------|--------|
| <b>Parks</b>             | 12        | -                | 2                | 17                   | 5                | 7         | 13        | 56     |
| Area (acre)              | 191       | -                | 36               | 45                   | 38               | 41        | 274       | 625    |
| Annual Demand (ac-ft/yr) | 1,111     | -                | 217              | 271                  | 226              | 243       | 1,370     | 3,439  |
| Maximum Day (gpm)        | 1,791     | -                | 350              | 437                  | 364              | 392       | 2,208     | 5,542  |
| Peak Hour (gpm)          | 5,374     | -                | 1,049            | 1,310                | 1,092            | 1,177     | 6,625     | 16,627 |
| <b>CFD/LMD Areas</b>     | 7         | -                | -                | 4                    | -                | 19        | 4         | 34     |
| Area (acre)              | 14        | -                | -                | 29                   | -                | 11        | 27        | 80     |
| Annual Demand (ac-ft/yr) | 82        | -                | -                | 172                  | -                | 64        | 164       | 482    |
| Maximum Day (gpm)        | 133       | -                | -                | 278                  | -                | 103       | 265       | 778    |
| Peak Hour (gpm)          | 398       | -                | -                | 833                  | -                | 308       | 794       | 2,333  |
| <b>Schools</b>           | 9         | -                | 6                | 3                    | 4                | 8         | 5         | 35     |
| Area (acre)              | 55        | -                | 54               | 15                   | 18               | 68        | 46        | 256    |
| Annual Demand (ac-ft/yr) | 331       | -                | 326              | 91                   | 105              | 409       | 275       | 1,537  |
| Maximum Day (gpm)        | 533       | -                | 532              | 147                  | 169              | 659       | 443       | 2,483  |
| Peak Hour (gpm)          | 1,598     | -                | 1,577            | 442                  | 508              | 1,977     | 1,328     | 7,430  |
| <b>Industrial Users</b>  | 11        | 2                | -                | 2                    | -                | 1         | 1         | 17     |
| Area (acre)              | -         | -                | -                | -                    | -                | -         | 150       | -      |
| Annual Demand (ac-ft/yr) | 453       | 1,243            | -                | 23                   | -                | 8         | 899       | 2,626  |
| Maximum Day (gpm)        | 538       | 2,004            | -                | 37                   | -                | 13        | 1,448     | 4,041  |
| Peak Hour (gpm)          | 1,174     | 6,012            | -                | 112                  | -                | 40        | 4,345     | 11,683 |
| <b>TOTALS</b>            |           |                  |                  |                      |                  |           |           |        |
| Annual Demand (ac-ft/yr) | 1,977     | 1,243            | 543              | 558                  | 331              | 724       | 2,708     | 8,084  |

### 3.1.3 Schools

Existing and future elementary, middle, and high schools within the City boundaries were considered for this study. School areas and locations were obtained from the City's GIS database. For purposes of this feasibility study, it was assumed that 50 percent of the total school area was landscaped. A total of 35 schools were identified within the City boundaries covering an area of approximately 260 acres. Potential recycled water demand for schools was estimated at approximately 1,550 ac-ft per year.

### 3.1.4 Industrial/Commercial Users

Existing industrial users within the City boundaries were identified in IEUA's Recycled Water Implementation Plan. This plan indicates the existence of 17 potential industrial users within the City limits representing an estimated potential demand of 2,625 ac-ft per year.

### 3.1.5 Groundwater Recharge

In addition to the groundwater basins identified in IEUA's study as part of the regional groundwater recharge program, two potential groundwater recharge locations were identified during the early phases of this study. However, additional use of recycled water for groundwater recharge by the City was not considered feasible since there is a limited amount of local surface water runoff available to meet current blending requirements by the California Department of Health Services (DHS). DHS currently requires four acre feet of potable or surface water to blend for each acre feet of recycled water used for groundwater recharge.

### 3.1.6 New Developments

Three new large developments were identified as potential recycled water users. These proposed developments, Valley Trails in the southeast portion of the City and Summit at Rosena and the Arboretum at Fontana North in the northerly portion of the City service area above the 210 freeway, could use a significant amount of recycled water. Their specific plans include a number of parks, schools, and common landscape areas that could be served using recycled water.

## 3.2 Potential Recycled Water Demand

Recycled water demand was identified for the potential users within the City. A detailed breakdown by pressure zone of potential recycled water users and their respective demands is presented in Appendix A.

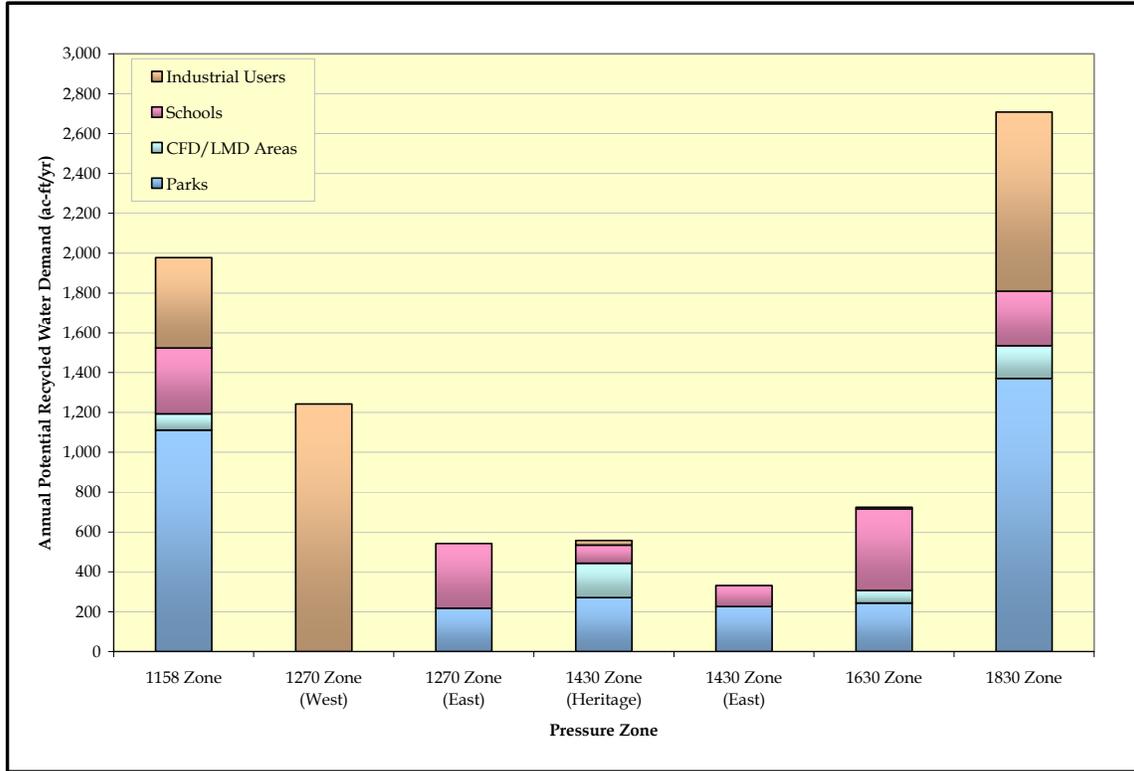
### 3.2.1 Demand Assumptions

Potable water usage for potential industrial users was obtained from IEUA's RWIP; however, potential demand for irrigation of parks, medians, and schools was based on evapotranspiration information published by the California Irrigation Management Information System (CIMIS). Station 44, located at the University of California Riverside, was used to estimate irrigation requirements based on evapotranspiration information. The long term annual evapotranspiration average for this station was estimated at 57 inches of water, which results in an estimated application rate of approximately 72 inches or six feet of water per year. This value assumes 25 percent inefficiency in the application of water for landscape irrigation. It is assumed that all irrigation users would use the same annual application rate of recycled water.

### 3.2.2 Total Potential Demand

The potential recycled water demand was calculated for each type of user and was organized into corresponding pressure zones. In Table 3-1, a summary of the total potential recycled water demand for the City by pressure zone was presented. This table indicates that irrigation of parks, medians, and schools constitute the primary use of recycled water. The annual irrigation demand accounts for approximately 70 percent of the total potential demand of approximately 8,000 ac-ft per year. It should be noted that many existing and future parks and schools within the City limits were not considered for service because of their relative location and the cost to serve them.

The 1270 and 1430 pressure zones within the City service area were divided into two systems; namely, east and west. These two zones were dissected because of the relative location of potential demands and the configuration of the proposed distribution facilities to serve the identified users. Zone separation for zone 1158 in the southern portion of the service area and zones 1630 and 1830 in the north were not considered as potential users at these elevations are relatively close to each other. Figure 3-2 illustrates the total annual demand for each pressure zone.



**Figure 3-2**  
**Total Potential Demand by Pressure Zone**

## Section 4

# Recycled Water System

This section documents the economic feasibility of the proposed system when compared to current water rates by CVWD and FWC. In addition, this section documents the staging of the proposed system, presents the estimated capital cost for each phase of improvements, and discusses potential issues associated with integrating the City's system into the regional system.

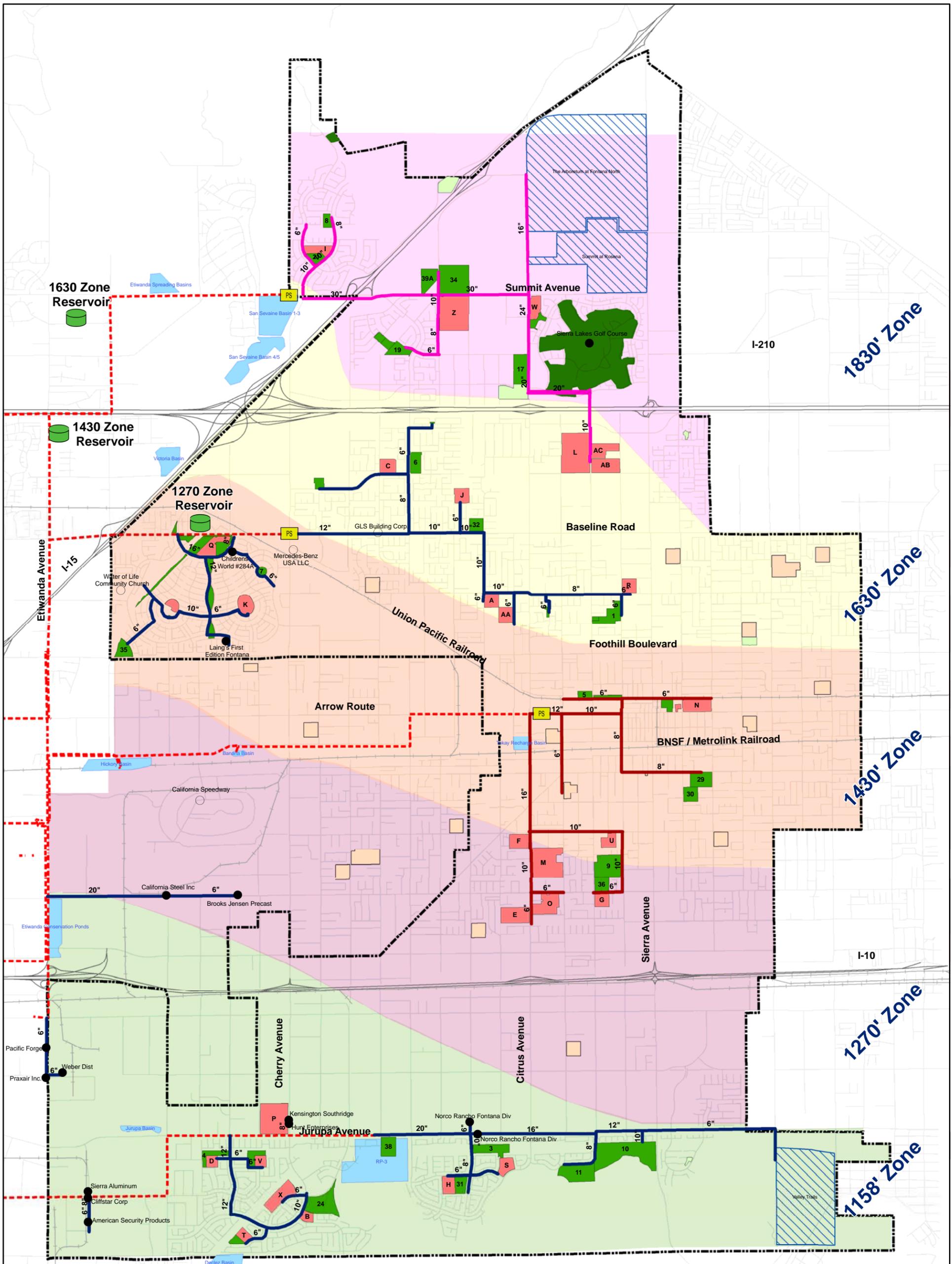
### 4.1 Proposed Recycled Water System

The development of a recycled water system for the City of Fontana considered all potential users within the City service area. However, during the development of the system, some of the potential recycled water users were deemed not-serviceable due to a relative high unit cost to serve them. Therefore, the potential system would only include those users considered economically feasible to be served with recycled water. Section 3 identified a potential recycled water demand of 8,000 ac-ft per year from the users that could be served by the proposed system. The proposed recycled water system is depicted in Figure 4-1. A description of the proposed system is presented below.

#### 4.1.1 System Description

In the southern portion of the City, the proposed recycled system would connect to proposed regional pipelines off the 1158 Zone. The regional plan identifies a 24-inch pipeline along Jurupa Avenue to the existing RP-3 site. Local facilities would connect to this line to serve potential users in that area including Chaparral Park & School, Southridge Community Park & Middle School, and the Martin Tudor Regional Park among others. The local recycled water system in that area would include an extension of the regional line along Jurupa Avenue to serve the Valley Trails development in south eastern Fontana and would include a number of laterals to serve local parks and schools previously identified.

The central portions of the City would be served by regional pipelines operating in the 1270 and 1430 zones. In the 1270 Zone, proposed regional facilities include a 16-inch line to serve the Hickory and Banana basins. This regional line, according to IEUA staff, may be extended east to deliver recycled water for groundwater recharge at the Tokay Basin. The local system would tie to end of this proposed line to deliver to the 1270 East and 1430 East zones. The 1270 East Zone would be served by gravity through a proposed 16-inch line along Citrus Avenue. Servicing the 1430 East Zone would require a 100-Hp pump station at the end of the regional pipeline to boost into this zone. The proposed pump station, to be located in the vicinity of Arrow Route and Citrus Avenue, would also require the construction of a hydro-pneumatic tank to maintain adequate delivery pressures in the 1430 system. It should be noted that the regional line to serve the Hickory and Banana basins would need to be upsized to serve the identified local irrigation demands in that portion of the City.



NOTE: See Figure 3-1 for List of Potential Schools and Parks To Be Served.

**Legend**

- Private Users
- ▭ City Boundary
- ▭ Schools To Be Served
- ▭ Schools Not Served
- ▭ Parks To Be Served
- ▭ Parks Not Served
- ▭ Specific Plans
- ▭ Regional Spreading Basins

**Pipelines**

- Phase 1
- Phase 2
- Phase 3
- - - IEUA Pipelines



**Figure 4-1**  
**City of Fontana,**  
**Feasibility Study**  
**Recycled Water System**



In the 1430 Zone, parks, schools, and other identified users in the vicinity of the Village of Heritage would be served off the discharge side of the 1430 pump station. This pump station would pump from the proposed 1270 Zone reservoir to be located in that vicinity. A separate pump station, to be located in the vicinity of Baseline Road and Cherry Avenue, would be required to pump off the 1430 Zone to serve potential recycled water demands in the 1630 Zone as illustrated in Figure 4-1. This pump station will also require the construction of a hydro-pneumatic tank to maintain adequate operating pressures in that portion of the system.

The northern portions of the City would be served off the 1630 zone. Regional facilities in this zone include a 36-inch/24-inch pipeline to deliver recycled water for groundwater recharge to the Etiwanda and San Sevaine spreading grounds. This pipeline may need to be upsized to accommodate the additional recycled water demands identified in this study in the 1830 Zone.

To serve potential recycled water demands in the 1830 Zone, a 1,000-Hp pump station would be required off the end of the 1630 Zone pipeline as depicted in Figure 4-1. This proposed pump station would serve potential users in that area including Fontana Park, Sierra Lakes Golf Course, and recycled water demands in the Summit at Rosena and the Arboretum at Fontana North developments. This pump station would also provide recycled water to several potential users in the Hunter's Ridge area.

#### 4.1.2 Pipeline Sizing Criteria

To be consistent with the regional facilities, the peaking factors and pipe sizing criteria for potential recycled water users were obtained from IEUA's *Recycled Water Implementation Plan (RWIP)* (MWH, November 2005). The system design factors and criteria used in that study are as follows:

- Summer Peak Day Demand Factor = 2.6 Times Average Day Demand
- Summer Peak Hour Demand Factor = 7.8 Times Average Day Demand
- Pipelines used for irrigation sized for summer peak hour
- Maximum pipeline velocity under peak hour conditions = 6 ft/sec

#### 4.1.3 Potable Water Rates

Costs for potable water provided by the two largest purveyors in the City of Fontana, Fontana Water Company (FWC) and Cucamonga Valley Water District (CVWD), were estimated for this study. The costs per ac-ft of potable water, estimated using current rate structures for these agencies were estimated at \$764 and \$530 respectively. Approximately 90 percent of the potable water demand in the City is supplied by FWC. Detailed information regarding these costs is provided under Appendix B.

#### 4.1.4 Economic Assumptions

The following assumptions were made as part of economic analysis:

- Costs assume regional backbone distribution system constructed and paid for by IEUA.
- IEUA Recycled Water Fee refers to the unit cost of recycled water charged by IEUA, currently \$60 per ac-ft.
- Pipeline unit costs include materials and installation as well as an allowance for valves, connections, pavement removal and replacement, and other appurtenances.
- Pump station unit costs include necessary piping connections, pumps, motors, electrical and instrumentation facilities. Pump station costs also include provisions for emergency power backup and bypass pumping.
- Pumping costs varies depending on the system priority and it includes energy (\$0.11 per kwh) required to boost recycled water into higher pressure zone(s).
- Operations and maintenance cost, including labor, maintenance, and repairs, have been assumed at \$20 per ac-ft for planning purposes.
- Total production cost per acre-ft is based on the total product water produced and the total annual cost of the facilities.
- Annual capital cost amortization is based on a 30-year municipal bond sale at the current interest of approximately six percent.
- A 25 percent contingency was included in each of the system capital costs. This contingency was included to account for additional expenses that may be incurred during construction.
- Costs shown in the tables below are rounded to the nearest \$100,000.
- No onsite costs were included for retrofitting existing potable water systems.

#### 4.1.5 Opinion of Probable Cost

A summary of demand, capital cost, and average annual cost per ac-ft for the proposed distribution system is summarized in Table 4-1. The capital cost to implement the proposed system is estimated at \$36,400,000. The average unit cost, estimated at \$420 per ac-ft, is significantly lower than the current cost of potable water charged by the two main water purveyors. A more detailed breakdown of the opinion of probable capital cost for the proposed facilities is contained in Appendix C.

**Table 4-1  
Recycled Water Facilities**

| Zone                 | Demand (ac-ft/yr) | Capital      | Cost per ac-ft |
|----------------------|-------------------|--------------|----------------|
| 1158 Zone            | 1,977             | \$7,500,000  | \$352          |
| 1270 Zone (West)     | 1,243             | \$2,500,000  | \$225          |
| 1270 Zone (East)     | 543               | \$3,300,000  | \$512          |
| 1430 Zone (Heritage) | 558               | \$0          | \$150          |
| 1430 Zone (East)     | 331               | \$3,100,000  | \$791          |
| 1630 Zone            | 455               | \$4,600,000  | \$826          |
| 1830 Zone            | 2,977             | \$15,400,000 | \$477          |
| All Zones            | 8,084             | \$36,400,000 | \$420          |

The cost to serve the Village of Heritage, estimated at \$150 per ac-ft, is based on the assumption that this portion of the system would be incorporated as part of the overall regional system since it benefits two regional agencies, CVWD and the City of Fontana.

## 4.2 Staging of Proposed Improvements

The proposed improvements to develop a recycled water system in the City of Fontana were grouped into three phases as depicted in Figure 4-1. The priorities were determined based on the following criteria, (1) phasing of regional facilities, (2) proximity to IEUA regional facilities, (3) potential demand, and (4) cost effectiveness of facilities versus demand served.

### 4.2.1 Phase 1

Phase 1 represents those potential facilities with the highest demand, closest proximity to the regional system, highest regional phasing priority, and/or the lowest relative average annual cost. Phase 1 includes facilities to serve the southern and western portions of the City in the 1158, 1270 West, 1430 West (Heritage), and 1630 zones. Regional facilities to serve these pressure zones are either under design or under construction at the present time. Recycled water demand to be served under Phase 1 has been estimated at 4,235 ac-ft per year or approximately 52 percent of the total potential demand in the City of 8,000 ac-ft per year.

## 4.2.2 Phase 2

Phase 2 concentrates on the facilities required to serve the northern portion of the City's service area above the 210 Freeway in the 1830 pressure zone. Potential use of recycled water in this pressure zone was estimated at 2,980 ac-ft per year or approximately 37 percent of the total estimated demand. Phase 2 facilities fulfill the criteria for high demand, proximity to regional facilities, and low relative annual costs. However, some of the regional facilities to bring recycled water to the 1630 Reservoir are considered part of Priority H and beyond the 10-year implementation plan.

## 4.2.3 Phase 3

Phase 3 concentrates on the potential demand in the central and eastern portions of the City in the 1430 (East) and 1270 (East) zones. A serviceable demand of 875 ac-ft per year under this priority approximate the remaining 11 percent of the potential recycled water demand in the City. These portions of the proposed system were assigned to Phase 3 because of the uncertainty of the design and construction schedule for the regional facilities serving these zones and higher unit cost.

## 4.2.4 CIP - Opinion of Probable Capital Cost

The opinion of probable capital cost for the recommended facilities is presented in Table 4-2 according to the phasing of implementation. The estimated capital cost and recycled water unit cost for each phase is graphically presented in Figures 4-2 and 4-3 respectively. A more detailed breakdown of the opinion of probable capital cost for the proposed facilities is contained in Appendix C. Table 4-2 indicates that the average cost per ac-ft of recycled water is significantly below the current cost of potable water charged by CVWD (\$530 per ac-ft) and FWC (\$764 per ac-ft).

## 4.3 Recycled Water Supply Availability

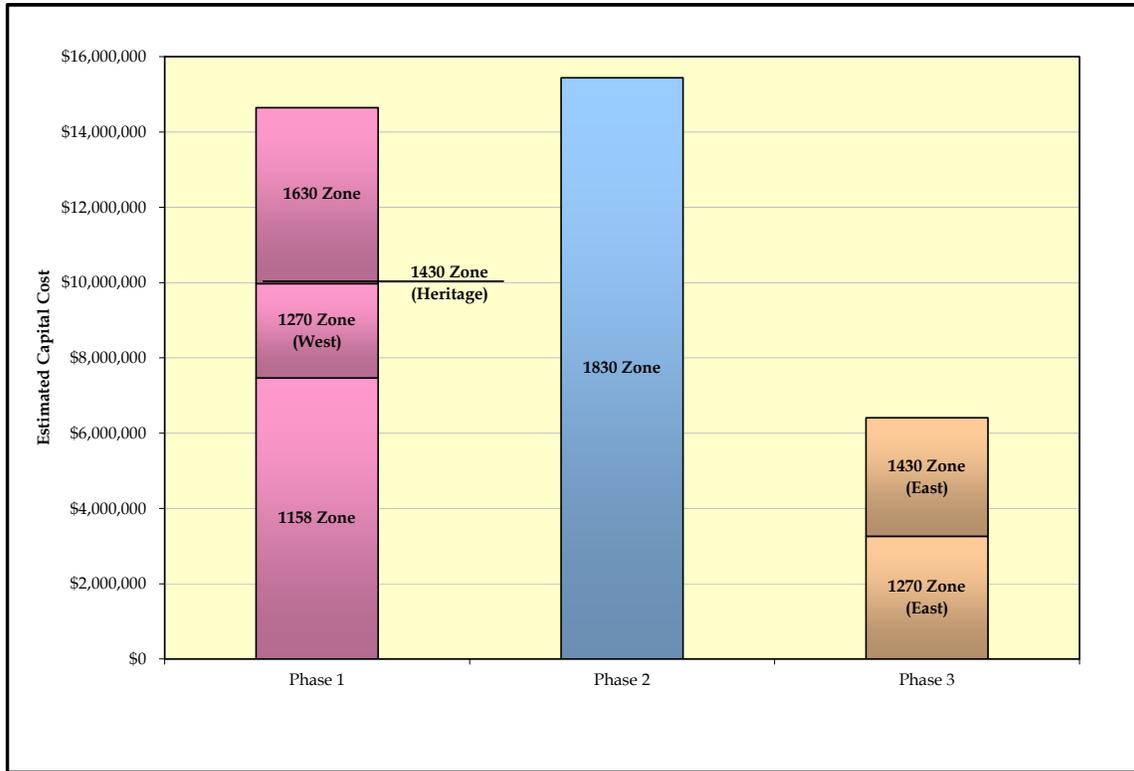
As discussed in Section 2, IEUA in conjunction with the local potable water purveyors identified the potential recycled water demand for the City of Fontana. However, the potential demands, as identified in this study, differ from the values identified by IEUA. This section describes and documents the different potential recycled water demand and identifies any potential conflicts.

### 4.3.1 Demand Comparison

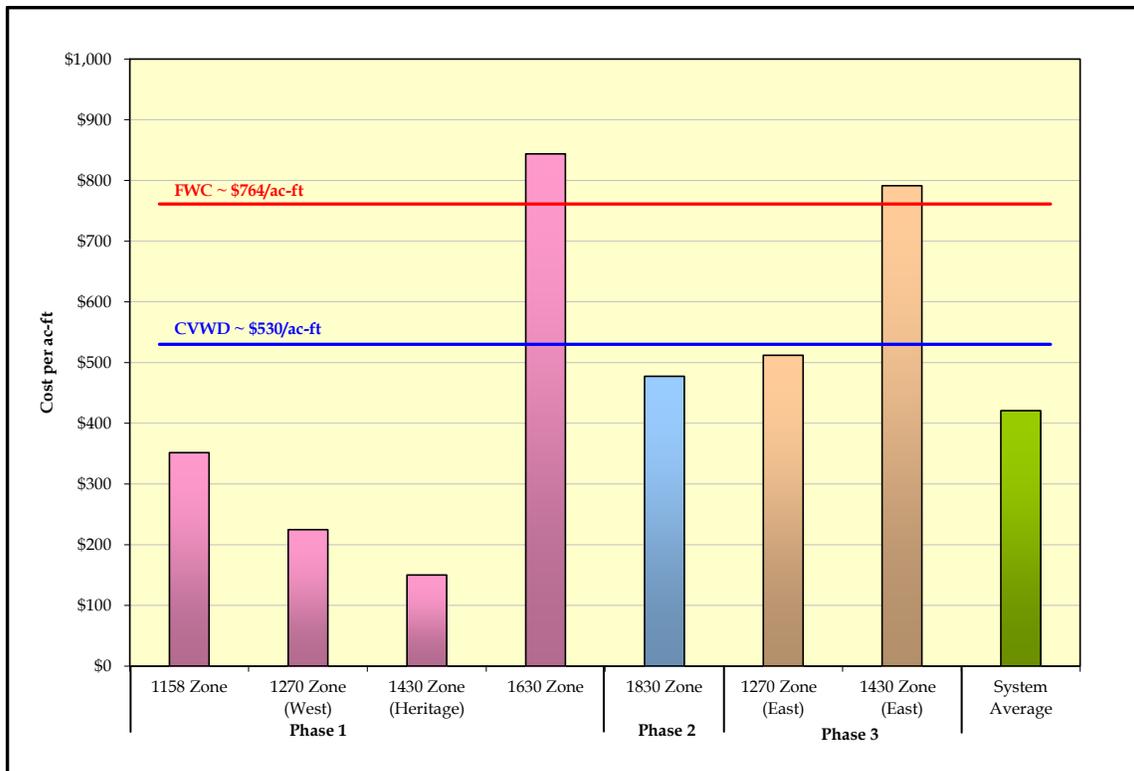
The projected recycled water demand for facilities currently served by FWC was estimated at approximately 4,100 ac-ft per yr in the IEUA Recycled Water Implementation Plan. With the exception of the Village of Heritage area in the northwest portion of the City (served by CVWD), FWC provides water for most of the City. IEUA's RWIP provides for two pipeline connections dedicated to serving recycled water to the City of Fontana.

**Table 4-2  
Capital Improvement Program**

| <b>Phase/Zone</b>               | <b>Demand<br/>(ac-ft/yr)</b> | <b>Capital</b>      | <b>Cost per ac-ft</b> |
|---------------------------------|------------------------------|---------------------|-----------------------|
| <b>Phase 1</b>                  |                              |                     |                       |
| 1158 Zone                       | 1,977                        | 7,500,000           | \$352                 |
| 1270 Zone (West)                | 1,243                        | \$2,500,000         | \$225                 |
| 1430 Zone (Heritage)            | 558                          | \$0                 | \$150                 |
| 1630 Zone                       | 455                          | \$4,600,000         | \$826                 |
| Total/Average                   | 4,233                        | \$14,600,000        | \$341                 |
| <b>Phase 2</b>                  |                              |                     |                       |
| 1830 Zone                       | 2,977                        | \$15,400,000        | \$477                 |
| <b>Phase 1 &amp; 2 Combined</b> | 7,210                        | \$30,000,000        | \$396                 |
| <b>Phase 3</b>                  |                              |                     |                       |
| 1270 Zone (East)                | 543                          | \$3,300,000         | \$512                 |
| 1430 Zone (East)                | 331                          | \$3,100,000         | \$791                 |
| Total/Average                   | 874                          | \$6,400,000         | \$618                 |
| <b>System Total/Average</b>     | <b>8,084</b>                 | <b>\$36,400,000</b> | <b>\$420</b>          |



**Figure 4-2**  
Capital Improvement Program  
Estimated Capital Cost



**Figure 4-3**  
Capital Improvement Program  
Estimated Recycled Water Unit Cost

The regional system includes two pipelines operating in the 1158 Zone and located in the southwest portion of the City, Francis Segment 1 and Francis Segment 2. The combined estimated total recycled water demand for these pipelines is 1,140 ac-ft per year in IEUA's study. As discussed in earlier in this Section, the total potential demand for the 1158 Zone, identified in this report, is estimated at 1,977 ac-ft per year. This is a difference of approximately 825 ac-ft per year.

The second pipeline connection identified in the regional study is in the northern portion of the City in the 1630 Zone. This pipeline has been sized to deliver recycled water for groundwater recharge to the Etiwanda and San Sevaine spreading grounds and 1,500 ac-ft per year to the northern portion of the City. The current study identifies a potential demand of approximately 3,000 ac-ft per year in this portion of the City. This amount is twice the demand identified in the regional study.

Recently, IEUA identified two additional regional pipelines to serve the City. The first of these lines would be located in the vicinity of the Village of Heritage and would operate in the 1430 Zone. The City and IEUA have been discussing the possibility of constructing an underground reservoir in the Village of Heritage to serve the 1270 Zone and a pump station to supply the 1430 Zone as part of the regional system. Given the additional recycled water demands identified in this study, the sizing of transmission, storage, and pumping facilities for this location (Heritage) are yet to be finalized.

The second regional pipeline connection recently identified by IEUA would be located near the intersection of Arrow Route and Citrus Avenue. This regional pipeline would operate in the 1270 Zone as an extension of the Hickory and Banana recharge basin pipeline. IEUA has indicated what the regional groundwater recharge system may be expanded to include a potential recharge basin located south of Arrow Route between Tokay Avenue and Citrus Avenue. While the sizing of the regional facilities in this area has not been finalized, it should consider the additional demands identified in this study to serve the central portion of the City.

The industrial users located in the northwest portion of the 1158 zone and the 1270 (West) zone would be served by the Etiwanda South pipeline. This pipeline has a north-south alignment along Etiwanda Avenue and has an estimated demand of approximately 2,240 ac-ft per year. These potential users would be served by a dedicated pipeline that connects to the regional system. The total demand for these potential users is approximately 1,387 ac-ft per year. The regional pipeline appears to have sufficient capacity to serve the identified users.

### **4.3.2 Facility Integration Implementation Schedule**

The two pipelines dedicated to serve recycled water in the northern portion of the City are identified in IEUA's RWIP but are not discussed in any detail because the construction of these facilities fall outside of the anticipated 10-year Implementation Plan. These facilities include the following:

- 1630 East Reservoir Pipeline - 3,000 ft
- 1630 Fontana Pipeline - 1,900 ft
- 1630 East Reservoir - 7.0 MG

The phasing of the City's Capital Improvement Program may be affected by IEUA's implementation schedule as recycled water may not be available for another 10 years. The City of Fontana should pursue further discussions with IEUA to expedite the construction of recycled water facilities that would make recycled water available sooner.

### Facility Sizing

The pipelines identified in IEUA's RWIP as those dedicated to serving the City appear to be undersized for the potential demand identified in this report. The demand in the southern portion of the City could have an impact on the following pipelines:

- Francis Segment 1 Pipeline (16-inch Diameter) - 10,600 ft
- Francis Segment 2 Pipeline (12-inch Diameter) - 12,100 ft

The summer peak hour demand in the southern portion of the City is estimated at approximately 8,200 gpm. Based on the pipeline design criteria discussed earlier in this section, under summer peak hour conditions, the velocity in these pipelines would exceed six feet per second.

Likewise, the summer peak hour demand at the City's northern connection point is estimated at approximately 14,400 gpm. This potential demand may impact the following pipelines:

- Etiwanda Spreading Basins Pipeline (16-inch to 36-inch Diameter) - 8,800 ft
- San Sevaine Spreading Basins Pipeline (24-inch Diameter) - 2,700 ft
- 1630 Fontana Pipeline (24-inch Diameter) - 1,900 ft

Under summer peak hour conditions, the velocity in these pipelines could exceed six feet per second. As a result, the regional pipelines identified to convey this peak flow may need to be upsized.

Based on information recently presented by IEUA, there is the potential for these pipelines to be upsized to accommodate the potential recycled water flows identified in this study. The Francis Segments 1 and 2 Pipelines may be upsized from 12-inch and 16-inch to 24-inch in diameter. This increased pipeline diameter would be maintained from the existing Wineville Pipeline to the termination point at RP3. In addition, the Etiwanda, San Sevaine, and Fontana Pipelines may be upsized to maintain a 36-inch diameter along their entire alignment.

As indicated in the previous section, the size and alignment of the 1270 Zone and 1430 Zone regional pipelines was approximate and could not be verified with any certainty. Information provided by IEUA indicates that the preliminary size of the 1270 Zone regional pipeline to be 16-inch diameter. Under summer peak hour conditions, the velocity in these pipelines could exceed 6 ft/s. As a result, the regional pipelines identified to convey this peak flow may need to be upsized.

#### **4.4 Conclusion**

This feasibility study identifies a potential demand for recycled water of approximately 8,000 ac-ft per year throughout the City. A significant portion of this demand could be served over the next 10 years as IEUA plans to build a number of regional pipelines over this period that would enable the development of a recycled water system to serve the City. Further, development of said system would provide recycled water for irrigation of parks, schools and other landscape areas as well as for industrial use at a cost significantly lower than the cost of potable water currently being charged by CVWD and FWC.

**CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND**

| <b>Location</b>  | <b>Type of Use</b>    | <b>Total Area<br/>(ft<sup>2</sup>)</b> | <b>Landscaped Area<sup>(1)</sup><br/>(ft<sup>2</sup>)</b> | <b>Consumption<sup>(2)</sup><br/>(ac-ft/yr)</b> | <b>Average Day<br/>(gpm)</b> | <b>Peak Day<br/>(gpm)</b> | <b>Peak Hour<br/>(gpm)</b> |
|--|-----------------------|--|---|---|------------------------------|---------------------------|----------------------------|
| <b>1158 Zone</b>   |                       |  |   |   |                              |                           |                            |
| <b>Parks</b>   |                       |  |   |   |                              |                           |                            |
| Oak Park   | Existing Park         | -                                      | 173,187   | 24  | 15                           | 38                        | 115                        |
| Southridge Community Park, Don Day Community Center                                      | Open Space            | -                                      | 1,129,498   | 156   | 96                           | 251                       | 752                        |
| Chaparrel Park   | Existing Park         | -                                      | 347,976   | 48  | 30                           | 77                        | 232                        |
| Shadow Park  | Existing Park         | -                                      | 319,825   | 44  | 27                           | 71                        | 213                        |
| RP-3 Park  | Future Park           | -                                      | 566,280   | 78  | 48                           | 126                       | 377                        |
| Catabwa Park   | Existing Park         | -                                      | 625,969   | 86  | 53                           | 139                       | 417                        |
| Village Park   | Existing Park         | -                                      | 396,336   | 55  | 34                           | 88                        | 264                        |
| Mary Vagle Museum and Nature Center  | Existing Park         | -                                      | 1,072,477   | 148   | 92                           | 238                       | 714                        |
| Martin Tudor Jurupa Hills Regional Park  | Existing Park         | -                                      | 2,441,800   | 336   | 209                          | 542                       | 1,626                      |
| Kessler Park   | County Park           | -                                      | 435,600   | 60  | 37                           | 97                        | 290                        |
| Valley Trails (Specific Plan)  | Future Park           | -                                      | 435,600   | 60  | 37                           | 97                        | 290                        |
| Valley Trails (Specific Plan)  | Future Trail          | -                                      | 374,616   | 17  | 11                           | 28                        | 83                         |
| <b>Other</b>   |                       |  |   |   |                              |                           |                            |
| South ridge West   | CFD 1                 | -                                      | 175,000   | 24  | 15                           | 39                        | 117                        |
| Mulberry Medians and Parkway & Jurupa Medians and Parkway. Between Mulberry and Etiwanda | CFD 10M               | 56,928                                 | 39,850  | 5   | 3                            | 9                         | 27                         |
| N/S of Slover LMD 1 (Annex #26a)   | LMD 1<br>(Annex #26a) | 32,600                                 | 22,820  | 3   | 2                            | 5                         | 15                         |
| S/S of Slover  | LMD 1<br>(Annex #26)  | 30,082                                 | 21,057  | 3   | 2                            | 5                         | 14                         |
| W/S of Mulberry & Medians Between Marlay and Country Line Road                           | LMD 1<br>(Annex #37)  | 90,325                                 | 63,228  | 9   | 5                            | 14                        | 42                         |
| South ridge East   | CFD 1                 | -                                      | 125,000   | 17  | 11                           | 28                        | 83                         |
| Country Club Estates   | CFD 7                 | -                                      | 150,000   | 21  | 13                           | 33                        | 100                        |

**CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND**

| Location                      | Type of Use   | Total Area<br>(ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup><br>(ft <sup>2</sup> ) | Consumption <sup>(2)</sup><br>(ac-ft/yr) | Average Day<br>(gpm) | Peak Day<br>(gpm) | Peak Hour<br>(gpm) |
|-------------------------------|---------------|----------------------------------|--|--|----------------------|-------------------|--------------------|
| <b>1158 Zone</b>              |               |                                  |  |  |                      |                   |                    |
| <b>Schools</b>                |               |                                  |  |  |                      |                   |                    |
| Oak Park Elem. School         | School        | 261,409                          | 130,704  | 18                                       | 11                   | 29                | 87                 |
| Canyon Crest Elem. School     | School        | 235,784                          | 117,892  | 16                                       | 10                   | 26                | 79                 |
| Southridge Middle School      | School        | 820,336                          | 410,168  | 56                                       | 35                   | 91                | 273                |
| Chaparral Elem. School        | School        | 262,090                          | 131,045  | 18                                       | 11                   | 29                | 87                 |
| Shadow Hills Elem. School     | School        | 261,327                          | 130,664  | 18                                       | 11                   | 29                | 87                 |
| Henry J. Kaiser High School   | School        | 1,652,117                        | 826,058  | 114                                      | 71                   | 183               | 550                |
| D'Arcy Elem. School           | School        | 434,821                          | 217,410  | 30                                       | 19                   | 48                | 145                |
| Jurupa Vista Elem. School     | School        | 435,504                          | 217,752  | 30                                       | 19                   | 48                | 145                |
| Valley Trails (Specific Plan) | Future School | 435,600                          | 217,800  | 30                                       | 19                   | 48                | 145                |
| <b>Private Users</b>          |               |                                  |  |  |                      |                   |                    |
| Cliffstar Corp                | Industrial    | -                                | -  | 106                                      | 65                   | 98                | 196                |
| Sierra Aluminum               | Irrigation    | -                                | -  | 7  | 5                    | 12                | 36                 |
| American Security Products    | Irrigation    | -                                | -  | 9  | 6                    | 15                | 44                 |
| Sierra Aluminum               | Irrigation    | -                                | -  | 33                                       | 20                   | 53                | 159                |
| Hunt Enterprises              | Irrigation    | -                                | -  | 47                                       | 29                   | 75                | 45                 |
| Kensington Southridge         | Irrigation    | -                                | -  | 23                                       | 15                   | 38                | 113                |
| Norco Rancho Fontana Div      | Industrial    | -                                | -  | 52                                       | 32                   | 48                | 97                 |
| Norco Rancho Fontana Div      | Irrigation    | -                                | -  | 32                                       | 20                   | 52                | 155                |
| <b>1158 Zone Totals</b>       |               |                                  |  | <b>1,833</b>                             | <b>1,136</b>         | <b>2,847</b>      | <b>8,216</b>       |
| <b>Private Users</b>          |               |                                  |  |  |                      |                   |                    |
| Pacific Forge                 | Irrigation    | -                                | -  | 6  | 4                    | 9                 | 28                 |
| Praxair Inc.                  | Industrial    | -                                | -  | 124                                      | 77                   | 115               | 231                |
| Weber Dist                    | Irrigation    | -                                | -  | 14                                       | 9                    | 23                | 70                 |
| <b>1158 Zone Totals</b>       |               |                                  |  | <b>144</b>                               | <b>89</b>            | <b>148</b>        | <b>328</b>         |

(1) Landscaped Area of SCHOOLS is assumed to be 50% of Total Area.

(2) Consumption based on 6 AC-FI/YR

CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND

| Location                       | Type of Use | Total Area<br>(ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup><br>(ft <sup>2</sup> ) | Consumption <sup>(2)</sup><br>(ac-ft/yr) | Average Day<br>(gpm) | Peak Day<br>(gpm) | Peak Hour<br>(gpm) |
|--------------------------------|-------------|----------------------------------|--|--|----------------------|-------------------|--------------------|
| <b>1270 Zone (West)</b>        |             |                                  |  |  |                      |                   |                    |
| <b>Private Users</b>           |             |                                  |  |  |                      |                   |                    |
| California Steel Inc           | Irrigation  | -                                | -  | 1,220                                    | 756                  | 1,966             | 5,899              |
| Brooks Jensen Precast          | Irrigation  | -                                | -  | 23                                       | 14                   | 38                | 113                |
| <b>1270 Zone (West) Totals</b> |             |                                  |  | <b>1,243</b>                             | <b>771</b>           | <b>2,004</b>      | <b>6,012</b>       |

(1) Landscaped Area of SCHOOLS is assumed to be 50% of Total Area.

(2) Consumption based on 6 AC-FI/YR

**CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND**

| Location                             | Type of Use   | Total Area (ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup> (ft <sup>2</sup> ) | Consumption <sup>(2)</sup> (ac-ft/yr) | Average Day (gpm) | Peak Day (gpm) | Peak Hour (gpm) |
|--------------------------------------|---------------|-------------------------------|---|---------------------------------------|-------------------|----------------|-----------------|
| <b>1270 Zone (East)</b>              |               |                               |   |                                       |                   |                |                 |
| <b>Parks</b>                         |               |                               |   |                                       |                   |                |                 |
| Jack Bulik Community Center and Park | Existing Park | -                             | 1,165,253   | 161                                   | 99                | 259            | 776             |
| Jack Bulik Park II                   | Future Park   | -                             | 409,464   | 56                                    | 35                | 91             | 273             |
| <b>Schools</b>                       |               |                               |   |                                       |                   |                |                 |
| Randall Pepper Elem. School          | School        | 351,921                       | 175,961   | 24                                    | 15                | 45             | 117             |
| Cypress Elem. School                 | School        | 386,219                       | 193,109   | 27                                    | 16                | 43             | 129             |
| Fontana High School                  | School        | 1,758,346                     | 879,173   | 121                                   | 75                | 195            | 586             |
| Citrus Elem. School                  | School        | 528,770                       | 264,385   | 36                                    | 23                | 59             | 176             |
| Harry S. Truman Middle School        | School        | 886,192                       | 443,096   | 61                                    | 38                | 98             | 295             |
| Citrus Cont. High School             | School        | 822,700                       | 411,350   | 57                                    | 35                | 91             | 274             |
| <b>1270 Zone (East) Totals</b>       |               |                               | <b>3,941,791</b>                                  | <b>543</b>                            | <b>337</b>        | <b>881</b>     | <b>2,625</b>    |

(1) Landscaped Area of SCHOOLS is assumed to be 50% of Total Area.

(2) Consumption based on 6 AC-FT/YR

**CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND**

| Location  | Type of Use   | Total Area<br>(ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup><br>(ft <sup>2</sup> ) | Consumption <sup>(2)</sup><br>(ac-ft/yr) | Average Day<br>(gpm) | Peak Day<br>(gpm) | Peak Hour<br>(gpm) |
|---|---------------|----------------------------------|--|--|----------------------|-------------------|--------------------|
| <b>1430 Zone (Heritage)</b>                           |               |                                  |  |  |                      |                   |                    |
| <b>Parks</b>  |               |                                  |  |  |                      |                   |                    |
| North Heritage Park                                   | Existing Park | -                                | 50,199   | 7  | 4                    | 11                | 33                 |
| McDermott Sports Complex (Pool)                       | Existing Park | -                                | 133,469  | 18                                       | 11                   | 30                | 89                 |
| McDermott Sports Complex (Soccer Fields)              | Existing Park | -                                | 370,308  | 51                                       | 32                   | 82                | 247                |
| McDermott Sports Complex (Tennis Area)                | Existing Park | -                                | 353,622  | 49                                       | 30                   | 79                | 236                |
| Heritage Circle Park                                  | Existing Park | -                                | 131,996  | 18                                       | 11                   | 29                | 88                 |
| Village of Heritage Common Area                       | Existing Park | -                                | 148,866  | 21                                       | 13                   | 33                | 99                 |
| Village of Heritage Common Area                       | Existing Park | -                                | 3,308  | 0  | 0                    | 1                 | 2                  |
| Village of Heritage Common Area                       | Existing Park | -                                | 3,308  | 0  | 0                    | 1                 | 2                  |
| Village of Heritage Common Area                       | Existing Park | -                                | 230,922  | 32                                       | 20                   | 51                | 154                |
| Village of Heritage Common Area                       | Existing Park | -                                | 4,353  | 1  | 0                    | 1                 | 3                  |
| Village of Heritage Common Area                       | Existing Park | -                                | 3,763  | 1  | 0                    | 1                 | 3                  |
| Village of Heritage Common Area                       | Existing Park | -                                | 111,256  | 15                                       | 9                    | 25                | 74                 |
| Village of Heritage Common Area                       | Existing Park | -                                | 25,796   | 4  | 2                    | 6                 | 17                 |
| Village of Heritage Playground (E. Contitution Way)   | Existing Park | -                                | 12,877   | 2  | 1                    | 3                 | 9                  |
| Village of Heritage Playground (W. Contitution Way)   | Existing Park | -                                | 8,797  | 1  | 1                    | 2                 | 6                  |
| Village of Heritage Util Corridor, Common Area & Trai | Existing Park | -                                | 239,413  | 33                                       | 20                   | 53                | 159                |
| Gateway Park  | Future Park   | -                                | 135,036  | 19                                       | 12                   | 30                | 90                 |
| <b>Other</b>  |               |                                  |  |  |                      |                   |                    |
| Village of Heritage.                                  | LMD 2         | -                                | 750,000  | 103                                      | 64                   | 167               | 500                |
| CFD 2   | CFD 2         | -                                | 1,000  | 0  | 0                    | 0                 | 1                  |
| CFD 11  | CFD 11        | -                                | 1,000  | 0  | 0                    | 0                 | 1                  |
| Future Water of Life Open Area                        |               |                                  | 500,000  | 69                                       | 43                   | 111               | 333                |
| <b>Schools</b>  |               |                                  |  |  |                      |                   |                    |
| East Heritage Elem. School                            | School        | 498,324                          | 249,162  | 34                                       | 21                   | 55                | 166                |
| Heritage Intermediate School.                         | School        | 610,306                          | 305,153  | 42                                       | 26                   | 68                | 203                |
| West Heritage Elem. School                            | School        | 218,327                          | 109,164  | 15                                       | 9                    | 24                | 73                 |

CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND

| Location                           | Type of Use | Total Area<br>(ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup><br>(ft <sup>2</sup> ) | Consumption <sup>(2)</sup><br>(ac-ft/yr) | Average Day<br>(gpm) | Peak Day<br>(gpm) | Peak Hour<br>(gpm) |
|------------------------------------|-------------|----------------------------------|--|--|----------------------|-------------------|--------------------|
| <b>1430 Zone (Heritage)</b>        |             |                                  |  |  |                      |                   |                    |
| <b>Private Users</b>               |             |                                  |  |  |                      |                   |                    |
| Childrens World #284A              | Irrigation  |                                  |  | 6  | 4                    | 10                | 31                 |
| Laing's First Edition Fontana      | Irrigation  |                                  |  | 17                                       | 10                   | 27                | 81                 |
| <b>1430 Zone (Heritage) Totals</b> |             |                                  |  |  | <b>346</b>           | <b>899</b>        | <b>2,698</b>       |

(1) Landscaped Area of SCHOOLS is assumed to be 50% of Total Area.

(2) Consumption based on 6 AC-FT/YR

**CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND**

| Location                                       | Type of Use   | Total Area<br>(ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup><br>(ft <sup>2</sup> ) | Consumption <sup>(2)</sup><br>(ac-ft/yr) | Average Day<br>(gpm) | Peak Day<br>(gpm) | Peak Hour<br>(gpm) |
|--|---------------|----------------------------------|--|--|----------------------|-------------------|--------------------|
| <b>1430 Zone (East)</b>                        |               |                                  |  |  |                      |                   |                    |
| <b>Parks</b>                                   |               |                                  |  |  |                      |                   |                    |
| Cypress Center & Josephine Knopf Senior Center | Existing Park | -                                | 206,032  | 28                                       | 18                   | 46                | 137                |
| Seville Park and Amphitheater                  | Existing Park | -                                | 165,374  | 23                                       | 14                   | 37                | 110                |
| Miller Community Center and Park               | Existing Park | -                                | 247,831  | 34                                       | 21                   | 55                | 165                |
| Veterans' Park                                 | Existing Park | -                                | 604,303  | 83                                       | 52                   | 134               | 402                |
| Veterans' Park West                            | Existing Park | -                                | 416,690  | 57                                       | 36                   | 93                | 278                |
| <b>Schools</b>                                 |               |                                  |  |  |                      |                   |                    |
| Oleander Elem. School                          | School        | 441,655                          | 220,827  | 30                                       | 19                   | 49                | 147                |
| Date Elem School                               | School        | 331,274                          | 165,637  | 23                                       | 14                   | 37                | 110                |
| St. Joseph Academy                             | School        | 66,737                           | 33,369   | 5  | 3                    | 7                 | 22                 |
| Fontana Middle School                          | School        | 686,684                          | 343,342  | 47                                       | 29                   | 76                | 229                |
| <b>1430 Zone (East) Totals</b>                 |               |                                  | <b>2,403,405</b>                                     | <b>331</b>                               | <b>205</b>           | <b>534</b>        | <b>1,601</b>       |

(1) Landscaped Area of SCHOOLS is assumed to be 50% of Total Area.

(2) Consumption based on 6 AC-FT/YR

CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND

| Location  | Type of Use          | Total Area (ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup> (ft <sup>2</sup> ) | Consumption <sup>(2)</sup> (ac-ft/yr) | Average Day (gpm) | Peak Day (gpm) | Peak Hour (gpm) |
|---|----------------------|-------------------------------|---|---------------------------------------|-------------------|----------------|-----------------|
| <b>1630 Zone</b>  |                      |                               |   |                                       |                   |                |                 |
| <b>Parks</b>  |                      |                               |   |                                       |                   |                |                 |
| California Landings Specific Plan Pocket Park                           | Existing Park        | -                             | 12,074  | 2                                     | 1                 | 3              | 8               |
| Dr. Charles A. Koehler Park   | Existing Park        | -                             | 435,465   | 60                                    | 37                | 97             | 290             |
| Westgate Specific Plan Park   | Future Park          | -                             | 215,493   | 30                                    | 18                | 48             | 144             |
| Almeria Basin Park  | Future Park          | -                             | 365,421   | 50                                    | 31                | 81             | 243             |
| Northgate Park  | Existing Park        | -                             | 59,173  | 8                                     | 5                 | 13             | 39              |
| Bill Martin Park  | Existing Park        | -                             | 635,382   | 88                                    | 54                | 141            | 423             |
| Bill Martin Park II   | Future Park          | -                             | 43,560  | 6                                     | 4                 | 10             | 29              |
| <b>Other</b>  |                      |                               |   |                                       |                   |                |                 |
| The Landings  | CFD 6                | 168,000                       | 117,600   | 16                                    | 10                | 26             | 78              |
| Morning Side  | CFD 9                | 132,253                       | 92,577  | 13                                    | 8                 | 21             | 62              |
| North Morning Side  | CFD 6-2              | 28,404                        | 19,883  | 3                                     | 2                 | 4              | 13              |
| Stratham  | CFD 6-1              | 30,926                        | 21,648  | 3                                     | 2                 | 5              | 14              |
| Presley   | CFD 8                | 3,822                         | 2,675   | 0                                     | 0                 | 1              | 2               |
| Arbor Glen  | CFD 15M              | 39,574                        | 27,702  | 4                                     | 2                 | 6              | 18              |
| Bellgrove   | CFD 6-3a             | 42,360                        | 29,652  | 4                                     | 3                 | 7              | 20              |
| CFD 6-1 A1  | CFD 6-1 A1           | -                             | 1,000   | 0                                     | 0                 | 0              | 1               |
| CFD 6-1 A2  | CFD 6-1 A2           | -                             | 1,000   | 0                                     | 0                 | 0              | 1               |
| CFD 6-1 A4  | CFD 6-1 A4           | -                             | 1,000   | 0                                     | 0                 | 0              | 1               |
| CFD 15M A2  | CFD 15M A2           | -                             | 1,000   | 0                                     | 0                 | 0              | 1               |
| S/S of Baseline west of Tokay   | LMD 1<br>(Annex #8)  | 11,780                        | 8,246   | 1                                     | 1                 | 2              | 5               |
| S/S of Baseline east of Lime  | LMD 1<br>(Annex #10) | 78,609                        | 55,026  | 8                                     | 5                 | 12             | 37              |
| East of Citrus W/O Oleander S/O Miller N/O Barbee<br>(Master community) | LMD 1<br>(Annex #14) | 112,709                       | 78,896  | 11                                    | 7                 | 18             | 53              |

**CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND**

| Location                        | Type of Use | Total Area<br>(ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup><br>(ft <sup>2</sup> ) | Consumption <sup>(2)</sup><br>(ac-ft/yr) | Average Day<br>(gpm) | Peak Day<br>(gpm) | Peak Hour<br>(gpm) |
|---------------------------------|-------------|----------------------------------|--|--|----------------------|-------------------|--------------------|
| <b>1630 Zone</b>                |             |                                  |  |  |                      |                   |                    |
| CFD 2                           | CFD 2       | -                                | 1,000  | 0  | 0                    | 0                 | 1                  |
| CFD 6-3a A1                     | CFD 6-3a A1 | -                                | 1,000  | 0  | 0                    | 0                 | 1                  |
| CFD 15M A1                      | CFD 15M A1  | -                                | 1,000  | 0  | 0                    | 0                 | 1                  |
| CFD 18M                         | CFD 18M     | -                                | 1,000  | 0  | 0                    | 0                 | 1                  |
| CFD 20M                         | CFD 20M     | -                                | 1,000  | 0  | 0                    | 0                 | 1                  |
| <b>Schools</b>                  |             |                                  |  |  |                      |                   |                    |
| Cecilia L. Solorio Elem. School | School      | 435,496                          | 217,748  | 30                                       | 19                   | 48                | 145                |
| Dorothy Grant Elem School       | School      | 413,177                          | 206,589  | 28                                       | 18                   | 46                | 138                |
| Almeria Middle School           | School      | 386,153                          | 193,076  | 27                                       | 16                   | 43                | 129                |
| Tokay Elem School               | School      | 413,781                          | 206,891  | 28                                       | 18                   | 46                | 138                |
| Juniper Elem School             | School      | 382,493                          | 191,246  | 26                                       | 16                   | 42                | 127                |
| <b>Private Users</b>            |             |                                  |  |  |                      |                   |                    |
| GLS Building Corp               | Irrigation  |                                  | -  | 8  | 5                    | 13                | 40                 |
| <b>1630 Zone Totals</b>         |             |                                  |  | <b>455</b>                               | <b>282</b>           | <b>734</b>        | <b>2,201</b>       |

(1) Landscaped Area of SCHOOLS is assumed to be 50% of Total Area.

(2) Consumption based on 6 AC-FT/YR

**CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND**

| Location                                       | Type of Use             | Total Area (ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup> (ft <sup>2</sup> ) | Consumption <sup>(2)</sup> (ac-ft/yr) | Average Day (gpm) | Peak Day (gpm) | Peak Hour (gpm) |
|--|-------------------------|-------------------------------|---|---------------------------------------|-------------------|----------------|-----------------|
| <b>1830 Zone</b>                               |                         |                               |   |                                       |                   |                |                 |
| <b>Parks</b>                                   |                         |                               |   |                                       |                   |                |                 |
| Rosena Park Common Area                        | Existing Park           | -                             | 167,454   | 23                                    | 14                | 37             | 112             |
| Rosena Park East                               | Existing Park           | -                             | 457,835   | 63                                    | 39                | 102            | 305             |
| Rosena Park West                               | Existing Park           | -                             | 136,677   | 19                                    | 12                | 30             | 91              |
| Fontana Park                                   | Future Park             | -                             | 1,524,600   | 210                                   | 130               | 338            | 1,015           |
| Westgate Specific Plan Park                    | Future Park             | -                             | 614,196   | 85                                    | 52                | 136            | 409             |
| Patricia Marrujo Park                          | Future Park             | -                             | 219,576   | 30                                    | 19                | 49             | 146             |
| Ralph M. Lewis Memorial Sports Complex         | Existing Park           | -                             | 830,036   | 114                                   | 71                | 184            | 553             |
| Summit at Rosena (Specific Plan)               | Future Parks            | -                             | 680,000   | 94                                    | 58                | 151            | 453             |
| Summit at Rosena (Specific Plan)               | Future Green/Open Space | -                             | 1,575,000   | 72                                    | 45                | 117            | 350             |
| The Arboretum at Fontana North (Specific Plan) | Future Parks            | -                             | 3,859,000   | 532                                   | 330               | 857            | 2,570           |
| The Arboretum at Fontana North (Specific Plan) | Future Green/Open Space | -                             | 1,437,000   | 66                                    | 41                | 106            | 319             |
| <b>Other</b>                                   |                         |                               |   |                                       |                   |                |                 |
| Ventana Point                                  | CFD 16M                 | 32,850                        | 22,995  | 3                                     | 2                 | 5              | 15              |
| Summit Heights                                 | CFD 13                  | 291,037                       | 203,726   | 28                                    | 17                | 45             | 136             |
| Sierra Lakes                                   | CFD 12                  | 274,335                       | 192,035   | 26                                    | 16                | 43             | 128             |
| <b>Schools</b>                                 |                         |                               |   |                                       |                   |                |                 |
| Summit High                                    | School                  | 1,939,228                     | 969,614   | 134                                   | 83                | 215            | 646             |
| Sierra Lakes Elem                              | School                  | 450,226                       | 225,113   | 31                                    | 19                | 50             | 150             |
| Fontana AB Miller High                         | School                  | 2,202,314                     | 1,101,157   | 152                                   | 94                | 244            | 733             |
| Wayne Ruble Elem                               | School                  | 1,079,416                     | 539,708   | 74                                    | 46                | 120            | 359             |
| Wayne Ruble Middle                             | School                  | 622,968                       | 311,484   | 43                                    | 27                | 69             | 207             |
| Summit at Rosena (Specific Plan)               | Future School           | 585,000                       | 292,500   | 40                                    | 25                | 65             | 195             |
| The Arboretum at Fontana North (Specific Plan) | Future School           | 579,348                       | 289,674   | 40                                    | 25                | 64             | 193             |
| <b>Private Users</b>                           |                         |                               |   |                                       |                   |                |                 |
| Sierra Lakes Golf Course                       | Irrigation              |                               | 6,523,981   | 899                                   | 557               | 1,448          | 4,345           |
| <b>1830 Zone Totals</b>                        |                         |                               | <b>22,173,360</b>                                 | <b>2,778</b>                          | <b>1,722</b>      | <b>4,477</b>   | <b>13,431</b>   |

**CITY OF FONTANA  
POTENTIAL RECYCLED WATER DEMAND**

| Location                | Type of Use   | Total Area<br>(ft <sup>2</sup> ) | Landscaped Area <sup>(1)</sup><br>(ft <sup>2</sup> ) | Consumption <sup>(2)</sup><br>(ac-ft/yr) | Average Day<br>(gpm) | Peak Day<br>(gpm) | Peak Hour<br>(gpm) |
|-------------------------|---------------|----------------------------------|--|--|----------------------|-------------------|--------------------|
| <b>1830 Zone</b>        |               |                                  |  |  |                      |                   |                    |
| <b>Parks</b>            |               |                                  |  |  |                      |                   |                    |
| Hunter's Ridge Park     | Existing Park | -                                | 205,125  | 28                                       | 18                   | 46                | 137                |
| San Sevaine Park        | Existing Park | -                                | 248,267  | 34                                       | 21                   | 55                | 165                |
| <b>Other</b>            |               |                                  |  |  |                      |                   |                    |
| Hunters Ridge           | LMD 3         | 1,105,785                        | 774,050  | 107                                      | 66                   | 172               | 516                |
| <b>Schools</b>          |               |                                  |  |  |                      |                   |                    |
| David W. Long Elem      | School        | 435,515                          | 217,758  | 30                                       | 19                   | 48                | 145                |
| <b>1830 Zone Totals</b> |               |                                  | <b>1,445,198</b>                                     | <b>199</b>                               | <b>123</b>           | <b>321</b>        | <b>963</b>         |

(1) Landscaped Area of SCHOOLS is assumed to be 50% of Total Area.

(2) Consumption based on 6 AC-FI/YR

### Fontana Water Company

|   |                 |   |                    |
|---|-----------------|---|--------------------|
| Cost per 100 cu. ft.                    | \$1.5391        |   |                    |
| Temp Surcharge                          | \$0.1385        |   |                    |
| Temp Surcharge                          | \$0.0300        |   |                    |
| Total                                   | \$1.7076        | = | \$743.83 per ac-ft |
| Service Charge per meter per month (2") | \$102.03        |   |                    |
| Assumed # of meters                     | 85              |   |                    |
| Cost per year                           | \$104,071       |   |                    |
| Total ac-ft/yr                          | 5306            |   |                    |
| Cost per ac-ft                          | \$19.61         |   |                    |
| <b>Total Cost per ac-ft</b>             | <b>\$763.44</b> |   |                    |

Monthly Meter Charges

### Cucamonga Valley Water District

|   |                 |   |                    |
|---|-----------------|---|--------------------|
| Cost per 100 cu. ft.                    | \$1.15          | = | \$500.94 per ac-ft |
| Service Charge per meter per month (2") | \$105.50        |   |                    |
| Assumed # of meters                     | 25              |   |                    |
| Cost per year                           | \$15,825        |   |                    |
| Total ac-ft/yr                          | 558             |   |                    |
| Cost per ac-ft                          | \$28.37         |   |                    |
| <b>Total Cost per ac-ft</b>             | <b>\$529.31</b> |   |                    |

Bi-Monthly Meter Charges

## FONTANA WATER COMPANY

### GENERAL METERED SERVICE Summary of Schedule No. FO-1

#### APPLICABILITY

Applicable to all metered water service.

#### TERRITORY

Portions of Fontana, Rancho Cucamonga, Rialto and vicinity, San Bernardino County.

#### RATES

##### Quantity Rates:

|  |    |               |
|--|----|---------------|
| For all water used, per 100 cu. ft. .... | \$ | 1.5391*       |
| Temporary surcharge .....                |    | 0.1385        |
| Temporary surcharge .....                |    | <u>0.0300</u> |
| Total .....                              | \$ | <u>1.7076</u> |

##### Service Charges:

|                                |    | <u>Per Meter</u><br><u>Per Month</u> |
|--------------------------------|----|--------------------------------------|
| For 5/8 x 3/4-inch meter ..... | \$ | 12.74                                |
| For 3/4-inch meter .....       |    | 19.15                                |
| For 1-inch meter .....         |    | 31.90                                |
| For 1-1/2-inch meter .....     |    | 63.74                                |
| For 2-inch meter .....         |    | 102.03                               |
| For 3-inch meter .....         |    | 191.54                               |
| For 4-inch meter .....         |    | 319.05                               |
| For 6-inch meter .....         |    | 636.55                               |
| For 8-inch meter .....         |    | 1,014.56                             |
| For 10-inch meter .....        |    | 1,461.59                             |
| For 12-inch meter .....        |    | 2,098.62                             |
| For 2-2-inch meters .....      |    | 204.51                               |

*New Installation*  
 → \$3643.00  
 → \$5009.00

The Service Charge is a readiness-to-serve charge applicable to all metered service and to which is added the quantity charge computed at the Quantity Rates.

NOTE: All bills are subject to the Public Utilities Commission reimbursement fee of 1.4 percent and where applicable, to the following utility user tax:

City of Fontana = 5%\*\*, City of Rialto = 8%

\* A surcharge of \$0.1385 per Ccf is to be applied to quantity rates for a 12-month period from the effective date of Advice Letter No. 328 (7/17/04) to amortize net undercollections in water production, purchased power, DHS/EPA, and water quality litigation accounts.

A surcharge of \$0.0300 per Ccf is to be applied to quantity rates for a 12-month period from the effective date of Advice Letter No. 327 (9/28/04) to amortize net undercollections in water production and purchased power.

\*\* Not applicable to residential services.

**PRIVATE FIRE SERVICE RATE: \$7.40 PER INCH**

Effective 01/01/05

**NOTICE AND SUMMARY OF ORDINANCE 2004-3-6  
OF THE CUCAMONGA VALLEY WATER DISTRICT  
AMENDING AND MODIFYING RATES AND CHARGES  
FOR WATER SERVICE, THE WATER SYSTEM CAPACITY FEE,  
AND THE RULES AND REGULATIONS FOR SERVICE OF WATER  
WITHIN THE DISTRICT.**

NOTICE IS HEREBY GIVEN that on March 23, 2004 at 6:00 p.m. in the meeting room of the Board of Directors of the Cucamonga Valley Water District, 10440 Ashford Street, Rancho Cucamonga, California, the Board of Directors adopted Ordinance No. 2004-3-6 which amended Exhibit "A" of Ordinance No. 30-E of the Cucamonga Valley Water District.

**Summary of Ordinance**

Ordinance No. 2004-3-6 amended Exhibit "A" of Ordinance No. 30-E as follows:

1. Increased the *Water Commodity Rate* from \$1.10 to \$1.15/hundred cubic feet (effective 04/01/04)
2. Increased the *Interruptible Government Rate* from \$1.00 to \$1.035/hundred cubic feet (effective 07/01/04)
3. Increased *Temporary Water Service Rate* from \$2.20 to \$2.30/hundred cubic feet (effective 04/01/04)
4. Increased the *Bimonthly Service Charges* as follows: (effective 04/01/04)

| Meter Size | Current Rate | Proposed Rate |
|------------|--------------|---------------|
| 5/8"       | \$ 19.75     | \$ 20.00      |
| 3/4"       | \$ 19.75     | \$ 20.00      |
| 1"         | \$ 33.00     | \$ 33.50      |
| 1.5"       | \$ 65.75     | \$ 66.50      |
| 2"         | \$ 105.25    | \$ 105.50     |
| 3"         | \$ 210.75    | \$ 213.25     |
| 4"         | \$ 329.25    | \$ 333.25     |
| 6"         | \$ 790.00    | \$ 800.00     |
| 8"         | \$1,053.50   | \$ 1,066.50   |
| 10"        | \$1,580.25   | \$ 1,600.00   |

5. Increase the *Water System Capacity Fee* as follows: (effective 06/01/04)

| Meter Size | Current Rate  | Proposed Rate |
|------------|---------------|---------------|
| 3/4"       | \$ 2,570.00   | \$ 2,864.00   |
| 1"         | \$ 4,293.00   | \$ 4,783.00   |
| 1.5"       | \$ 8,560.00   | \$ 9,538.00   |
| 2"         | \$ 13,700.00  | \$ 15,266.00  |
| 3"         | \$ 27,426.00  | \$ 30,561.00  |
| 4"         | \$ 42,849.00  | \$ 47,746.00  |
| 6"         | \$ 102,817.00 | \$ 114,567.00 |
| 8"         | \$ 137,081.00 | \$ 152,747.00 |
| 10"        | \$ 205,634.00 | \$ 229,135.00 |

**City of Fontana  
Recycled Water Distribution System  
Preliminary Opinion of Probable Cost**

**1158 Zone - Recycled Water Facilities**

| Phase | Pressure Zone | Facility | Length (ft) | Diameter (in) | Description                       | Unit Cost                | Total       |
|-------|---------------|----------|-------------|---------------|-----------------------------------|--------------------------|-------------|
| 1     | 1158          | Pipeline | 1,670       | 12            | Banana from Marlay to Chaparral   | \$144                    | \$240,480   |
| 1     | 1158          | Pipeline | 1,030       | 12            | Banana from Chaparral to Jurupa   | \$144                    | \$148,320   |
| 1     | 1158          | Pipeline | 600         | 6             | Chaparral Park & School           | \$72                     | \$43,200    |
| 1     | 1158          | Pipeline | 1,800       | 6             | Shadow Park and School            | \$72                     | \$129,600   |
| 1     | 1158          | Pipeline | 850         | 12            | Banana from Marlay to Cherry Ave  | \$144                    | \$122,400   |
| 1     | 1158          | Pipeline | 1,750       | 10            | Cherry Ave                        | \$120                    | \$210,000   |
| 1     | 1158          | Pipeline | 1,350       | 6             | Oak Park & School                 | \$72                     | \$97,200    |
| 1     | 1158          | Pipeline | 2,680       | 10            | Cherry Ave                        | \$120                    | \$321,600   |
| 1     | 1158          | Pipeline | 1,160       | 6             | Southridge School                 | \$72                     | \$83,520    |
| 1     | 1158          | Pipeline | 800         | 8             | Kaiser High and Ind. Users        | \$96                     | \$76,800    |
| 1     | 1158          | Pipeline | 1,450       | 20            | Jurupa from RP3 to Beech          | \$240                    | \$348,000   |
| 1     | 1158          | Pipeline | 2,550       | 20            | Jurupa from Beech to Poplar       | \$240                    | \$612,000   |
| 1     | 1158          | Pipeline | 520         | 6             | Norco Rancho Fontana Div          | \$72                     | \$37,440    |
| 1     | 1158          | Pipeline | 670         | 10            | Poplar from Jurupa to Catawba     | \$120                    | \$80,400    |
| 1     | 1158          | Pipeline | 1,180       | 8             | Poplar from Catawba to Village Dr | \$96                     | \$113,280   |
| 1     | 1158          | Pipeline | 1,010       | 6             | Jurupa Vista Elem                 | \$72                     | \$72,720    |
| 1     | 1158          | Pipeline | 780         | 6             | D'Arcy Elem                       | \$72                     | \$56,160    |
| 1     | 1158          | Pipeline | 1,280       | 6             | Village Park                      | \$72                     | \$92,160    |
| 1     | 1158          | Pipeline | 5,560       | 16            | Jurupa from Poplar to Cypress     | \$192                    | \$1,067,520 |
| 1     | 1158          | Pipeline | 2,570       | 8             | Mary Vagle                        | \$96                     | \$246,720   |
| 1     | 1158          | Pipeline | 2,400       | 16            | Jurupa from Cypress to Pole       | \$192                    | \$460,800   |
| 1     | 1158          | Pipeline | 520         | 10            | Martin Tudor                      | \$120                    | \$62,400    |
| 1     | 1158          | Pipeline | 8,000       | 8             | Valley Trails                     | \$96                     | \$768,000   |
| 1     | 1158          | Pipeline | 1,760       | 8             | Ind. Users on Pacific             | \$96                     | \$168,960   |
|       |               |          |             |               |                                   | Subtotal                 | \$5,659,680 |
|       |               |          |             |               |                                   | Contingency (25%)        | \$1,414,920 |
|       |               |          |             |               |                                   | Total Cost               | \$7,074,600 |
|       |               |          |             |               |                                   | Total ac-ft/yr           | 1,833       |
|       |               |          |             |               |                                   | Cost per ac-ft           | \$278       |
|       |               |          |             |               |                                   | O&M Cost per ac-ft       | \$20        |
|       |               |          |             |               |                                   | Cost per ac-ft from IEUA | \$60        |
|       |               |          |             |               |                                   | Total Cost per ac-ft     | \$358       |

**City of Fontana  
Recycled Water Distribution System  
Preliminary Opinion of Probable Cost**

**1158 Zone - Recycled Water Facilities**

| Phase                                       | Pressure Zone | Facility | Length (ft) | Diameter (in) | Description            | Unit Cost | Total              |
|---|---------------|----------|-------------|---------------|------------------------|-----------|--------------------|
| 1   | 1158          | Pipeline | 3,280       | 8             | Ind. Users on Etiwanda | \$96      | \$314,880          |
| Subtotal                                    |               |          |             |               |                        |           | \$314,880          |
| Contingency (25%)                           |               |          |             |               |                        |           | \$78,720           |
| Total Cost                                  |               |          |             |               |                        |           | \$393,600          |
| Total ac-ft/yr                              |               |          |             |               |                        |           | 144                |
| Cost per ac-ft                              |               |          |             |               |                        |           | \$196              |
| O&M Cost per ac-ft                          |               |          |             |               |                        |           | \$20               |
| Cost per ac-ft from IEUA                    |               |          |             |               |                        |           | \$60               |
| Total Cost per ac-ft                        |               |          |             |               |                        |           | \$276              |
| <b>Total Estimated Cost for 1158 Zone</b>   |               |          |             |               |                        |           | <b>\$7,468,200</b> |
| <b>Average Cost per ac-ft for 1158 Zone</b> |               |          |             |               |                        |           | <b>\$352</b>       |

**1270 Zone (West) - Recycled Water Facilities**

| Phase                    | Pressure Zone | Facility      | Length (ft) | Diameter (in) | Description             | Unit Cost | Total       |
|--------------------------|---------------|---------------|-------------|---------------|-------------------------|-----------|-------------|
| 1                        | 1270          | Pipeline      | 5,260       | 20            | California Steel Inc    | \$300     | \$1,578,000 |
| 1                        |               | Bore and Jack |             | 20            | Jacking under RR Tracks | LS        | \$200,000   |
| 1                        | 1270          | Pipeline      | 3,100       | 6             | Brooks Jensen Precast   | \$72      | \$223,200   |
| Subtotal                 |               |               |             |               |                         |           | \$2,001,200 |
| Contingency (25%)        |               |               |             |               |                         |           | \$500,300   |
| Total Cost               |               |               |             |               |                         |           | \$2,501,500 |
| Total ac-ft/yr           |               |               |             |               |                         |           | 1,243       |
| Cost per ac-ft           |               |               |             |               |                         |           | \$145       |
| O&M Cost per ac-ft       |               |               |             |               |                         |           | \$20        |
| Cost per ac-ft from IEUA |               |               |             |               |                         |           | \$60        |
| Total Cost per ac-ft     |               |               |             |               |                         |           | \$225       |

**City of Fontana  
Recycled Water Distribution System  
Preliminary Opinion of Probable Cost**

**1430 Zone (Heritage) - Recycled Water Facilities**

| Phase | Pressure Zone | Facility | Length (ft) | Diameter (in) | Description          | Unit Cost | Total |
|-------|---------------|----------|-------------|---------------|----------------------|-----------|-------|
| 1     | 1430          | Pipeline | 1,790       | 16            | Heritage Cir         | \$0 **    | \$0   |
| 1     | 1430          | Pipeline | 2,900       | 6             | Heritage Circle Park | \$0 **    | \$0   |
| 1     | 1430          | Pipeline | 1,760       | 8             | Heritage Cir         | \$0 **    | \$0   |
| 1     | 1430          | Pipeline | 2,690       | 12            | W Grand Ave          | \$0 **    | \$0   |
| 1     | 1430          | Pipeline | 1,870       | 6             | East Heritage Elem   | \$0 **    | \$0   |
| 1     | 1430          | Pipeline | 2,200       | 6             | Liberty Pkwy         | \$0 **    | \$0   |
| 1     | 1430          | Pipeline | 3,160       | 10            | West Heritage        | \$0 **    | \$0   |
| 1     | 1430          | Pipeline | 740         | 6             | V of H Corridor      | \$0 **    | \$0   |
| 1     | 1430          | Pipeline | 2,630       | 6             | Gateway Park         | \$0 **    | \$0   |

\*\* Assumed to be a part of the regional system since it benefits two regional agencies, CVWD and the City of Fontana.

|                                  |       |
|----------------------------------|-------|
| Subtotal                         | \$0   |
| Contingency (25%)                | \$0   |
| Total Cost                       | \$0   |
| Total ac-ft/yr                   | 558   |
| Cost per ac-ft                   | \$0   |
| O&M Cost per ac-ft               | \$20  |
| Cost per ac-ft from IEUA         | \$60  |
| Assumed Cost per ac-ft from CVWD | \$70  |
| Total Cost per ac-ft             | \$150 |

**City of Fontana  
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**1630 Zone - Recycled Water Facilities**

| Phase | Pressure Zone | Facility      | Length (ft) | Diameter (in) | Description                        | Unit Cost | Total     |
|-------|---------------|---------------|-------------|---------------|------------------------------------|-----------|-----------|
| 1     |               | Pump Station* | -           | 225           | hp - Baseline & Cherry             | \$2,000   | \$450,000 |
| 1     |               | Hydro Tank    | -           | -             |                                    | LS        | \$200,000 |
| 1     | 1630          | Pipeline      | 5300        | 12            | Baseline from POC to Beech         | \$144     | \$763,200 |
| 1     | 1630          | Pipeline      | 2,650       | 8             | Beech Ave from Baseline to Walnut  | \$96      | \$254,400 |
| 1     | 1630          | Pipeline      | 4150        | 6             | Westgate Park                      | \$72      | \$298,800 |
| 1     | 1630          | Pipeline      | 3,200       | 6             | Beech Ave to Cal Landings Park     | \$72      | \$230,400 |
| 1     | 1630          | Pipeline      | 3,250       | 10            | Baseline from Beech to Almeria     | \$120     | \$390,000 |
| 1     | 1630          | Pipeline      | 1,250       | 6             | Dorthy Grant Elem School           | \$72      | \$90,000  |
| 1     | 1630          | Pipeline      | 2,600       | 10            | Almeria from Baseline to Miller    | \$120     | \$312,000 |
| 1     | 1630          | Pipeline      | 1,250       | 10            | Miller from Almeria to Tokay       | \$120     | \$150,000 |
| 1     | 1630          | Pipeline      | 500         | 6             | Tokay Elem School                  | \$72      | \$36,000  |
| 1     | 1630          | Pipeline      | 1,300       | 8             | Miller from Tokay to Lemon         | \$96      | \$124,800 |
| 1     | 1630          | Pipeline      | 500         | 6             | Northgate Park                     | \$72      | \$36,000  |
| 1     | 1630          | Pipeline      | 2,000       | 8             | Miller from Lemon to Cypress       | \$96      | \$192,000 |
| 1     | 1630          | Pipeline      | 1,300       | 8             | Miller from Cypress to Juniper     | \$96      | \$124,800 |
| 1     | 1630          | Pipeline      | 1,200       | 6             | Juniper from Miller to Bill Martin | \$72      | \$86,400  |

\* HP = (2,200 gpm x 150') / (3960\*0.80)

2 - 50 hp pumps & 1 - 50 hp backup

|                          |             |
|--------------------------|-------------|
| Subtotal                 | \$3,738,800 |
| Contingency (25%)        | \$934,700   |
| Total Cost               | \$4,673,500 |
| Total ac-ft/yr           | 455         |
| Cost per ac-ft           | \$739       |
| Pumping Cost per ac-ft   | \$25        |
| O&M Cost per ac-ft       | \$20        |
| Cost per ac-ft from IEUA | \$60        |
| Total Cost per ac-ft     | \$844       |

**City of Fontana  
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**1830 Zone - Recycled Water Facilities**

| Phase | Pressure Zone | Facility      | Length (ft) | Diameter (in) | Description                         | Unit Cost | Total       |
|-------|---------------|---------------|-------------|---------------|-------------------------------------|-----------|-------------|
| 2     |               | Pump Station* | -           | 1000          | hp - 210 & Beech                    | \$2,000   | \$2,000,000 |
| 2     |               | Hydro Tank    | -           | -             |                                     | LS        | \$400,000   |
| 2     | 1830          | Pipeline      | 6,300       | 36            | Summit From POC to Lytle Creek      | \$540     | \$3,402,000 |
| 2     |               | Bore and Jack |             | 36            | Jacking under 15 Freeway            | LS        | \$200,000   |
| 2     | 1830          | Pipeline      | 750         | 10            | Lytle Creek from Summit to HS       | \$120     | \$90,000    |
| 2     | 1830          | Pipeline      | 1,850       | 8             | Lytle Creek from HS to Curtis       | \$96      | \$177,600   |
| 2     | 1830          | Pipeline      | 3,740       | 6             | Rosena Park                         | \$72      | \$269,280   |
| 2     | 1830          | Pipeline      | 1,000       | 10            | Summit to Fontana Park              | \$120     | \$120,000   |
| 2     | 1830          | Pipeline      | 4,000       | 30            | Summit From Lytle to Citrus         | \$450     | \$1,800,000 |
| 2     | 1830          | Pipeline      | 1,250       | 24            | Citrus from Lytle to P Marrujo Park | \$360     | \$450,000   |
| 2     | 1830          | Pipeline      | 2,000       | 20            | Citrus from PM Park to Ralph L Park | \$240     | \$480,000   |
| 2     | 1830          | Pipeline      | 3,250       | 20            | Sierra Lakes Golf Course            | \$240     | \$780,000   |
| 2     |               | Bore and Jack |             | 10            | Jacking under 215 Freeway           | LS        | \$100,000   |
| 2     | 1830          | Pipeline      | 3,250       | 10            | Wayne Rubble & AB Miller Schools    | \$120     | \$390,000   |
| 2     | 1830          | Pipeline      | 1,500       | 16            | Summit at Rosena                    | \$192     | \$288,000   |
| 2     | 1830          | Pipeline      | 3,750       | 16            | The Arboretum at Fontana North      | \$192     | \$720,000   |
| 2     | 1830          | Pipeline      | 2,500       | 10            | Cherry from PS to D Long Elem       | \$120     | \$300,000   |
| 2     | 1830          | Pipeline      | 1,750       | 8             | Cherry from Long Elem to H.R. Park  | \$96      | \$168,000   |
| 2     | 1830          | Pipeline      | 3,000       | 6             | Bridlepath                          | \$72      | \$216,000   |

\* HP = (14,400 gpm x 150') / (3960\*0.80)

4 - 200 hp pumps & 1 - 200 hp backup

|                             |                     |
|-----------------------------|---------------------|
| Subtotal                    | \$12,350,880        |
| Contingency (25%)           | \$3,087,720         |
| <b>Total Cost</b>           | <b>\$15,438,600</b> |
| Total ac-ft/yr              | 2,977               |
| Cost per ac-ft              | \$373               |
| Pumping Cost per ac-ft      | \$24                |
| O&M Cost per ac-ft          | \$20                |
| Cost per ac-ft from IEUA    | \$60                |
| <b>Total Cost per ac-ft</b> | <b>\$477</b>        |

**City of Fontana  
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**1270 Zone (East) - Recycled Water Facilities**

| Phase                    | Pressure Zone | Facility      | Length (ft) | Diameter (in) | Description                          | Unit Cost | Total       |
|--------------------------|---------------|---------------|-------------|---------------|--------------------------------------|-----------|-------------|
| 3                        | 1270          | Pipeline      | 6,000       | 16            | Citrus from Arrow to Randall         | \$192     | \$1,152,000 |
| 3                        |               | Bore and Jack |             | 10            | Jacking under RR Tracks              | LS        | \$100,000   |
| 3                        | 1270          | Pipeline      | 4,000       | 10            | Randall from Citrus to Juniper       | \$120     | \$480,000   |
| 3                        | 1270          | Pipeline      | 2,600       | 10            | Juniper from Randall to SB Ave       | \$120     | \$312,000   |
| 3                        | 1270          | Pipeline      | 1,250       | 6             | SB Ave from Juniper to Cypress Elem  | \$72      | \$90,000    |
| 3                        | 1270          | Pipeline      | 2,500       | 10            | Citrus from Randall to SB Ave        | \$120     | \$300,000   |
| 3                        | 1270          | Pipeline      | 1,200       | 6             | SB Ave from Citrus to Harry T School | \$72      | \$86,400    |
| 3                        | 1270          | Pipeline      | 1,200       | 6             | Citrus from SB Ave to Citrus Cont.   | \$72      | \$86,400    |
| Subtotal                 |               |               |             |               |                                      |           | \$2,606,800 |
| Contingency (25%)        |               |               |             |               |                                      |           | \$651,700   |
| Total Cost               |               |               |             |               |                                      |           | \$3,258,500 |
| Total ac-ft/yr           |               |               |             |               |                                      |           | 543         |
| Cost per ac-ft           |               |               |             |               |                                      |           | \$432       |
| O&M Cost per ac-ft       |               |               |             |               |                                      |           | \$20        |
| Cost per ac-ft from IEUA |               |               |             |               |                                      |           | \$60        |
| Total Cost per ac-ft     |               |               |             |               |                                      |           | \$512       |

**City of Fontana  
Recycled Water Distribution System  
Preliminary Opinion of Probable Cost**

**1430 Zone (East) - Recycled Water Facilities**

| Phase | Pressure Zone | Facility      | Length (ft) | Diameter (in) | Description                        | Unit Cost | Total     |
|-------|---------------|---------------|-------------|---------------|------------------------------------|-----------|-----------|
| 3     |               | Pump Station* | -           | 100           | hp - Arrow & Citrus                | \$2,000   | \$200,000 |
| 3     |               | Hydro Tank    | -           | -             |                                    | LS        | \$200,000 |
| 3     | 1430          | Pipeline      | 2,250       | 12            | Arrow from PS to Oleander          | \$144     | \$324,000 |
| 3     | 1430          | Pipeline      | 3,500       | 6             | Oleander from Arrow to Date School | \$72      | \$252,000 |
| 3     |               | Bore and Jack |             | 6             | Jacking under RR Tracks            | LS        | \$80,000  |
| 3     | 1430          | Pipeline      | 2,500       | 10            | Arrow from oleander to Juniper     | \$120     | \$300,000 |
| 3     | 1430          | Pipeline      | 750         | 8             | Juniper from Arrow to RR Corridor  | \$96      | \$72,000  |
| 3     |               | Bore and Jack |             | 8             | Jacking under RR Tracks            | LS        | \$100,000 |
| 3     | 1430          | Pipeline      | 1,500       | 6             | Cypress Center & Seville Park      | \$72      | \$108,000 |
| 3     | 1430          | Pipeline      | 3,000       | 6             | Miller Park & Fontana Middle Sch   | \$72      | \$216,000 |
| 3     | 1430          | Pipeline      | 2,600       | 8             | Juniper from Arrow to Merrill      | \$96      | \$249,600 |
| 3     |               | Bore and Jack |             | 8             | Jacking under RR Tracks            | LS        | \$100,000 |
| 3     | 1430          | Pipeline      | 3,300       | 8             | Vet Park                           | \$96      | \$316,800 |

\* HP = (1,350 gpm x 150') / (3960\*0.80)

3 - 25 hp pumps & 1 - 25 hp backup

|                             |                    |
|-----------------------------|--------------------|
| Subtotal                    | \$2,518,400        |
| Contingency (25%)           | \$629,600          |
| <b>Total Cost</b>           | <b>\$3,148,000</b> |
| Total ac-ft/yr              | 331                |
| Cost per ac-ft              | \$684              |
| Pumping Cost per ac-ft      | \$27               |
| O&M Cost per ac-ft          | \$20               |
| Cost per ac-ft from IEUA    | \$60               |
| <b>Total Cost per ac-ft</b> | <b>\$791</b>       |

**Total Estimated Cost for Recycled Water System** **\$36,488,300**

**Average Cost per ac-ft (based on 30 yr bond @ 6%)** **\$421**