Fontana Water Company

2010 Urban Water Management Plan

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Prepared for:

San Gabriel Valley Water Company
Fontana Water Company Division

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Chapter 1

PLAN PREPARATION

1.1 BACKGROUND

Section 10617. "Urban Water Supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers.

Section 10620.

(a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

This Urban Water Management Plan (Plan) was prepared in accordance with the California Urban Water Management Planning Act (Act)[1] which was established in 1983. The Act requires every "urban water supplier" to prepare and adopt a Plan, to periodically review its Plan at least once every five years and make any amendments or changes which are indicated by the review. An "Urban Water Supplier" is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000

[1] Water Code Sections 10610 through 10656

acre-feet of water annually. The primary objective of the Act is to direct urban water suppliers to prepare a plan that describes and evaluates sources of supply, reasonable and practical efficient uses, reclamation, and demand management activities. **The Act is directed primarily at retail water purveyors where programs can be immediately applied to the consumers.** Sections 10610 through 10656 of the California Water Code, Urban Water Management Planning Act, were enacted in 1983. The Act, originally known as Assembly Bill (AB) 797, is included in Appendix A.

There have been many new amendments added to the Plan and some reorganization of the California Water Code sections since San Gabriel Valley Water Company's Fontana Water Company Division's (FWC) 2005 Plan update. The additions and changes are as follows:

- Senate Bill (SB) 1087 – Requires reporting of water use projections for lower income households
- AB 1376 – Requires 60 days notice, prior to a public hearing, to any City or County within which the supplier provides water supplies notifying that FWC is reviewing the Plan and is considering changes.
- AB 1420 – Conditions state funding
- SBX7-7 – Requires 20 percent reduction in per capita water use by 2020 (see Appendix B).

Section 10621(a) of the California Water Code states, "Each water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero." However, because of recent changes in Urban Water Management Plan requirements, California State law has extended the deadline for the 2010 Plans to July 1, 2011. Although submitted in 2011, the Plan will be referred to as the "2010 Plan". This 2010 Plan is an update to FWC's 2005 Plan.

1.2 COORDINATION

1.2.1 COORDINATION WITH APPROPRIATE AGENCIES

Section 10620.

(d) (2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

Section 10621

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notices pursuant to this subdivision.

FWC is a retail water supplier that serves most of the City of Fontana and portions of the City of Rialto, City of Rancho Cucamonga, and unincorporated areas of San Bernardino County. FWC has coordinated the preparation of its Plan with Chino Basin Watermaster, City of Fontana, City of Rancho Cucamonga, City of Rialto, City of San Bernardino, County of San Bernardino, Cucamonga Valley Water District, Inland Empire Utilities Agency, San Bernardino Valley Municipal Water District, and West Valley Water District (see Table 1). FWC notified these agencies of the preparation of the 2010 Plan and invited them to participate in the development of its 2010 Plan. FWC notified these agencies at least 60 days prior to the public hearing. A copy of the notification memoranda sent to these agencies is located in Appendix C. Table 1 indicates whether comments were provided to FWC regarding preparation of its 2010 Plan.

1.2.2 NOTICE OF PUBLIC HEARING

Section 10642
Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

Pursuant to Section 6066 of the Government Code, FWC published notice of the public hearing through the newspaper during the week of June 13, 2011 and June 20, 2011. A notice of public hearing was also provided to Chino Basin Watermaster, City of Fontana, City of Rancho Cucamonga, City of Rialto, City of San Bernardino, County of San Bernardino, Cucamonga Valley Water District, Inland Empire Utilities Agency, San Bernardino Valley Municipal Water District, and West Valley Water District. FWC provided the 2010 draft Plan for review at its main office located at 15966 Arrow Route and on the web at www.fontanawater.com. A copy of the notice of the public hearing is provided in Appendix D.

1.2.3 PLAN DISTRIBUTION

Section 10635(b)
The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after submission of its urban water management plan.

FWC will provide a copy of its 2010 Plan to the cities, water management agencies, and relevant public agencies within its service area no later than 60 days after submission of its 2010 Plan to the Department of Water Resources (DWR).

1.2.4 PUBLIC PARTICIPATION

Section 10642
Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

FWC provided notice of a public hearing of its 2010 draft Plan by publishing a notice of public hearing through the newspaper during the week of June 13, 2011 and June 20, 2011. In the same newspaper notice, FWC indicated its draft 2010 Plan update was available for public review at its main office located at 15966 Arrow Route and on the web at www.fontanawater.com, as shown in Appendix D. Public notification of the hearing was made pursuant to Section 6066 of the Government Code. The notice of public hearing was published and distributed to allow involvement of social, cultural, and economic community groups. A copy of the notice of the public hearing is provided in Appendix D. FWC also provided a notice of public hearing to Chino Basin Watermaster, City of Fontana, City of Rancho Cucamonga, City of Rialto, City of San Bernardino, County of San Bernardino, Cucamonga Valley Water District, Inland Empire Utilities Agency, San Bernardino Valley Municipal Water District, and West Valley Water District, as show in Appendix D. FWC held a public hearing at its main office located at 15966 Arrow Route on June 29, 2011 at 2:00 pm. A copy of the public hearing presentation is provided in Appendix D.

1.3 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

1.3.1 SUBMITTAL OF AMENDED PLAN

Section 10621
c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

If DWR requires significant changes to FWC's Plan before it determines the Plan to be "complete," FWC will submit an amended or revised Plan. The amended or revised Plan will undergo adoption by FWC prior to submittal to DWR.

1.3.2 PLAN ADOPTION

Section 10642
After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

FWC held a public hearing on June 29, 2011 at 2:00 pm. Following the public hearing, FWC adopted the draft Plan as of July 1, 2011 on July 5, 2011, as its Plan. A copy of the resolution adopting the Plan is provided in Appendix E.

1.3.3 PLAN IMPLEMENTATION

Section 10643
An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

FWC is committed to the implementation of its 2010 Plan in accordance with Section 10643 of the Act, including the water demand management measures (DMMs) (see Chapter 6) and water conservation requirements of SBX7-7 (see Chapter 3). FWC continues to be committed to the concept of good water management practices and intends to expand its water conservation programs as budgets and staffing allow. FWC's water conservation program will periodically be re-evaluated and modified to

give effect to better methods or techniques as the needs arise. In addition, FWC has reviewed implementation of its 2005 Plan. Since adopting its 2005 Plan, progress has been made towards implementing recycled water use within FWC's service area. FWC has also constructed its Sandhill Surface Water Treatment Plant to more fully utilize its Lytle Creek surface water supply source. In addition, FWC has become a signatory (through San Gabriel Valley Water Company) to the California Urban Water Conservation Council and FWC has continued to implement conservation programs. These items are discussed further in its 2010 Plan.

1.3.4 PLAN SUBMITTAL

Section 10644(a)
An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

Within 30 days after adoption of its Plan, FWC will submit its Plan to DWR, the California State Library, the County of San Bernardino, and the cities of Fontana, Rancho Cucamonga, and Rialto.

1.3.5 PUBLIC REVIEW

Section 10645
Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

Within 30 days after submittal of its 2010 Plan to DWR, FWC will make its 2010 Plan available for public review at its office during normal business hours. FWC will also post the 2010 Plan on its website at www.fontanawater.com.

Chapter 2

SYSTEM DESCRIPTION

2.1 BACKGROUND

FWC is an investor owned public utility water company subject to the regulatory jurisdiction of the California Public Utilities Commission (CPUC). FWC provides public utility water service within its service area which includes most of the City of Fontana and portions of the City of Rialto, City of Rancho Cucamonga, and unincorporated areas of San Bernardino County. FWC's CPUC-approved service area, which encompasses approximately 52 square miles, is shown in Plate 1. FWC currently derives its water supply from groundwater wells that produce water from three adjudicated groundwater basins (Chino Basin, the Rialto Basin, and the Lytle Basin) and one un-adjudicated groundwater basin (No Man's Land Basin[2]), with the Chino Basin as FWC's primary groundwater source. FWC also derives a portion of its water supply from local surface flows from Lytle Creek and untreated imported State Water Project water from San Bernardino Valley Municipal Water District and Inland Empire Utilities Agency. Surface water is treated at FWC's Sandhill Surface Water Treatment Plant (Sandhill Plant). The locations of FWC's service area, the Sandhill Plant, and the Chino Basin, the Rialto Basin, the Lytle Basin, and the No Man's Land Basin are shown in Plate 2.

FWC operates within the service areas of two wholesale water agencies, San Bernardino Valley Municipal Water District (SBVMWD) and Inland Empire Utilities Agency (IEUA).

[2] The "No Man's Land" Basin is an un-adjudicated groundwater basin approximately one square mile located between the Rialto and Chino Basins. The basin is locally referred to as the "No Man's Land" Basin.

2.2 SERVICE AREA PHYSICAL DESCRIPTION

Section 10631.
A plan shall be adopted in accordance with this chapter and shall do the following:
a) Describe the service area of the supplier; including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

2.2.1 SERVICE AREA

FWC is located in San Bernardino County and overlies the Chino Basin, the Rialto Basin, the Lytle Basin, and No Man's Land. The boundaries of FWC are shown on Plates 1 and 2. FWC's service area is about 52 square miles and includes most of the City of Fontana and portions of the City of Rialto, City of Rancho Cucamonga, and unincorporated areas of San Bernardino County. The service area of FWC is largely urbanized consisting of mainly residential, light industrial and commercial uses.

FWC is a retail water agency which is subject to the jurisdiction of the CPUC and currently serving a population of approximately 209,000 people (see Section 2.3 below). The primary service connections are residential with some commercial/institutional, industrial and landscape irrigation users. FWC estimates that the population in 2035 will be approximately 259,300 (see Section 2.3 below). The projected water demand and number of service connections by user category are discussed in Chapter 3.

2.2.2 CLIMATE

Historical rainfall in the FWC area is shown in Table 2. Table 3 shows the monthly average rainfall, monthly average temperature, and monthly evapotranspiration in the FWC area. The historical average rainfall in the FWC area is about 9.6 inches, as shown in Table 3. The annual rainfall in the FWC area in 2009 was approximately 3.0 inches, as shown in Table 2, which was 31 percent of the normal conditions for the

area. The FWC area has a dry climate and summers can reach average daily temperatures in the mid 90s. Although changes in climatic conditions will have an impact, the projected water supply demands will be based on average year, single dry year, and multiple-dry years.

2.3 SERVICE AREA POPULATION

Section 10631.
A plan shall be adopted in accordance with this chapter and shall do the following:
a) Describe the service area of the supplier; including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

2.3.1 POPULATION

FWC provides water service in an area of about 52 square miles and has a current population of about 209,000. Current and projected populations within FWC's service area were estimated in a March 1, 2011 Technical Memorandum prepared by DCSE (See Appendix F). Table 4 presents the current and projected population of the area encompassed by FWC from 2010 to 2035. Projected populations in FWC's service area were based on projections obtained from the Southern California Association of Governments (SCAG). The SCAG data incorporates demographic trends, existing land use, general plan land use policies, and input and projections from the Department of Finance (DOF) and the US Census Bureau.

2.3.2 OTHER DEMOGRAPHIC FACTORS

No other demographic factors affect FWC's water management planning. However, increased population will have an impact on demand.

Chapter 3

SYSTEM DEMANDS

3.1 WATER DEMANDS

3.1.1 PAST, CURRENT, AND PROJECTED WATER DEMAND

Section 10631(e)

(1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.
(B) Multifamily.
(C) Commercial.
(D) Industrial.
(E) Institutional and governmental.
(F) Landscape.
(G) Sales to other agencies.
(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
(I) Agricultural

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

FWC's water supply sources include water produced from local groundwater basins, local surface water, and imported surface water. FWC provides water service to the following water use sectors:

- Residential (Single and Multi-Family Residential)
- Commercial/Institutional
- Industrial
- Landscape Irrigation.

Table 5 shows the historical, current, and projected water use, among water use sectors, within FWC's service area. Table 6 shows the historical, current, and projected total water demand and unaccounted for water. The projected water use is calculated based on the urban per capita water use target developed per SBX7-7 (see Section 3.2 below) and population projections. Based on the projected water uses, FWC does not anticipate any problem meeting its water demands.

3.1.2 PROJECTED WATER DEMAND FOR LOWER INCOME HOUSEHOLDS

Section 10631.1(a)

The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

As of January 2011, FWC records indicate that FWC currently provides service to approximately 11,980 lower income households, which is approximately 29.4 percent of its total current number of residential meters. Based on a 29.4 percent use factor of total residential water demands, the projected water demand for lower income households is about 8,930 acre-feet per year by the year 2035, as shown on Table 6.

3.2 BASELINES AND TARGETS

Section 10608.20 (e)

An urban retail water supplier shall include in its urban water management plan required pursuant to Part 2.6 (commencing with Section 10610) due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

Methodologies for calculating baseline and compliance daily urban per capita water use for the consistent implementation of the Water Conservation Bill of 2009 have

been published by DWR in its October 2010 guidance document.[3] DWR's guidance document was used by FWC to determine the required water use parameters which are discussed below. FWC developed the baselines and targets individually and not regionally.

3.2.1 BASELINE DAILY PER CAPITA WATER USE

The Baseline Daily Per Capita Water Use is defined as the average water use, expressed in gallons per capita per day (GPCD), for a continuous, multi-year baseline period. There are two different baseline periods for calculating Baseline Daily Per Capita Water Use, as follows (CWC Sections 10608.20 and 10608.22):

- *The first baseline period is a continuous 10- to 15-year period, and is used to calculate Baseline Per Capita Water Use per CWC Section 10608.20. The first baseline period is determined as follows:*
    - *If recycled water makes up less than 10 percent of 2008 retail water delivery, use a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.*
    - *If recycled water makes up 10 percent or more of 2008 retail water delivery, use a continuous 10- to 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.*

Recycled water made up less than 10 percent of FWC's 2008 water deliveries. Consequently, the first baseline period will consist of a continuous 10-year period that can be selected between 1995 and 2010.

[3] California Department of Water Resources, Division of Statewide Integrated Water Management, Water Use and Efficiency Branch. *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*. October 1, 2010.

- *The second baseline period is a continuous five-year period, and is used to determine whether the 2020 per capita water use target meets the legislation's minimum water use reduction per CWC Section 10608.22. The continuous five-year period shall end no earlier than December 31, 2007, and no later than December 31, 2010.*

  The second baseline period consisting of a continuous five-year period can be selected between 2004 and 2010.

Unless the urban water retailer's five-year Baseline Daily Per Capita Water Use per CWC Section 10608.12(b)(3) is 100 GPCD or less, Baseline Daily Per Capita Water Use must be calculated for both baseline periods.

Calculation of the Baseline Daily Per Capita Water Use entails the following four steps:

Step 1 *Calculate gross water use for each year in the baseline period using Methodology 1 in DWR's guidance document. According to Methodology 1, gross water use is a measure of water supplied to the distribution system over 12 months and adjusted for changes in distribution system storage and deliveries to other water suppliers that pass through the distribution system. Recycled water deliveries are to be excluded from the calculation of gross water use. Water delivered through the distribution system for agricultural use may be deducted from the calculation of gross water use. Under certain conditions, industrial process water use also may be deducted from gross water use.*

The calculated gross water use, based on FWC's recorded groundwater use, local surface water use, and imported water supplies, for each year in the baseline period is shown on Table 7.

Step 2 *Estimate service area population for each year in the baseline period using Methodology 2 in DWR's guidance document. To obtain an accurate estimate of GPCD, water suppliers must estimate population of the areas that they actually serve, which may or may not coincide with either their jurisdictional boundaries or with the boundaries of cities. According to Methodology 2, data published by the California Department of Finance (DOF) or the U.S. Census Bureau must serve as the foundational building block for population estimates. In some instances, data published by these two sources may be directly applicable. In other instances, additional refinements may be necessary. For example, to account for distribution areas that do not match city boundaries, customers with private sources of supply, or other unique local circumstances, water suppliers may have to supplement the above sources of data with additional local data sources such as county assessor data, building permits data, and traffic analysis zone data. These refinements are acceptable as long as they are consistently applied over time, and as long as they build upon population data sources of the DOF or the U.S Census Bureau.*

FWC's service area population for each year in the baseline period was calculated based on DCSE's March 1, 2011 Technical Memorandum (See Appendix F) and data from SCAG, DOF, and the US Census Bureau.

Step 3 *Calculate daily per capita water use for each year in the baseline period. Divide gross water use (determined in Step 1) by service area population (determined in Step 2).*

The calculated daily per capita water use for each year in the baseline period is shown on Table 7.

Step 4 *Calculate Baseline Daily Per Capita Water Use. Calculate average per capita water use by summing the values calculated in Step 3 and dividing by the number of years in the baseline period. The result is Baseline Daily Per Capita Water Use for the selected baseline period.*

The average per capita water use calculated for a continuous 10-year baseline period (first baseline period) is shown on Table 7, with the highest value of 218 GPCD.

The Baseline Daily Per Capita Water Use for FWC was determined to be **218 GPCD**, based on the highest value calculated for a continuous 10-year period (first baseline period) between 1995 and 2010 (see Table 7).

3.2.2 URBAN WATER USE TARGET

Section 10608.20 (b)

An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) *Eighty percent of the urban retail water supplier's baseline per capita daily water use.*

(2) *The per capita daily water use that is estimated using the sum of the following performance standards:*

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

> ***(3)*** *Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.*
>
> ***(4)*** *A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:*
>
> *(A) Consider climatic differences within the state.*
> *(B) Consider population density differences within the state.*
> *(C) Provide flexibility to communities and regions in meeting the targets.*
> *(D) Consider different levels of per capita water use according to plant water needs in different regions.*
> *(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.*
> *(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.*

The Urban Water Use Target is determined using one of the following methods:

Method 1: *Eighty percent of the urban retail water supplier's Baseline Per Capita Daily Water Use.*

Using this method, the Urban Water Use Target for FWC was calculated as **175 GPCD**, based on the FWC's Baseline Per Capita Daily Water Use of 218 GPCD.

Method 2: *Estimate using the sum of the specified three performance standards.*

Due to insufficient data, this method was not considered.

Method 3: *Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's 20x2020 Water Conservation Plan.*[4]

[4] California Department of Water Resources, State Water Resources Control Board, California Bay-Delta Authority, California Energy Commission, California Department of Public Health, California Public Utilities Commission, and California Air Resources Board. *20x2020 Water Conservation Plan*. February 2010.

Based on the 20x2020 Water Conservation Plan, FWC's service area lies in DWR Hydrologic Region 4 (South Coast), with an established Baseline Per Capita Daily Water Use of 180 GPCD and a Target Per Capita Daily Water Use of 149 GPCD. Using this method, the Urban Water Use Target for FWC was calculated as **142 GPCD**.

Method 4: *Water Savings (Provisional)*

Due to insufficient data, this method was not considered.

FWC's Urban Water Use Target was initially determined to be **175 GPCD** for 2020, based on Method 1 above.

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3.2.3 COMPLIANCE DAILY PER CAPITA WATER USE

Compliance Daily Per Capita Water Use is defined as the Gross Water Use during the final year of the reporting period, and reported in GPCD. The Compliance Daily Per Capita Water Use will be reported in FWC's 2015 Plan (interim compliance) and 2020 Plan (final compliance).

3.2.4 MINIMUM WATER USE REDUCTION REQUIREMENT

Section10608.22

Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

The following calculation is made because the five-year Baseline Per Capita Water Use per CWC Section 10608.12(b)(3) is greater than 100 GPCD. The calculation is used to determine whether the water supplier's 2015 and 2020 per capita water use targets meet the legislation's minimum water use reduction requirement per CWC Section 10608.22. The calculation entails three steps:

Step 1: *Calculate Baseline Daily Per Capita Water Use using a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.*

This value was calculated as **218 GPCD** (see Table 7).

Step 2: *Multiply the result from Step 1 by 0.95. The 2020 per capita water use target cannot exceed this value (unless the water supplier's five-year Baseline Per Capita Water Use is 100 GPCD or less). If the 2020 target is greater than this value, reduce the target to this value.*

The value calculated for 95 percent of the five-year Baseline Per Capita Water Use is **207 GPCD**. FWC's 2020 Urban Water Use Target was determined using Method 1 above to be 175 GPCD, which is lower than the value calculated in this step. Therefore, <u>no adjustment is needed</u> for FWC's 2020 Urban Water Use Target of 175 GPCD.

Step 3: *Set the 2015 target to mid-point between the 10- or 15-year Baseline Per Capita Water Use and the 2020 target determined in Step 2.*

FWC's 2015 Interim Urban Water Use Target is therefore set at **197 GPCD**, which is the mid-point between the 10-year Baseline Daily Per Capita Water Use of **218 GPCD** and the 2020 Urban Water Use Target of 175 GPCD.

Therefore, FWC's 2015 Interim Urban Water Use Target of 197 GPCD and 2020 Urban Water Use Target of 175 GPCD meet the legislation's minimum water use reduction requirement per CWC Section 10608.22. FWC's water demand projections based on these targets, and the projected population from Table 4, are provided in Table 8.

3.3 WATER DEMAND PROJECTIONS

Section 10631(k)

Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

FWC purchases imported water supplies from IEUA and SBVMWD, both wholesale agencies. FWC notified IEUA and SBVMWD of the development of its 2010 Plan and provided both with copies of the draft Plan. In addition, FWC has participated in IEUA's and SBVMWD's development of their respective Urban Water Management Plans by providing data and attending meetings. FWC in turn received information from IEUA and SBVMWD on their existing and planned sources of water.

3.4 WATER USE REDUCTION PLAN

10608.36.

Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

FWC is not an urban wholesale water supplier. Therefore, this requirement is not applicable to FWC.

3.5 PROGRESS REPORT

10608.40.

Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

FWC will report to the DWR on its progress in meeting its urban water use targets, using a standardized form to be developed by the DWR, when the form becomes available.

Chapter 4

SYSTEM SUPPLIES

4.1 WATER SOURCES

Section 10631
A plan shall be adopted in accordance with this chapter and shall do the following:
b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

FWC's water supply sources include water produced from local groundwater basins, local surface water, and imported surface water. FWC's main source of water is the Chino Basin.

4.1.1 GROUNDWATER

FWC pumps groundwater from 18 active Chino Basin wells, including Wells F2A, F4A, F7A, F7B, F17B, F17C, F21A, F22A, F23A, F24A, F26A, F30A, F31A, F35A, F37A, F44A, F44B, and F44C. These wells are located within the Chino Basin, as shown on Plates 1 and 2, and have a combined capacity of about 37,600 gallons per minute (gpm). Wells F4A, F22A, F23A, F24A, F26A, F35A, and F37A, with a combined capacity of about 13,100 gpm, are currently not producing due to water quality issues (See Section 5.3.1). FWC also has four wells that are inactive in the Chino Basin including, F3A, F18A, F25A and F39A. FWC has the legal right to pump groundwater from the Chino Basin pursuant to the 1978 Chino Basin Court adjudication. The Chino Basin Judgment provides groundwater management that allows use of groundwater supplies to meet overlying water demands and provides a mechanism to fund purchases of untreated imported water to replenish the groundwater basin which supplements recharge with local storm water. The Chino Basin Judgment states the Chino Basin Watermaster "shall levy and collect assessments in each year, pursuant to the respective pooling plans, in amounts sufficient to purchase replenishment water to

replace production by any pool during the preceding year that exceeds that pool's allocated share of Safe Yield in the case of the overlying pools, or Operating Safe Yield in the case of the Appropriative Pool". FWC currently owns appropriative rights based on a 0.002 percent share of the 'Operating Safe Yield'. Fontana Union Water Company (Fontana Union), of which FWC is a principal shareholder[5], currently owns appropriative rights based on an 11.66 percent share of the 'Operating Safe Yield'. Appropriators who are parties to the Chino Basin Judgment, such as FWC, are authorized to extract groundwater in excess of the allocated quantities. Appropriators pay an assessment for such extractions to the Chino Basin Watermaster. The assessments are used to purchase untreated imported water to replenish the Chino Basin, through imported surface water recharge. Water to replenish the Chino Basin is purchased from Metropolitan Water District of Southern California (MWD) by Inland Empire Utilities Agency (IEUA) in cooperation with the Chino Basin Watermaster.

FWC pumps groundwater from four active wells in the Rialto Basin including Wells F13A, F13B, F15A, and F49A. These wells are located within the Rialto Basin, as shown on Plates 1 and 2, and have a combined capacity of about 6,900 gpm. The 1961 Rialto Basin Court Decree has provided groundwater management that allows operation of basin storage to meet overlying water demands. Pursuant to the Rialto Basin Court Decree, Fontana Union Water Company and FWC are authorized to pump from the Rialto Basin without restriction, although extractions in some years may be affected by the groundwater elevations in three key wells during March through May. In addition, FWC also has the right to pump an additional 1,600 AFY from the Rialto Basin pursuant to a long-term "Standby Water Lease" agreement with the City of Rialto, if needed.

[5] Fontana Union Water Company is a California mutual water company which holds longstanding legal rights to produce over 60,000 acre-feet per year of groundwater and surface water. Fontana Union's shareholders (of which FWC is a principal shareholder with over 40% of the outstanding stock) are entitled to Fontana Union's water in proportion to their share ownership. Pursuant to a final order of the United States Bankruptcy Court, FWC is entitled to exercise water rights held by Fontana Union to produce water for distribution to FWC's customers.

FWC pumps groundwater from two active wells in the No Man's Land Basin, including Wells F10B and F10C. These wells are located within the No Man's Land Basin, as shown on Plates 1 and 2, and have a combined capacity of about 2,700 gpm. Water production from this basin is not a part of either the Chino Basin Adjudication or the Rialto Basin Decree and is not subject to water production restrictions.

FWC extracts groundwater from the Lytle Creek Region. The Lytle Creek Region consists of the Lytle Basin and Lytle Creek. FWC pumps groundwater from nine active wells in the Lytle Basin, including Wells F27A, F28A, F29A, F32A, F33A, F34A, F36A, F40A, and F42A. These nine wells are located within Lytle Basin, as shown on Plates 1 and 2, and have a combined capacity of about 6,500 gpm. FWC is currently replacing Well F41A with a well (Well F54A) which has similar capacity of approximately 1,700 gpm within the Lytle Basin. The 1897 McKinley Decree, which specifies surface water allocations, and the January 28, 1924 Judgment by the Superior Court for the County of San Bernardino, which confirms the McKinley Decree and specifies allowed groundwater diversions, allow Fontana Union and FWC to divert surface water and pump groundwater from the Lytle Creek Region up to a maximum of 3,480.78 miner's inches, or 69.6 cubic feet per second (approximately 50,400 acre-feet per year, or AFY). The amount includes up to 2,500 miner's inches, (approximately 36,200 AFY) of allowable combined surface and groundwater extractions to augment deficiencies in surface water diversions. FWC is allowed to extract and divert a combined 1,300 miner's inches, or 26 cubic feet per second (approximately 18,800 AFY) of groundwater from the Lytle Creek Region.

4.1.2 LOCAL SURFACE WATER

FWC produces local surface water from the Lytle Creek Region. The Lytle Creek Region consists of the Lytle Basin and Lytle Creek. Lytle Creek is located in the Lytle Creek Watershed which originates in the vicinity of Mount San Antonio in the San

Bernardino National Forest, and includes the Upper Santa Ana River Basin located in San Bernardino County. Lytle Creek, includes the North Fork Lytle Creek, Middle Fork Lytle Creek, and South Fork Lytle Creek, each flowing eastward. Water from Lytle Creek is used by Southern California Edison to generate hydroelectric power. Following the power generation, Lytle Creek water is diverted to FWC's Sandhill Plant and is treated for domestic water use within FWC's system. In addition to Lytle Creek, FWC obtains water from the Grapeland Tunnel, which is a groundwater infiltration system with extensive collector lines in Lytle Creek Canyon tributaries and a large line running below the streambed of Lytle Creek. Water from the Grapeland Tunnel historically has flowed directly into the FWC water system. It also can be combined with the Lytle Creek stream flow to the Sandhill Plant. The 1897 McKinley Decree, which specifies surface water allocations, and the January 28, 1924 Judgment by the Superior Court for the County of San Bernardino, which confirms the McKinley Decree and specifies allowed groundwater diversions, allow Fontana Union and FWC to divert surface water and groundwater from the Lytle Creek Region up to a maximum of 3,480.78 miner's inches, or 69.6 cubic feet per second (approximately 50,400 acre-feet per year, or AFY). The amount includes up to 2,500 miner's inches, (approximately 36,200 AFY) of allowable combined surface and groundwater extractions to augment deficiencies in surface water diversions. FWC is allowed to extract and divert a combined 1,300 miner's inches, or 26 cubic feet per second (approximately 18,800 AFY) of groundwater from the Lytle Creek Region. For the purpose of this Plan, FWC's average diversion of approximately 5,700 AFY in normal rainfall years (during 1996, 1997, 2003, 2004 and 2005) will be available from Lytle Creek during normal rainfall years in the next twenty years. FWC's average diversion of approximately 5,900 AFY during the recent drought period from 1999 to 2002 and from 2006 to 2009 is estimated to be available from Lytle Creek during future multiple dry years.

4.1.3 IMPORTED WATER

FWC has the ability to purchase and use untreated imported surface water from SBVMWD and from MWD, through IEUA. Imported water is treated at FWC's Sandhill Plant. FWC has upgraded (including construction of conventional pretreatment facilities and capacity expansion) its existing surface water treatment plant (Sandhill Plant) to treat State Water Project (SWP) water from SBVMWD and IEUA, in addition to local surface water from Lytle Creek. The Sandhill Plant upgrades increased the plant's capacity from 17 million gallons per day (MGD) to 29 MGD.

FWC can receive up to 24,000 AFY (through a 40 cubic feet per second connection) of untreated imported SWP water from IEUA. IEUA's service area includes the Cities of Chino, Chino Hills, Fontana, Montclair, Ontario, and Upland and water agencies consisting of FWC, Monte Vista Water District, Cucamonga Valley Water District, and San Antonio Water Company. Water used in IEUA's service area comes from both local and imported sources. Local sources include local groundwater, surface water and, more recently, recycled water. Untreated imported SWP water is purchased by IEUA from MWD for wholesale redistribution to local retail water purveyors, including FWC.

FWC also has the ability to purchase and use untreated imported SWP water from SBVMWD. A portion of FWC's service area is within SBVMWD's service area. FWC can currently receive up to 5,000 AFY of imported untreated SWP water from SBVMWD (through a 14 cubic feet per second connection) for use in that portion of FWC's service area. FWC expects to receive greater quantities of SWP water from SBVMWD as population growth and development increase in the SBVMWD portion of FWC's service area. SBVMWD was formed in 1954 and is an independent SWP contractor. SBVMWD, which covers approximately 325 square miles in southwestern San Bernardino County, serves a population of approximately 600,000. SBVMWD's service area includes the eastern two-thirds of the San Bernardino Valley, the Crafton Hills, and a portion of the Yucaipa Valley, and includes the Cities and communities of

San Bernardino, Colton, Fontana, Loma Linda, Redlands, Rialto, Bloomington, Highland, Grand Terrace, and Yucaipa.

4.1.4 RECYCLED WATER

A discussion of recycled water opportunities within FWC's service area is provided in Section 4.5.

4.1.5 TOTAL WATER SUPPLIES

FWC's historical and projected water supplies from groundwater, local surface water, imported surface water, and recycled water are shown on Table 9. Table 10 provides FWC's projected water supplies during future single and multiple dry year conditions.

4.2 GROUNDWATER

Section 10631(b)

If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

4.2.1 CHINO BASIN

Management of the Chino Basin is based on the Chino Basin Judgment, a copy of which can be found in Appendix G. FWC is a party to the Chino Basin Judgment and produced over 24,000 AFY from the Chino Basin in 2004, which accounts for over half of FWC's total water supply.

The Chino Basin, in San Bernardino County, is a groundwater basin in the Upper Santa Ana Watershed. The basin is bounded by the Rialto-Colton, Chino, San Jose, and Cucamonga faults, and by Puente Hills and the San Gabriel Mountains. The total surface area of the basin is approximately 154,000 acres (240 sq. miles).

The Chino Basin currently contains 5 million acre-feet (AF) of water in storage, with an additional unused storage capacity, based on historical water levels in the basin, of about 1 million AF. Currently, total groundwater production from the basin is approximately 165,000 AFY. Historical groundwater levels in the eastern portion of the Chino Basin, from which FWC produces water, are provided in Plate 3.

The Chino Basin was adjudicated under a Judgment (Chino Basin Judgment), entered on January 27, 1978 by the Superior Court for the County of San Bernardino. The Chino Basin Judgment established an average Safe Yield in the Chino Basin of 140,000 AFY (July 1 to June 30). The Safe Yield is defined in the Chino Basin Judgment as "the long-term average annual quantity of ground water (excluding replenishment of stored water but including return flow to the Basin from use of replenishment or stored water) which can be produced from the Chino Basin under conditions of a particular year without causing an undesirable result." The 1978 Chino Basin Judgment's allocation of the Safe Yield of the Chino Basin includes three separate Pools: the "Overlying Agricultural Pool (82,800 AFY)", the "Overlying Non-Agricultural Pool (7,366 AFY)", and the "Appropriative Pool (49,834 AFY)". FWC currently owns appropriative rights based on a 0.002 percent share of the 'Operating

Safe Yield'. Fontana Union (of which FWC is a principal shareholder) currently owns appropriative rights based on an 11.66 percent share of the 'Operating Safe Yield'.

Appropriators who are parties to the Chino Basin Judgment, such as FWC, are authorized to produce groundwater above their allocated quantities. Appropriators pay assessments for all production to the Chino Basin Watermaster. The assessments are used to replenish the basin, through imported surface water recharge. The Chino Basin Watermaster purchases water to replenish the Chino Basin from MWD through IEUA. Future additional supplemental sources of replenishment water are expected to come from recycled water and from increased recharge of storm water.

In addition, the Chino Basin Watermaster reallocates the unused portion of the Chino Basin safe yield from the Overlying Agricultural Pool to the Appropriative Pool members as a supplement to the Appropriative Pool share of Operating Safe Yield rights in any year. These transfers are permanent if agricultural land has been converted to non-agricultural use, or temporary if agricultural pool extractions are less than their share of the safe yield. Over the past 10 years, the total portion of the annual Agricultural Pool reallocated to Appropriative Pool members has ranged from 40,822 AFY to 73,662 AFY, with an average of approximately 48,387 AFY. As agricultural production declines within the Chino Basin, the reallocation of water to the Appropriative Pool will increase.

4.2.2 RIALTO BASIN

The stipulated Court Decree affecting the Rialto Basin, entered in 1961, has provided groundwater management that allows operation of basin storage to meet overlying water demands. A copy of the Rialto Basin Decree can be found in Appendix H.

The Rialto Basin underlies a portion of the Upper Santa Ana Valley in southwestern San Bernardino County and northwestern Riverside County. The Rialto Basin is about 10 miles long and varies in width from about 3.5 miles in the northwestern part to about 1.5 miles in the southeastern part. The Rialto Basin is bounded by the San Gabriel Mountains on the northwest, the San Jacinto fault on the northeast, the Badlands on the southeast, and the Rialto-Colton fault on the southwest. The Rialto Basin generally drains to the southeast, toward the Santa Ana River.

Under the 1961 Rialto Basin Court Decree, FWC is entitled to produce water from the Rialto Basin with no extraction limit in most years. Certain producers in the Rialto Basin, including FWC by virtue of its shareholdings in Fontana Union, are subject to the Rialto Basin Decree, entered on December 22, 1961 by the Superior Court for the County of San Bernardino. According to the Rialto Basin Decree, FWC and Fontana Union are authorized to pump from the Rialto Basin without restriction, except pumping in some water years (October 1 to September 30) can be affected by groundwater elevations between March and May for three specific “index” wells (Duncan Well, Willow Street Well, and Boyd Well). Under specified conditions, groundwater extractions may be limited during certain months.

In addition to its irrevocable right to pump water pursuant to rights held by Fontana Union, FWC can pump an additional 1,600 acre feet of water from the Rialto Basin during any period of pumping limitation, pursuant to a long term water rights lease with the City of Rialto.

From 1984 to 2000, average groundwater levels were close to or higher than 1,002.3 feet above Mean Sea Level (MSL). It is reasonable to assume that at least 7,600 AFY, which is the average production during the past ten years, from 2001 to 2010, will be available for pumping by FWC during the next twenty-five years. FWC’s historical annual production of approximately 2,000 AFY per well during the drought period from 1988 to1990, which would equate to a total of approximately 8,000 AFY for the four wells currently located in the Rialto Basin, is estimated to be available during

future droughts. In addition, FWC has the right to pump an additional 1,600 AFY from the Rialto Basin pursuant to a long-term "Standby Water Lease" agreement with the City of Rialto, if needed.

4.2.3 NO MAN'S LAND BASIN

There is no legal restriction placed on the quantity of groundwater FWC is entitled to produce from the unnamed basin (also referred to as No Man's Land). This basin is located between the Rialto and Chino Basins. The No Man's Land Basin is hydrogeologically separate from the Chino and Rialto Basins. Water production from this basin is not a part of either the Chino Basin Adjudication or the Rialto Basin Decree and is not subject to water production restrictions.

4.2.4 LYTLE BASIN

The Lytle Creek Region consists of Lytle Creek and the Lytle Basin. The watershed of Lytle Creek is approximately 46.4 square miles. The area of the Lytle Basin is approximately 22.3 square miles. A copy of the 1924 Lytle Judgment can be found in Appendix I.

The draft 2010 San Bernardino Valley Regional Urban Water Management Plan[6] generally describes the Lytle Basin as: The Lytle Basin is an integral part of the Upper Santa Ana Valley Groundwater Basin and a major recharge area for both the Bunker Hill and Rialto Basins. Sediments within the Lytle Basin are highly permeable and the aquifer has a high specific yield. High permeability and specific yield generally results in

[6] The draft 2010 San Bernardino Valley Regional Urban Water Management Plan was prepared by Kennedy/Jenks Consultants in May 2011 for San Bernardino Valley Municipal Water District, East Valley Water District, City of Loma Linda, City of Redlands, City of San Bernardino Municipal Water Department, West Valley Water District, Yucaipa Valley Water District, and City of Colton.

an aquifer that responds rapidly to changes in inflow (precipitation and streamflow) and outflow (groundwater pumping, streamflow, and subsurface outflow). The Lytle Basin is bounded on the west by the Rialto Basin along the Lytle Creek fault, and on the east and southeast by the Bunker Hill Basin along the Loma Linda fault. The Lytle Basin is bounded to the northwest by the San Gabriel Mountains. Runoff from the mountains flows south/southeast through Lytle and Cajon Creeks into the basin.

The 1897 McKinley Decree, which specifies surface water allocations, and the January 28, 1924 Judgment by the Superior Court for the County of San Bernardino, which confirms the McKinley Decree and specifies allowed groundwater diversions, allow Fontana Union and FWC to divert surface water and pump groundwater from the Lytle Creek region up to a maximum of 3,480.78 miner's inches, or 69.6 cubic feet per second (approximately 50,400 AFY). The amount includes up to 2,500 miner's inches, (approximately 36,200 AFY) of allowable combined surface and groundwater extractions to augment deficiencies in surface water diversions. FWC is allowed to extract and divert a combined 1,300 miner's inches, or 26 cubic feet per second (approximately 18,800 AFY) of groundwater from the Lytle Creek Region. The Lytle Basin is managed by the Lytle Creek Water Conservation Association which is made up of the successors to the stipulated parties of the Judgment. Because the Lytle Basin groundwater and surface water supplies are highly variable, especially during dry years, FWC has not always been able to divert its full allocation. For the purpose of this Plan, FWC's average groundwater production of approximately 9,400 AFY in normal rainfall years (during 1996, 1997, 2003, 2004 and 2005) will be available for pumping and diversion by FWC during normal rainfall years in the next twenty years. FWC's average annual production of approximately 11,400 AFY during the recent drought period from 1999 to 2002 and from 2006 to 2009 is estimated to be available during future multiple dry years.

4.2.5 LOCATION, AMOUNT AND SUFFICIENCY OF GROUNDWATER PUMPED FOR THE PAST FIVE YEARS

Section 10631(b)(3)

A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

4.2.5.1 GROUNDWATER SOURCES IN CHINO BASIN

FWC pumps groundwater from 18 active wells in the Chino Basin, including Wells F2A, F4A, F7A, F7B, F17B, F17C, F21A, F22A, F23A, F24A, F26A, F30A, F31A, F35A, F37A, F44A, F44B, and F44C. These wells are located within the Chino Basin, as shown on Plates 1 and 2, and have a combined capacity of about 37,600 gpm. Wells F4A, F22A, F23A, F24A, F26A, F35A, and F37A, with a combined capacity of about 13,100 gpm, are currently not producing due to water quality issues (See Section 5.3.1). FWC also has four wells that are inactive in the Chino Basin including, F3A, F18A, F25A and F39A. FWC's historical groundwater production from the Chino Basin is shown in Table 9. FWC's groundwater production from the Chino Basin from 2006 to 2010 has averaged approximately 15,000 AFY.

FWC is a party to the Chino Basin Judgment and has the legal right to pump groundwater from the Chino Basin. The Court adjudication of the Chino Basin in 1978 provides groundwater management that allows operation of basin storage to meet overlying water demands and provide a mechanism to fund recharge of imported water to supplement recharge of local water. According to the Chino Basin Judgment, the Chino Basin Watermaster "shall levy and collect assessments in each year, pursuant to the respective pooling plans, in amounts sufficient to purchase replenishment water to replace production by any pool during the preceding year that exceeds that pool's allocated share of Safe Yield in the case of the overlying pools, or Operating Safe Yield in the case of Appropriative Pool". FWC currently owns appropriative rights based on

0.002 percent share of the 'Operating Safe Yield'. Fontana Union (of which FWC is a principal shareholder) currently owns appropriative rights based on 11.66 percent share of the 'Operating Safe Yield'. Appropriators who are parties to the Chino Basin Judgment, such as FWC, are authorized to produce groundwater in excess of the allocated quantities. Appropriators pay assessments for all production to the Chino Basin Watermaster. The assessments are used to replenish the Chino Basin, through imported surface water recharge. The Chino Basin Watermaster purchases water to replenish the Chino Basin from MWD through IEUA. **Therefore, based on historical and on-going management practices, FWC will be able to rely on the Chino Basin for adequate supply over the next 25 years under single year and multiple year droughts.**

4.2.5.2 GROUNDWATER SOURCES IN RIALTO BASIN

FWC pumps groundwater from four active wells in the Rialto Basin, including Wells F13A, F13B, F15A, and F49A. These wells are located within the Rialto Basin, as shown on Plates 1 and 2, and have a combined capacity of about 6,900 gpm. FWC's historical groundwater production from the Rialto Basin is shown in Table 9. FWC's groundwater production from the Rialto Basin from 2006 to 2010 has averaged approximately 7,100 AFY.

The Rialto Basin Court Decree has provided groundwater management that allows operation of basin storage to meet overlying water demands. Pursuant to the Rialto Basin Decree, Fontana Union and FWC are authorized to pump from the Rialto Basin without restriction, although extractions in some years may be affected by the groundwater elevations in three specific index wells during March through May.

Therefore, based on historical and on-going management practices, FWC will be able to rely on the Rialto Basin for adequate supply over the next 25 years under single year and multiple year droughts.

4.2.5.3 GROUNDWATER SOURCES IN NO MAN'S LAND BASIN

FWC pumps groundwater from two active wells in the No Man's Land Basin, including Wells F10B and F10C. These wells are located within the No Man's Land Basin, as shown on Plates 1 and 2, and have a combined capacity of about 2,700 gpm. FWC's historical groundwater production from the No Man's Land Basin is shown in Table 9. FWC's groundwater production from the No Man's Land Basin from 2006 to 2010 has averaged approximately 4,100 AFY. FWC has historically increased groundwater production from the No Man's Land and expects to be able to produce approximately 6,000 AFY by 2015. As discussed previously, the No Man's Land Basin is unadjudicated and water production restrictions are not applicable.

Therefore, based on historical production, FWC will be able to rely on the No Man's Land Basin for adequate supply over the next 25 years under single year and multiple year droughts.

4.2.5.4 GROUNDWATER SOURCES IN LYTLE BASIN

FWC extracts groundwater from the Lytle Creek Region. The Lytle Creek Region consists of the Lytle Basin and Lytle Creek. FWC pumps groundwater from the Lytle Basin from nine active wells, including Wells F27A, F28A, F29A, F32A, F33A, F34A, F36A, F40A, and F42A. These nine wells are located within Lytle Basin, as shown on Plates 1 and 2, and have a combined capacity of about 6,500 gpm. In addition, FWC is currently replacing Well F41A with a well (Well F54A) of similar capacity of approximately 1,700 gpm within the Lytle Basin. FWC's historical groundwater production from the Lytle Basin is shown in Table 9. FWC's groundwater production from the Lytle Basin from 2006 to 2010 has averaged approximately 10,600 AFY.

The 1897 McKinley Decree, which specifies surface water allocations, and the January 28, 1924 Judgment by the Superior Court for the County of San Bernardino, which confirms the McKinley Decree and specifies allowed groundwater diversions, allow Fontana Union and FWC to divert surface water and groundwater from the Lytle Creek Region up to a maximum of 3,480.78 miner's inches, or 69.6 cubic feet per second (approximately 50,400 acre-feet per year, or AFY). The amount includes up to 2,500 miner's inches, (approximately 36,200 AFY) of allowable combined surface and groundwater extractions to augment deficiencies in surface water diversions. FWC is allowed to extract and divert 1,300 miner's inches, or 26 cubic feet per second (approximately 18,800 AFY) of groundwater from the Lytle Creek Region.

Therefore, based on historical and on-going management practices, FWC will be able to rely on the Lytle Basin for adequate supply over the next 25 years under single year and multiple year droughts.

4.2.6 LOCATION, AMOUNT AND SUFFICIENCY OF GROUNDWATER PROJECTED TO BE PUMPED

Section 10631(b)(4)

A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

4.2.6.1 GROUNDWATER SOURCES IN CHINO BASIN

FWC's average annual production from the Chino Basin from 1995 to 2009 was approximately 17,050 AFY. During the most recent three years, FWC's average annual production was approximately 16,770 AFY. According to IEUA's draft 2010 Urban Water Management Plan, total groundwater production in IEUA's service area is estimated to increase from approximately 110,000 to 162,800 AFY by 2035. The Chino Basin Judgment authorizes FWC to produce all the water it requires from the Chino Basin for

beneficial use by FWC's public utility customers, subject to replenishment assessments, and more than ample water is present in the Chino Basin to allow FWC to do so. FWC will construct additional wells and associated infrastructure in the Chino Basin to match additional water demands with growth in its service area. Because of groundwater contamination in the Chino Basin from nitrate and perchlorate, production of groundwater from affected wells may be interrupted until wellhead treatment is installed. FWC has the necessary technical and financial resources available to allow FWC to quickly respond to any such water quality incidents to assure continuity and reliability of water service. FWC's Wells F17B and F17C, which pump from the Chino Basin, currently have perchlorate treatment equipment, which removes perchlorate from these sources. FWC plans to install additional treatment or drill replacement wells which is discussed in Section 5.3.1.

Therefore, based on historical and on-going management practices, FWC will be able to rely on the Chino Basin for adequate supply over the next 25 years under single year and multiple year droughts.

4.2.6.2 GROUNDWATER SOURCES IN RIALTO BASIN

FWC and other pumpers subject to the 1961 Rialto Basin Decree are authorized to pump from the Rialto Basin without restriction, although extractions for any given year may be affected by the groundwater elevations in three key wells measured during the months March and May. FWC's historical total groundwater production from the Rialto Basin is shown in Table 9.

From 1984 to 2000, average groundwater levels were close to or higher than 1,002.3 feet above MSL. It is reasonable to assume that approximately 7,600 AFY, which is the average production during the past ten years, from 2001 to 2010, will be available for pumping by FWC during the next twenty-five years. FWC's annual production of approximately 6,200 AFY, during the recent drought periods from 1999 to

2002 and 2006 to 2009, is estimated to be available during future droughts. In addition, FWC has the right to pump an additional 1,600 AFY from the Rialto Basin pursuant to a "Standby Water Lease" agreement with the City of Rialto, if needed.

Therefore, based on historical and on-going management practices, FWC will be able to rely on the Rialto Basin for adequate supply over the next 25 years under single year and multiple year droughts.

4.2.6.3 GROUNDWATER SOURCES IN NO MAN'S LAND BASIN

A US Bankruptcy Court confirmed Plan of Reorganization for Fontana Union Water Company allocated groundwater production from the No Man's Land Basin and water production restrictions are not applicable. FWC's groundwater production from the No Man's Land Basin from 2006 to 2010 has averaged approximately 4,100 AFY. FWC has historically increased groundwater production from the No Man's Land and expects to be able to produce approximately 6,000 AFY by 2015.

Therefore, based on historical production, FWC will be able to rely on the No Man's Land Basin for adequate supply over the next 25 years under single year and multiple year droughts.

4.2.6.4 GROUNDWATER SOURCES IN LYTLE BASIN

FWC can pump and divert more than 18,800 AFY of groundwater from the Lytle Basin. However, the basin is subject to significant changes in groundwater elevation. This was demonstrated after the significant rainfall received in March of 1993. In the months following a series of storms during that very wet year, basin static water levels increased 200 feet in three months. This implies that basin static water levels could likewise decrease and thus affect groundwater production during sustained dry years. For the purpose of this Plan, FWC's average groundwater production of approximately

9,400 AFY in normal rainfall years (during 1996, 1997, 2003, 2004 and 2005) is estimated to be available for pumping and diversion by FWC during normal rainfall years in the next twenty years. FWC's annual production of approximately 11,400 AFY, during the recent drought periods from 1999 to 2002 and 2006 to 2009, is estimated to be available during future droughts.

Therefore, based on historical and on-going management practices, FWC will be able to rely on the Lytle Basin for adequate supply over the next 25 years under single year and multiple year droughts.

4.3 TRANSFER OPPORTUNITIES

Section 10631(d)
Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

4.3.1 SHORT-TERM

FWC has emergency interconnections with other water agencies that serve as short-term emergency exchange opportunities. Emergency interconnections are distribution system interconnections between water agencies for use during critical situations where one system or the other is temporarily unable to provide sufficient potable water to meet its water demands and/or fire protection needs. An emergency interconnection will allow a water system to continue serving water during critical situations such as local water supply shortages as a result of earthquakes, fires, prolonged power outages, and droughts. FWC has the ability to receive water from interconnections with the following water agencies:

- Cucamonga Valley Water District – Hunter's Ridge
- Cucamonga Valley Water District – Cherry Avenue

In addition, IEUA and SBVMWD describe transfer opportunities within their respective 2010 Plans, which are incorporated by reference. As a member agency to both IEUA and SBVMWD, FWC may benefit from these water transfer opportunities.

4.3.2 LONG-TERM

IEUA and SBVMWD describe transfer opportunities within their respective 2010 Plans, which are incorporated by reference. As a member agency to both IEUA and SBVMWD, FWC may benefit from these water transfer opportunities.

4.4 DESALINATED WATER OPPORTUNITIES

Section 10631(i)

Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

Desalting of groundwater is currently conducted within the southerly portions of the Chino Basin. Desalting facilities are owned and operated by the Chino Desalter Authority (CDA). The CDA completed construction of the Chino I Desalter Expansion and the Chino II Desalter facilities in February 2006. The Chino I Desalter includes a 2.6 MGD of Volatile Organic Compound treatment (air stripping), 4.9 MGD of nitrate treatment (ion exchange), and 6.7 MGD of nitrate and Total Dissolved Solids treatment (reverse osmosis) for a total of 14.2 MGD. The Chino II Desalter provides 4.0 MGD of ion exchange treatment and 6.0 MGD of reverse osmosis treatment for a total of 10.0 MGD. FWC could negotiate a CDA agreement for potential transfers of CDA water and/or water rights.

FWC is looking for new sources of water supply and is receptive in coordinating with other agencies that have ocean water desalination programs.

4.5 RECYCLED WATER OPPORTUNITIES

4.5.1 RECYCLED WATER AND POTENTIAL FOR USE

Section 10633

The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and …

Achieving maximum use of all available recycled water is one of FWC's and IEUA's water management goals. Recycled water could be used for groundwater recharge and storage as well as direct use by customers who are equipped and able to use recycled water. FWC strongly supports the use of recycled water and plans to provide recycled water to customers in its service area who are able to use it, when it is made available. FWC has entered into an agreement with the City of Fontana (See Appendix J) for the direct use of recycled water in the southern portion of FWC's service area known as 1158 Zone. This project will provide up to approximately 2,000 acre-feet per year of recycled water within the City of Fontana to schools, parks, and commercial customers as part of a multi-phased program. As part of an existing agreement with IEUA, the City of Fontana is entitled to up to approximately 12,000 acre-feet per year of tertiary treated recycled water.

4.5.2 WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL

Section 10633

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

IEUA operates four Regional Water Recycling Plants (RPs), including RP-1, RP-4, RP-5, and the Carbon Canyon Water Recycling Facility (CCWRF), that treat wastewater within IEUA's service area and produce disinfected tertiary treated recycled water compliant with California Department of Public Health (CDPH) Title 22 regulations. IEUA's RP-4 treats local wastewater generated by the City of Fontana. IEUA's RPs primarily deliver recycled water to the Cities of Chino, Chino Hills, Ontario, and Rancho Cucamonga (See Appendix K). The four water reclamation facilities have a total combined design treatment capacity of approximately 86 MGD. Currently, all four reclamation facilities treat a total combine average daily flow of about 60 MGD. A system of regional trunk and interceptor sewers, owned and operated by IEUA, transport wastewater to the RPs. In order to avoid overloading at any one facility, wastewater can be diverted from one RP to another. Local sewer systems are owned and operated by local agencies.

IEUA's RP-4, which treats local wastewater generated by the City of Fontana, is located near the intersection of Etiwanda Ave. and 6th St. in the City of Rancho Cucamonga. RP-4 treats an average flow of 5 MGD of wastewater and is operated in conjunction with RP-1 to provide recycled water to users. The RP-4 facility was recently expanded to a capacity of 14 MGD.

IEUA's "Ten-Year Capital Improvement Plan Fiscal Year 2010/11 Volume II", June 2010 (See Appendix L) provides historical and projected quantities of wastewater treated from RP-1, RP-4, RP-5, and CCWRF. All wastewater treated from these four Regional Water Recycling Plants meets recycled water standards.

IEUA's Draft 2010 Urban Water Management Plan indicates agencies within IEUA's service area will use approximately 49,500 AFY, by 2015, and approximately 63,006 AFY, by 2035, of recycled water. In addition, IEUA projects FWC will use

approximately 6,000 AFY of recycled water from 2015 to 2035, (See Appendix M). FWC projects approximately 1,500 AFY of recycled water demands within its service area by 2015, with a gradual increase to approximately 6,000 AFY of recycled water demands within its service area by 2035 (See Table 9 and Table 10).

4.5.3 CURRENT RECYCLED WATER USE

Section 10633
(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use

FWC strongly supports the use of recycled water and plans to provide recycled water to customers in its service area who are able to use it, when it is made available. FWC has entered into an agreement with the City of Fontana (See Appendix J) for the direct use of recycled water in the southern portion of FWC's service area known as 1158 Zone. This project will provide up to approximately 2,000 acre-feet per year of recycled water within the City of Fontana to schools, parks, and commercial customers as part of a multi-phased program. As part of an existing agreement with IEUA, the City of Fontana is entitled to up to approximately 12,000 acre-feet per year of tertiary treated recycled water.

4.5.4 POTENTIAL USES OF RECYCLED WATER

Section 10633
(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

IEUA's "Recycled Water Three Year Business Plan", dated November 28, 2007, projected the total additional recycled water use (for direct use and groundwater

recharge) within IEUA's service area by fiscal year 2010-11 at approximately 50,000 AFY. IEUA projected supplying recycled water within the City of Fontana in the amount of 1,656 AFY, by fiscal year 2009-10, and an additional 5,000 AFY, by fiscal year 2010-11, for a total recycled water supply of approximately 6,656 AFY. IEUA identified potential recycled water users including schools, parks, and commercial customers, for irrigation and other uses. IEUA's "Draft Three Year Business Plan Update Fiscal Year 2010-11", dated September 28, 2010, indicates the anticipated scheduling of the total projected additional recycled water use of 50,000 AFY has been shifted to fiscal year 2011-12 due to recent economic conditions. IEUA's draft 2010 Urban Water Management Plan indicates FWC will use approximately 6,000 AFY of recycled water by 2015.

Additional facilities will be required to accept delivery of recycled water from IEUA for delivery to FWC's customers throughout the City of Fontana. These facilities will include additional pipelines, and possibly booster stations, and reservoirs. FWC is finalizing an agreement with the City of Fontana for the direct use of recycled water in the southern portion of FWC's service area known as the 1158 Zone. This project will provide up to approximately 2,000 acre-feet of recycled water within the City of Fontana to schools, parks, and commercial customers. FWC plans to design and construct a recycled water distribution system in the 1158 Zone to meet those needs. Recycled water will be provided by IEUA's RP-4.

4.5.5 PROJECTED RECYCLED WATER USE

Section 10633
(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15 and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision

Although recycled water use projections are not quantified, FWC's 2005 Urban Water Management Plan indicates recycled water will be provided to customers when recycled water is available and necessary infrastructure is constructed.

IEUA's draft 2010 Urban Water Management Plan indicates FWC will use 6,000 AFY of recycled water by 2015. IEUA projects FWC will continue to use 6,000 AFY of recycled water over the next 20 years.

FWC has entered into an agreement with the City of Fontana (See Appendix J) for the direct use of recycled water in the southern portion of FWC's service area known as 1158 Zone. This project will provide up to approximately 2,000 acre-feet per year of recycled water within the City of Fontana to schools, parks, and commercial customers as part of a multi-phased program.

4.5.6 ENCOURAGING USE OF RECYCLED WATER

Section 10633
(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

FWC plans to use recycled water provided by IEUA. IEUA's "Recycled Water Three Year Business Plan" identified the three year capital improvement budget for the Plan, including laterals and retrofit financing is approximately $123 million. The Plan indicated funding will be obtained from State and Federal Grants ($28 million), State Revolving Fund (SRF) loans ($87 million), and IEUA Bond Funds ($5 to $10 million). Based on anticipated recycled water sales of 50,000 AFY, the recycled water sales will generate approximately $4.5 million annually. In addition, MWD's Local Resources Program (LRP) will provide approximately $6 million in funding annually. The Plan anticipates revenues from recycled water sales, MWD LRP funding, and other IEUA revenue sources will be sufficient to meet the debt service on loans. IEUA's draft 2010 Urban Water Management Plan indicates FWC will use 6,000 AFY of recycled water by 2015. IEUA projects FWC will continue to use 6,000 AFY of recycled water over the next 20 years.

In addition, IEUA's draft 2010 Urban Water Management Plan, which is incorporated by reference, provides information regarding IEUA's programs which encourage recycled water use within its service area.

4.5.7 OPTIMIZING RECYCLED WATER USE

Section 10633
(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

FWC plans to use recycled water provided by IEUA. IEUA's "Recycled Water Three Year Business Plan" indicated IEUA will apply for SRF funding for all local laterals and will provide 100 percent funding for the costs for all laterals not funded by SRF low interest loans. In addition, IEUA will attempt to secure MWD funding for all future "on-site" retrofit plumbing costs to convert to recycled water. However, IEUA will offer to all public facilities 100 percent financing of the initial retrofit plumbing costs.

4.6 FUTURE WATER PROJECTS

Section 10631
(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water uses as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

FWC obtains water from local groundwater, local surface water, and imported surface water sources. Although these water supply sources allow FWC to provide

sufficient water service, currently and in the future, there are various water cooperation opportunities that may allow FWC to enhance and augment existing water supplies. These opportunities may increase FWC's water supply reliability and create new water supply sources. In addition, these opportunities may decrease vulnerability of water outages during drought periods and other emergency water supply situations.

4.6.1 IEUA RECYCLED WATER

As mentioned in Section 4.5, IEUA provides recycled water to agencies within its service area. Water recycling involves treatment of wastewater to create a high quality, safe source of water. Recycled water can be used for non-potable purposes including landscape and agricultural irrigation, construction, industrial cooling, and groundwater recharge use.

IEUA's "Recycled Water Three Year Business Plan", dated November 28, 2007, projected the total additional recycled water use (for direct use and groundwater recharge) within IEUA's service area by fiscal year 2010-11 at approximately 50,000 AFY. IEUA projected supplying recycled water within the City of Fontana in the amount of 1,656 AFY by fiscal year 2009-10 and an additional 5,000 AFY by fiscal year 2010-11, for a total recycled water supply of approximately 6,656 AFY. IEUA identified potential recycled water users including schools, parks, and commercial customers, for irrigation and other uses. IEUA's "Draft Three Year Business Plan Update Fiscal Year 2010-11", dated September 28, 2010, indicates the anticipated scheduling of the total projected additional recycled water use of 50,000 AFY has been shifted to fiscal year 2011-12 due to recent economic conditions. IEUA's draft 2010 Urban Water Management Plan indicates FWC will use 6,000 AFY of recycled water by 2015. FWC projects approximately 1,500 AFY of recycled water demands within its service area by 2015, with a gradual increase to approximately 6,000 AFY of recycled water demands within its service area by 2035 (See Table 9 and Table 10).

4.6.2 OPPORTUNITIES FOR ADDITIONAL SOURCES OF WATER SUPPLY

There may be additional sources of water supply FWC can explore. FWC's access to both the MWD and SBVMWD water transmission systems may provide flexibility for transporting new water supplies. Two potential new sources of supply are discussed below. The development of both sources is currently at a conceptual level. FWC can monitor the development of these sources and determine their feasibility as planning continues. In addition, an example of opportunities to share local water supply production facilities is discussed below.

City of San Bernardino High Groundwater / Central Feeder Pipeline

A proposed project to lower the groundwater table within the "Area of Historic High Groundwater (AHHG)" in the City of San Bernardino, located in the southeastern portion of the Bunker Hill Basin may increase reliability in imported SWP water deliveries to FWC. The AHHG is an area near the San Jacinto fault. The area, once a shallow marshland, has historically produced artesian wells. Diminished local rainfall, and an increase in agricultural activities and groundwater pumping, has previously lowered groundwater levels. However, reduced groundwater pumping in the area by the 1980s has resulted in water levels rising near, or above, ground surface. These high levels have caused damage to streets, basements, and concrete-lined flood control channels. In addition, the potential for liquefaction of saturated soil, which would cause major damage in the area during a significant earthquake, has increased.

SBVMWD is currently constructing a portion of the Central Feeder, a pipeline system up to 78-inches in diameter. The Central Feeder alignment is located in San Bernardino Avenue from Opal Avenue to Texas Street in Redlands (and may eventually be extended and connected to the Baseline Feeder Extension South Pipeline). The Central Feeder provides the ability to convey Bunker Hill Basin groundwater to

purveyors. In addition, the Central Feeder can provide redundancy to the Foothill Pipeline. Redundancy in the Foothill Pipeline may allow for increased water reliability in the Devil Canyon-Azusa Pipeline, which delivers imported SWP water to FWC.

4.6.3 SURPLUS INDIAN WATER RESOURCES

Indian Bands throughout the western United States have been trying to establish the institutional and legal ability to market surplus water supplies. Several reservations have water supplies in excess of current water demands. Indian Bands located near major water transmission facilities such as the Colorado River, the MWD system, or the SWP might be able to provide water supply to southern California, including to FWC. FWC should monitor developments in the marketing of Indian water supplies and determine its feasibility as a source of supply as the terms and conditions for availability are established.

4.6.4 LEWIS HOMES, SIERRA LAKES DEVELOPMENT PROPERTY (FONTANA, CALIFORNIA)

Lewis Homes is a land developer with planned community projects throughout California and Nevada. Lewis Homes developed the 700-acre, 2,100 unit Sierra Lakes property in northern Fontana. FWC has previously negotiated with Lewis Homes for purchasing of surplus water produced by Lewis Homes. The November 1994 report, “Sierra Lakes Final Environmental Impact Report – State Clearinghouse Number 92012024” states that the Sierra Lakes property, purchased by Lewis Homes, contains a production well within the Rialto Basin. Lewis Homes possesses overlying groundwater rights in the Rialto Basin, which refers to the right to reasonable and beneficial use of groundwater on land overlying the Rialto Basin. Lewis Homes uses the overlying rights to pump groundwater for irrigation use on a golf course located on the property. The Lewis Homes’ production well has a capacity of approximately 2,000 gpm, which is more than sufficient capacity required by the Sierra Lakes property. FWC,

which also has rights to pump water from the Rialto Basin, negotiated with Lewis Homes for the purchase or lease of the surplus Rialto Basin water rights or water extracted from the Lewis Homes' well for use in FWC's water distribution system. The lease or use of Lewis Homes' rights and well by FWC is yet to be completed. This demonstrates a potential example of local cooperation between FWC and other parties (such as land developers) for additional water rights and reliability of supplies.

Chapter 5

WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

5.1 WATER SUPPLY RELIABILITY

5.1.1 WATER MANAGEMENT TOOLS

Section 10620(f)

An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

This Plan describes water management tools and options used by FWC to maximize local resources and minimize the need to import water. These include Groundwater Basin Management Structure (Section 4.2), Recycled Water Opportunities (Section 4.5), Future Water Projects (Section 4.6), and DMMs (Chapter 6).

5.1.2 SUPPLY INCONSISTENCY

Section 10631(c)(2)

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

FWC has not experienced water supply deficiencies. Management of FWC's groundwater supplies from the Chino Basin, Rialto Basin, and Lytle Basin and surface water supplies from Lytle Creek is based on adjudications, which are described in Section 4.2. In addition, water quality issues associated with groundwater are addressed in Section 5.3.

5.2 WATER SHORTAGE CONTINGENCY PLANNING

5.2.1 CATASTROPHIC INTERRUPTION OF WATER SUPPLIES

Section 10632
(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

During an acute and severe water shortage caused by a disaster (including, but not limited to, a regional power outage, an earthquake, or other disaster), FWC production figures will be reported to FWC's General Manager hourly or as the General Manager directs, and to San Gabriel Valley Water Company's Vice President-Engineering and Operations and President daily. Reports will also be provided to the respective County Office of Emergency Service, if requested.

5.2.2 MANDATORY PROHIBITIONS

Section 10632
(d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

During the drought period, 1987 through 1992, FWC adopted a Voluntary Conservation Program ("Conversation Program") which was approved by the CPUC in February 1991. Implementation of the Conservation Program began in March 1991. Elements of the Conservation Program consisted of a voluntary reduction of water use of at least 10 percent by all customers and prohibition of wasteful water practices. A letter explaining the Conservation Program and asking for at least 10 percent voluntary reduction and a list of conservation measures was sent to all customers in FWC. Also, each customer's monthly water bill showed the customer's water conservation goal for the ensuing month and showed the consumption during the same billing period of the previous year. The Conservation Program was successful and resulted in a reduction of

approximately 15 percent in 1991. FWC still encourages its customers to practice water conservation measures and promotes the wise and efficient use of water.

CPUC RULE NO. 14.1

The CPUC has set forth specific guidelines regarding Mandatory Water Conservation and Rationing in its Rule No. 14.1 which FWC has adopted (see Appendix N). In the event water supplies are projected to be insufficient to meet customer demand, FWC may invoke Rule No. 14.1 after notifying the CPUC of FWC's plans to implement mandatory conservation and rationing. FWC's Contingency Plan would be implemented pursuant to that rule. Major elements of the CPUC Rule No. 14.1 include:

A. Conservation – Nonessential or Unauthorized Water Use

No customer shall use utility-supplied water for non-essential or unauthorized uses as defined below:

1. Use of water through any connection when the utility has notified the customer in writing to repair broken or defective plumbing, sprinklers, or watering or irrigation system, and the customer has failed to make such repairs within 5 days after receipt of such notice.
2. Use of water which results in flooding or run-off in gutters, waterways, patios, driveways, or streets.
3. Use of water for washing aircraft, cars, buses, boats, trailers or other vehicles without a positive shutoff nozzle on the outlet end of the hose, except for the washing of vehicles at commercial or fleet vehicle washing facilities operated at fixed locations where equipment using water is properly maintained to avoid wasteful use.
4. Use of water through a hose for washing buildings, structures, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surfaced areas in a manner which results in excessive runoff or waste.

5. Use of water for watering streets with trucks, except for initial washdown for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.
6. Use of water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.
7. Use of water for more than minimal landscaping in connection with any new construction.
8. Use of water for outside plants, lawn, landscape and turf areas more often than every other day, with even numbered addresses watering on even numbered days of the month and odd numbered addresses watering on the odd numbered days of the month, except that this provision shall not apply to commercial nurseries, golf courses and other water dependent industries.
9. Use of water for outside plants, lawn, landscape, and turf areas during certain hours if and when specified in Tariff Schedule No. 14.1 when the schedule is in effect.
10. Use of water for watering outside plants and turf areas using a hand held hose without a positive shut-off valve.
11. Use of water for decorative fountains or the filling or topping off of decorative lakes or ponds. Exceptions are made for those decorative fountains, lakes, or ponds which utilize recycled water.
12. Use of water for the filling or refilling of swimming pools.
13. Service of water by any restaurant except upon the request of a person.

B. Rationing of Water Usage

In the event the conservation measures required by Section A (above) are insufficient to control the water shortage, FWC will, upon CPUC approval, impose mandatory conservation and rationing. The water allocated for each customer, the time period during which rationing shall be in effect, and any additional conditions, are set forth in Tariff Schedule No. 14.1, which will be implemented for this purpose at the time

such rationing is approved by the CPUC. Before rationing is authorized by the CPUC, FWC will hold public meetings and take all other applicable steps required by Sections 350 through 359 of the California Water Code.

5.2.3 CONSUMPTION REDUCTION METHODS

Section 10632
(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

Individual customer allotments will be based on the same billing period for the prior year or such other base period as FWC deems appropriate. FWC will classify customers and calculate each customer's allotment according to the severity of the water shortage and the Contingency Plan Stage of Action which is to be implemented. Customers will be notified of their classification and allotments by mail with their water bills. New customers will be notified of their allotments at the time service commences.

In the event of an unexpected water shortage caused by a disaster, prior notice of allotment may not be possible. In that case, notice will be provided as soon as practical. Any customer may appeal FWC's classification on the basis of use or allotment.

5.2.4 PENALTIES OR CHARGES FOR EXCESSIVE USE

Section 10632
(f) Penalties or charges for excessive use, where applicable.

1. The water use restrictions of the conservation program in Section 5.2.2 become mandatory when the rationing program goes into effect. These

restrictions are applicable whether or not the customer exceeds the monthly water allocation.

2. Upon inception of the mandatory provisions, FWC may, after one verbal and two written warnings, install a flow-restricting device on the service line of any premises where FWC personnel observe water being used for any nonessential or unauthorized use.
3. A flow restrictor shall not restrict water delivery by greater than 50 percent of normal flow and shall provide the premises with a minimum of 600 cubic feet per month. The restrictor may be removed only by FWC, after a three-day period has elapsed, and upon payment of the appropriate removal charge as set forth in Tariff Schedule No. 14.1.
4. After the removal of a restricting device, if any nonessential or unauthorized use of water continues, FWC may install another flow-restricting device. This device will remain in place until rationing is no longer in effect and until the appropriate charge for removal has been paid to FWC.
5. Each customer's water allocation shall be shown on the water bill. Water allocations may be appealed in writing. If a customer uses water in excess of the allocated amount, FWC may charge the excess usage penalty in Tariff Schedule No. 14.1.

5.2.5 REVENUE AND EXPENDITURE IMPACTS

Section 10632
(g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

Balancing accounts record variances between water supply costs reflected in FWC's water rates and the water supply costs actually incurred by FWC. Any recorded variances are eligible for later rate recovery by the FWC.

At least 50 percent of FWC's fixed costs must be recovered through its water consumption charges. When sales are reduced below the authorized level on which the water rates were determined, FWC does not fully recover its fixed costs. However, the CPUC has developed more accurate sales forecasts and has authorized a Revenue Adjustment Mechanism which helps to alleviate this problem.

5.2.6 DRAFT WATER SHORTAGE CONTINGENCY RESOLUTION OR ORDINANCE

Section 10632
(h) A draft water shortage contingency resolution or ordinance.

In the event FWC finds it necessary to implement any part of FWC's Contingency Plan (discussed in Section 5.4.2), it will notify customers and hold public hearings, if required, concerning the water supply situation, in accordance with Chapter 3, Water Shortage Emergencies, Section 350 through 359, of the California Water Code, and pursuant to the CPUC requirements. FWC will also provide each customer with the applicable requirements of the Contingency Plan by means of billing inserts or special mailings. Notifications will take place prior to imposing any penalty associated with excessive water use under the Contingency Plan. In addition, FWC shall provide customers with periodic updates regarding FWC's and its customers' water conservation efforts. Updates may be by bill insert, special mailing, poster, flyer, newspaper, television or radio spot/advertisement, community bulletin board, or other appropriate method. FWC, through San Gabriel Valley Water Company, has adopted a water shortage contingency resolution (See Appendix R) which could be used to implement the Contingency Plan.

5.3 WATER QUALITY

Section 10634

The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

5.3.1 GROUNDWATER FROM CHINO BASIN

FWC pumps groundwater from 18 active wells in the Chino Basin, including Wells F2A, F4A, F7A, F7B, F17B, F17C, F21A, F22A, F23A, F24A, F26A, F30A, F31A, F35A, F37A, F44A, F44B, and F44C. FWC also has four wells that are inactive in the Chino Basin including, F3A, F18A, F25A and F39A. Nitrate has previously been detected above the MCL of 45 milligrams per liter (mg/L) as NO_3 in FWC Wells F4A, F17B and F17C. Wells F4A, F22A, F23A, F24A, F26A, F35A, and F37A, with a combined capacity of about 13,100 gpm, are currently not producing due to high perchlorate concentrations. Perchlorate has been detected at or above the Maximum Contaminant Level (MCL) of 6 ug/L in FWC Wells F4A, F17B, F17C, F18A, F25A, F26A, and F35A. In addition, perchlorate was also detected at several wells at levels below the MCL, which include Wells F21A, F22A, F23A, F24A, F31A, and F44A. Wells F17B and F17C currently have perchlorate treatment equipment, which removes perchlorate from these sources. FWC plans to install treatment or drill replacement wells for Wells F4A, F18A, F22A, F23A, F24A, F25A, F26A, F35A, F37A, and F39A.

5.3.2 GROUNDWATER FROM RIALTO BASIN

FWC pumps groundwater from four active wells in the Rialto Basin, including Wells F13A, F13B, F15A, and F49A. Tetrachloroethylene (PCE) has previously been detected above the MCL of five ug/L in FWC Well F49A. Water from Wells F10B and F49A is treated, by liquid phase granular activated carbon (GAC), and blended with water from Well F10C, prior to entry into the distribution system. CDPH requires more

frequent monitoring for treated water, both at the source and at the effluent of the treatment facility. Frequencies and constituents to be monitored are outlined in the amended domestic water supply permit for the treatment facility.

FWC has developed a preliminary site plan design for a 5,000 gpm wellhead treatment system to remove low but increasing levels of perchlorate contamination at Plant F49. The treatment plant at Plant F49 is designed to treat water produced at that site and from offsite EPA extraction wells. The proposed EPA extraction wells are at a higher elevation and will flow to FWC's Plant F49 with sufficient pressure for the treatment system. Additionally, FWC has offered to make the Plant F49 site available to the EPA with projected treatment costs significantly lower than other proposed alternatives. The total estimated capital cost for the treatment facility and off-site pipelines is approximately $5.6 million.

5.3.3 GROUNDWATER FROM NO MAN'S LAND BASIN

FWC pumps groundwater from two active wells in the No Man's Land Basin, including Wells F10B and F10C. PCE has previously been detected above the MCL of five ug/L in FWC Wells F10B and F10C. Water from Wells F10B and F49A is treated, by liquid phase GAC, and blended with water from Well F10C, prior to entry into the distribution system. CDPH requires more frequent monitoring for treated water, both at the source and at the effluent of the treatment facility. Frequencies and constituents to be monitored are outlined in the amended domestic water supply permit for the treatment facility.

5.3.4 GROUNDWATER FROM LYTLE BASIN

FWC pumps groundwater from nine active wells in the Lytle Basin, including Wells F27A, F28A, F29A, F32A, F33A, F34A, F36A, F40A, and F42A. Groundwater from these wells meets all CDPH standards for drinking water.

5.3.5 SANDHILL WATER TREATMENT PLANT

FWC owns and operates a surface water treatment plant (Sandhill Plant), which has a treatment capacity of 29 MGD. The Sandhill Plant treats water from Lytle Creek and imported water supplies from IEUA and SBVMWD. FWC completed upgrades to its Sandhill Plant to allow treatment of water with high turbidity in early 2009. Historically, the Sandhill Plant was not designed to treat water with high turbidity which typically occurred during periods of high surface flows in Lytle Creek. The Sandhill Plant upgrades consist of a rapid mix basin, conventional flocculation basins with enhanced coagulation, sedimentation basins with inclined plate settlers, sludge holding and dewatering ponds, chemical feed facilities, and wash water recovery facilities. In addition, there are dual media gravity filtration facilities to expand the performance capability of the Sandhill Plant under a range of operating conditions. The upgrades increased Sandhill Plant's capacity from 17 MGD to 29 MGD. Treated water from the Sandhill Plant meets all CDPH standards for drinking water.

5.4 DROUGHT PLANNING

5.4.1 RELIABILITY OF SUPPLY AND VULNERABILITY TO SEASONAL OR CLIMATIC SHORTAGE

Section 10631(c)(1)

Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(A) An average water year.
(B) A single dry water year.
(C) Multiple dry water years.

Information regarding the reliability of FWC's groundwater supplies from the Chino Basin, Rialto Basin, No Man's Land Basin, and Rialto Basin is based on the 63-

year rainfall data for the FWC area (Table 2), and past data on the availability of water supply to meet demands during seasonal or climatic shortage. Table 2 summarizes the rainfall in the Fontana area from 1948 through 2010. According to historical rainfall data for the Fontana area, the annual average rainfall is 9.6 inches. Therefore, 2003 represents an average water year for FWC in which the total amount of rainfall was about 9.7 inches. A single dry year for FWC was represented in 2006 in which the total amount of rainfall was about 6.0 inches. A multiple dry year sequence for FWC is represented from 2007 to 2009, where the total amount of rainfall was about 4.1 inches, 7.7 inches, and 3.0 inches, respectively. Table 11 shows that during an average year, single dry year and multiple dry years, water supply production for FWC remained stable. A dry year or multiple dry years did not compromise FWC's ability to provide a reliable supply of water to its customers.

Based on current management practices and reliability discussed in Section 4.2.3, the minimum water supplies available at the end of an average water year, a single dry year, and multiple dry years would be at least equal if not greater than FWC's water demands.

5.4.2 STAGES OF ACTION IN RESPONSE TO WATER SUPPLY SHORTAGES

Section 10632
(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

San Gabriel Valley Water Company, of which FWC is a division, has prepared and adopted a Water Shortage Contingency Plan ("Contingency Plan") pursuant to the requirements of Assembly Bill No. 11X which became effective as of October 13, 1991. Information from the Contingency Plan has been incorporated into the 2010 Urban Water Management Plan.

FWC is a public utility water company regulated by the CPUC. In the event a water shortage is declared, FWC would request CPUC authorization to implement the Mandatory Water Conservation and Rationing Plan as set forth in CPUC Rule No. 14.1 (see Appendix N).

In the event of a declared water shortage, FWC would to the extent necessary and appropriate, coordinate the implementation of this Contingency Plan with the cities within its service area, MWD, County of San Bernardino, CPUC, Department of Water Resources, IEUA, SBVMWD, and Chino Basin Watermaster.

FWC has a legal responsibility to provide water utility services, including water for residential, commercial, industrial, public authority, and for public fire hydrants and private fire services. In order to minimize the adverse impacts of water shortages, FWC will manage water supplies prudently. FWC's Contingency Plan is designed to provide a minimum of 50 percent of normal supply during a severe or extended water shortage. Contingency Plan trigger levels have been established to ensure that this policy is implemented.

The following provides a description of the stages of action which may be triggered by a shortage in one or more of FWC's water supply sources, depending on the severity of the shortage and its anticipated duration:

Stage 1 Shortage

A Stage 1 shortage occurs when FWC experiences water supply shortage conditions up to 15 percent. During this stage, FWC will implement a voluntary reduction goal of 15 percent.

Stage 2 Shortage

A Stage 2 shortage occurs when FWC experiences water supply shortage conditions between 15 and 25 percent. During this stage, FWC will implement a voluntary reduction goal of 25 percent.

Stage 3 Shortage

A Stage 3 shortage occurs when FWC experiences water supply shortage conditions between 25 and 35 percent. During this stage, FWC will implement a mandatory reduction goal of 35 percent.

Stage 4 Shortage

A Stage 4 shortage occurs when FWC experiences water supply shortage conditions between 35 and 50 percent. During this stage, FWC will implement a mandatory reduction goal of at least 50 percent.

5.4.3 THREE YEAR MINIMUM WATER SUPPLY

Section 10632
(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

Over the past 20 years, the driest three-year sequence (multiple dry years) in the FWC area occurred from 2007 to 2009, as shown in Table 2 and Table 11. Although additional water supplies were available to FWC during the driest three-year sequence, Table 11 shows the minimum supplies needed by FWC to meet actual demands during these years. The ratio between the normal water year in 2003 and multiple dry years

was estimated for FWC's supply, as shown on Table 11. This ratio from Table 11 was used to estimate the minimum water supply available needed to meet water demands during each of the next three water years (from 2011 to 2013) based on the driest three-year historical sequence for FWC's water supply (see Table 12).

5.4.4 WATER USE REDUCTION MEASURING MECHANISM

Section 10632
(i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

Under normal water supply conditions, production figures are recorded daily. Totals are reported weekly to FWC's General Manager. Totals are reported monthly to the Vice President-Engineering and Operations and incorporated into FWC's water supply report.

During a Stage 1 or 2 water shortage, daily production figures are reported to the General Manager. The General Manager compares the weekly production to the target weekly production to verify that the reduction goal is being met. Weekly reports are forwarded to the Vice President-Engineering and Operations. Monthly reports are sent to the General Superintendent. If reduction goals are not met, FWC's General Manager will make recommendations as to what further action should be taken.

During a Stage 3 or 4 water shortage, the procedure listed above will be followed, with the addition of a daily production report to the Vice President-Engineering and Operations.

As discussed in Section 5.2.1, during an acute and severe water shortage caused by a disaster, production figures will be reported to the General Manager hourly or as the General Manager directs, and to the Vice President-Engineering and

Operations and President daily. Reports will also be provided to the respective County Office of Emergency Service, if requested.

5.4.5 ASSESSMENT OF THE RELIABILITY OF WATER SERVICE

Section 10635

(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry year water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

As previously discussed in Section 3.2, FWC applied SBX7-7 to estimate FWC's 2015 Interim Urban Water Use Target of 197 GPCD and FWC's 2020 Urban Water Use Target of 175 GPCD. These Urban Water Use Targets were then applied to estimate FWC's projected normal year demands in 2015, 2020, 2025, 2030, and 2035, as shown on Table 8. FWC will continue to use groundwater, local surface water, imported surface water, and recycled water as its future water supplies over the next 20 years. The following sections discuss FWC's water service reliability assessment, which compares FWC's supply and demand over the next 20 years during normal, dry and multiple dry years.

5.4.5.1 NORMAL WATER YEAR

As previously discussed, FWC's projected normal water year demand over the next 25 years in five-year increments was based on FWC's 2015 and 2020 Urban Water Use Targets of 197 GPCD and 175 GPCD, respectively. FWC's projected supply was based on the minimum supplies needed by FWC to meet projected normal year

demand, as shown on Table 8. The comparison of FWC's projected supply and demand during a normal water year is shown on Table 13. As shown on Table 13, FWC's supply can meet demands during a normal water year for the next 25 years.

5.4.5.2 SINGLE-DRY YEAR

As shown on Table 2, FWC experienced a single-dry year during 2006 and a normal water year during 2003. The ratio between the normal water year and single-dry year was estimated for FWC's demand, as shown on Table 11. This ratio and the projected demands during a normal water year from Table 13 were used to estimate FWC's projected demands during a single-dry year over the next 25 years in five-year increments. FWC's projected dry year water supplies over the next 25 years were based on the minimum supplies needed by FWC to meet projected single-dry year demands. The comparison of FWC's projected supply and demand during a single-dry year is shown on Table 14. As shown on Table 14, FWC's supply can meet demands during a single-dry year for the next 25 years.

5.4.5.3 MULTIPLE DRY YEARS

As shown on Table 11, FWC experienced multiple dry years during 2007, 2008 and 2009. The ratio between the normal water year in 2003 and multiple dry years were estimated for FWC's supply and demand, as shown on Table 15. This ratio and the projected demand during a normal water year from Table 13 were used to estimate FWC's projected demands during multiple dry years over the next 25 years in five-year increments. FWC's projected multiple dry year water supplies over the next 25 years were based on the minimum supplies needed by FWC to meet projected multiple dry year demands. The comparison of FWC's projected supply and demand during multiple dry years is shown on Table 15. As shown on Table 15, FWC's supply can meet demands during multiple dry years for the next 25 years.

Chapter 6

DEMAND MANAGEMENT MEASURES

San Gabriel Valley Water Company, of which FWC is a division, is a member of the California Urban Water Conservation Council (CUWCC). As a member of the CUWCC, San Gabriel Valley Water Company signed a Memorandum of Understanding (MOU) pledging to implement "Best Management Measures", which are cost-effective conservation programs. CUWCC amended its MOU in December 2008. FWC plans on submitting its biennial Best Management Practices to the CUWCC in June 2011. The 14 Best Management Practices (BMPs) have now been organized into five categories. Two categories are Utility Operations and Education, which are referred to as "Foundational BMPs." The other three categories are referred to as "Programmatic BMPs" and are Residential, Commercial/Industrial/Institutional, and Landscape.

San Gabriel is an investor owned public water utility regulated by the CPUC. Under its regulatory authority, the CPUC has established a conservation goal for San Gabriel and all other Class A Water Companies to reduce annual consumption by one (1) percent to two (2) percent. The CPUC's goal, as outlined in its Water Action Plan adopted in 2005 and subsequently updated in October 2010 requires public water utilities to strengthen their water conservation programs to a level comparable to energy utilities. The CPUC's conservation goal compliments the statewide mandate that requires water utilities to reduce per capita consumption by 20 percent by 2020. In response to these mandates and with CPUC approval, San Gabriel has implemented a number of conservation programs including conservation pricing (tiered rates), cost effective BMP programs including programs for public information and education and annual reporting requirements.

In addition, FWC is a sub-agency to IEUA which is a member of the CUWCC. As a member of CUWCC, IEUA has made it a high priority to implement BMPs in IEUA's

service area. IEUA has completed the IEUA Water Use Efficiency Business Plan (Business Plan), dated September 2010, to assist IEUA and its member agencies to plan and implement future water conservation activities and programs. Conservation measures from IEUA's Business Plan are included within this Plan. IEUA takes the position of preparing a regional approach establishing a baseline and setting targets based on regional demands and in support of its eight retail member agencies that must comply. All member agencies within IEUA's service area have agreed to the formation of a regional alliance, and will continue to cooperatively participate in developing programs and meeting water conservation goals.

For purposes in this Plan, the BMPs are equivalent to Demand Management Measures (DMM). A description of FWC's conservation measures and DMMs follow in addition to the new BMP category referred under the CUWCC MOU.

Water conservation measures are a vital part of FWC's overall plan to achieve, reliable, high quality, and cost-effective water supply for its customers. FWC has implemented a number of water conservation measures that include, but are not limited to the following: public information outreach, water conservation kits, residential water use surveys, high efficiency toilet distribution, Water2Save, device incentive rebate programs, and water conservation partnerships. Additional information regarding FWC's conservation activities in provided in Appendix O.

6.1 DEMAND MANAGEMENT MEASURES BEING IMPLEMENTED

Section 10631

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

(A) Water survey programs for single-family residential and multifamily residential customers.

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

(D) Metering with commodity rates for all new connections and retrofit of existing connections.
(E) Large landscape conservation programs and incentives.
(F) High-efficiency washing machine rebate programs.
(G) Public information programs.
(H) School education programs.
(I) Conservation programs for commercial, industrial, and institutional accounts.
(J) Wholesale agency programs.
(K) Conservation pricing.
(L) Water conservation coordinator.
(M) Water waste prohibition.
(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

6.1.1 WATER SURVEY PROGRAMS FOR SINGLE-FAMILY RESIDENTIAL AND MULTIFAMILY RESIDENTIAL CUSTOMERS [10631(F)(1)(**A**)]

The CUWCC refers to this BMP as "Programmatic: Residential." FWC currently implements a water survey program for single-family residential and multi-family residential customers. During fiscal year 2008-09, FWC offered residential surveys to approximately 1,900 residents within its service area. A total of 30 requests for surveys were received and 21 surveys were completed. FWC's Conservation Specialist called all the survey respondents to schedule an appointment. Among those contacted, about half agreed to have the survey conducted. In addition to mailed request surveys, FWC also offers to conduct residential surveys for high water use customers. The residential survey is designed to identify potential leaks (indoor and outdoor), recommend water conserving devices assess irrigation system efficiency, and determine the proper landscape watering schedule. To date, 100 surveys were conducted in FWC's service area. Based on current residential customers in FWC, approximately 631 surveys would need to be completed each year in order to reach CUWCC coverage requirements. FWC will continue to offer surveys to customers by way of bill inserts, customer

contacts, and posting on its website. Information on water conservation savings, cost-benefit analysis, and water costs is being continuously collected and will be reported once every two years to the CUWCC.

IEUA's Business Plan includes information on IEUA's proposed Water Budget Program. This program provides customers with information on their monthly or bi-monthly usage vs. budget allocation. Each customer would be given a water budget allocation based on their lot size and the local weather. Customers would be sent a report via US mail or email with detailed information on their site and their monthly budget vs. their actual use. IEUA indicated the program can be applied towards approximately 5,177 dedicated irrigation meter customers within IEUA's service area which is the equivalent of approximately 6,134 AFY in water conservation. IEUA indicated the average water savings in this program is approximately 1.18 AF per dedicated meter. IEUA's estimated annual cost to conduct this program is approximately $120,000. Additional information is provided in Appendix Q.

6.1.2 RESIDENTIAL PLUMBING RETROFIT [10631(F)(1)(**B**)]

The CUWCC refers to this BMP as “Programmatic: Residential – Residential Assistance Program.” Currently, FWC performs residential surveys for customers. When surveys are performed, customers are provided with conservation kits which include low-flow showerheads, faucet aerators and conservation materials.

FWC provides a Conservation Kit (Kit), containing a 1.5 GPM massage showerhead, 1.5 GPM dual spray kitchen aerator, and 1.0 GPM aerator. The Kit is distributed at public outreach events such as City of Fontana’s Teen Fest Talent Show and FWC’s WaterWise Smart Gardening Workshops. Customers can also pick up a Kit at FWC’s office by requesting it at the commercial office window. As part of FWC’s WaterWise Smart Gardening Workshop events, Smart Timers were purchased to be distributed to customers after the events. FWC hosted/sponsored four (4) gardening

and landscaping workshops on October 31, 2009, March 27, 2010, April 24, 2010, and May 8, 2010. Each of these classes accommodates a maximum of 35 people and seating is limited and offered on a first-come, first-serve basis. The customers who attended the class were eligible to receive a Smart Timer. Information on water conservation savings, cost-benefit analysis, and water costs is provided in Appendix P.

6.1.3 SYSTEM WATER AUDITS, LEAK DETECTION, AND REPAIR [10631(F)(1)(**C**)]

The CUWCC refers to this BMP as "Foundational: Operations Practices - Water Loss Control." FWC's monitoring and repair of system leaks is an integral part of maintenance activities. FWC receives reports of leaks in its distribution system from customers, field crews, and other agencies. FWC promptly repairs distribution mains, services, and other appurtenances. Based on FWC's "Water System Master Plan Update", prepared August 2008, FWC's overall losses from 2003 to 2007 have averaged approximately 4.8 percent of total production.

6.1.4 METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS [10631(F)(1)(**D**)]

The CUWCC refers to this BMP as "Foundational: Operations Practices - Metering." FWC's water distribution system is fully metered for all customer sectors, including separate meters for residential, commercial, small industrial, large industrial, small public authority, and large public authority. All of FWC's accounts are metered and billed by volume of use (with the exception of fire services which have a flat fee charged for availability).

IEUA's Business Plan includes information on IEUA's proposed Multi-family Submetering Program. This program encourages multi-family property owners to install

submeters for each dwelling unit to replace the master meter. The program would offer a $675 incentive for each meter. IEUA indicated the program can be applied towards approximately 53,054 multi-family dwelling units within IEUA's service area. IEUA indicated the average water savings per dwelling unit in this program is approximately 0.0245 AFY per dwelling unit. IEUA's estimated annual cost to conduct this program is approximately $82,650. Additional information is provided in Appendix Q.

6.1.5 LARGE LANDSCAPE CONSERVATION PROGRAMS AND INCENTIVES [10631(F)(1)(**E**)]

The CUWCC refers to this BMP as “Programmatic: Landscape.” FWC has contracted Water2Save to implement a pilot program to reduce irrigation for large landscape within FWC's service area. This program provides installation of a wireless irrigation management system to assist customers with monitoring their irrigation systems at a cost of $108,000. Water2Save has been contracted to work with CII customers (Summit Heights Gateway, Kaiser Permanente Fontana, and City of Fontana) and the total water savings attributed to the Water2Save program is about 56.2 acre-feet per year. To date, the program has surpassed Water2Save’s projected water savings for each site. Information on water conservation savings, cost-benefit analysis, and water costs is provided in Appendix P.

Customers that attend gardening workshops are invited to participate in FWC’s “Smart” Timer Pilot program. As part of FWC’s gardening workshop events, Weather Based Irrigation Controllers are purchased and distributed to customers at no cost. FWC is planning to host more gardening and landscaping workshops at its facility in the future. Each class can accommodate 35 people and is open to all FWC customers.

IEUA has completed a water conservation work plan that includes each of its member agencies. FWC has joined IEUA’s program which is designed to encourage residential customers to implement water saving practices and install water efficient devices. The program will offer landscape audits to customers, free Weather Based

Irrigation Controllers to replace their existing irrigation controller, and new high efficiency sprinkler nozzles.

The City of Fontana approached FWC to work together in a water conservation partnership program. The City of Fontana presented 79 sites where irrigation controllers needed to be replaced. FWC provided the City of Fontana with 79 Weather Based Irrigation Controllers and 105 expansion modules and the City of Fontana installed the Weather Based Irrigation Controllers at each site. Additionally, the City of Fontana agreed to 25 Landscape Audits that were conducted and funded by IEUA to help create evapotranspiration based water budgets for their sites.

In addition, landscape ordinances along with irrigation requirements are established by individual city building codes. Upon request, a Customer Service employee will visit the customer's premises and evaluate the landscape irrigation. Irrigation systems are evaluated for water loss due to runoff, over watering, and the time of day watering takes place. These audits may reduce water loss and result in lower water bills.

IEUA's Business Plan includes information on IEUA's Water Wise Residential Landscape Rebate Program. This program encourages residential customers to remove high water consuming turf and replace with alternative solutions such as low water using indigenous plants and surfaces which allows for better ground water infiltration and reduces runoff. IEUA indicated the program has saved approximately 25.5 AFY to date and can potentially save an additional 40,865 AFY. IEUA's estimated cost to conduct this program is approximately $240,620. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's Commercial and Multi-family Save A Buck Program sponsored by MWD. This program provides different measures for IEUA customers to promote water conservation including Weather Based

Irrigation Controllers (WBICs), Synthetic Turf, and High Efficiency Nozzles (HENs). IEUA indicated the approximate current water savings to date within IEUA's service area for these measures are 224 AFY for WBICs, 33 AFY for Synthetic Turf, and 2 AFY for HENs. IEUA indicated the approximate potential water savings within IEUA's service area are 2,718 AFY for WBICs, no applicable water savings for Synthetic Turf and 2,653 HENs. IEUA anticipates its estimated costs are $0 for WBICs, $7,671 for Synthetic Turf, and $0 for HENs. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's Water Smart Program. This program offers residential customer landscape incentives including Rotating Nozzles, WBICs, Turf Removal, and Synthetic Turf. IEUA indicated the approximate current water savings to date within IEUA's service area for these devices are 33 AFY for Rotating Nozzles, 151 AFY for WBICs, water savings on-hold for Turf Removal and 155 AFY for Synthetic Turf. IEUA indicated the approximate potential water savings for these devices are 4,066 AFY for Rotating Nozzles, 4,167 AFY for WBICs, 19,243 AFY for Turf Removal, and no applicable water savings for Synthetic Turf. IEUA anticipates the estimated IEUA's costs are $0 for Rotating Nozzles, $161,645 for WBICs, $49,246 for Synthetic Turf, and no applicable costs for Turf Removal. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed SoCalWater$mart Incentive Program. This program offers residential customer landscaping incentives including WBICs and HENs. IEUA indicated the approximate water savings per device are 0.04145 AFY for WBICs and 0.004 AFY for HENs. IEUA's estimated annual cost to conduct this program is approximately $226,500. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed Public Sector Incentive Program. This program offers incentives to purchase and install landscape water saving devices such as WBICs and HENs. This program would offer incentive

amounts of $64 per WBIC and $8 per HEN. IEUA indicated the program can be applied towards approximately 1,407 institutions, 206 schools, and 27 colleges within IEUA's service area. IEUA indicated the approximate water savings per device in this program is 0.0129 AFY per WBIC and 0.004 AFY per HEN. IEUA's estimated annual cost to conduct this program is approximately $26,750. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed Save A Buck Program. This program offers commercial customers incentives for indoor and outdoor devices including WBICs and HENs. IEUA indicated the approximate water savings per device are 00.0129 AFY for WBICs and 0.004 HENs. IEUA's estimated annual cost to conduct this program is approximately $25,200. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed GeoSmart Landscape Finance Program. This program would provide financing for turf removal, WBICs, and HENs. IEUA indicated the program can be applied towards approximately 82,000 single family homes with turf and irrigation systems within IEUA's service area. IEUA indicated the approximate water savings are 0.0732 AFY per square feet for turf removal, 0.0325 AFY per acre for WBICs, and 0.004 AFY per HEN. IEUA's estimated annual cost to conduct this program is approximately $77,200. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed Smart Controller Direct Installation Program. This program encourages reduction in water consumption in landscape irrigation through direct installation of WBICs and HENs for irrigated residential landscapes greater than one acre. IEUA indicated the program can be applied towards approximately 1,399 residential units and 5,177 dedicated meter accounts within IEUA's service area. IEUA indicated the approximate water savings are 0.0325 AF per acre for WBICs and 0.004 AF per HEN. IEUA's estimated annual cost to

conduct this program is approximately $226,500. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed Landscape Water Use Evaluation Program. This program offers free landscape water use evaluations to commercial and large single family customers with irrigated landscape. IEUA indicated the program can be applied towards approximately 33,000 single family units, 9,091 commercial units, 1,407 institutional units, and 5,177 dedicated irrigation meters within IEUA's service area. IEUA's estimated annual cost to conduct this program is approximately $80,000. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed HEN Distribution Program. This program offers single family, multi-family, and commercial customers within IEUA's service area HENs to replace old pop up sprinkler heads. IEUA indicated the program can be applied towards approximately 110,000 single family homes within IEUA's service area. IEUA indicated the approximate water savings per device in this program is 0.004 AFY per nozzle. IEUA's estimated cost to conduct this program is approximately $4 per nozzle. Additional information is provided in Appendix Q.

6.1.6 HIGH-EFFICIENCY WASHING MACHINE REBATE PROGRAMS [10631(F)(1)(**F**)]

The CUWCC refers to this BMP as “Programmatic: Residential.” FWC achieves coverage for this BMP through work with IEUA and MWD through their previous rebate programs. The number of High-Efficiency Clothes Washer (HECW) rebates issued to FWC customers for fiscal year 2008-09 equaled 222. The total water savings obtained through the use of these HECWs according to MWD is 6.9 AFY or 97 AF over the lifetime of the products. To date, 561 rebates have been issued for HECWs. FWC will continue to work with IEUA and MWD to promote HECW rebate programs when these are available.

IEUA's Business Plan includes information on IEUA's Water Smart Program. This program offers residential customer landscape incentives for HECWs. IEUA indicated the approximate current water savings to date within IEUA's service area is 776 AFY for HECWs. IEUA indicated the approximate potential water savings is 2,116 AFY for HECWs. IEUA anticipates its estimated costs are $0 for HECWs. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed SoCalWater$mart Incentive Program. This program offers residential customer incentives including HECWs. IEUA indicated the program can be applied towards approximately 135,610 single family clothes washer unit and 12,849 multi-family clothes washer units within IEUA's service area. IEUA indicated the approximate water savings is 0.0157 AFY for HECWs. IEUA's estimated annual cost to conduct this program is approximately $226,500. Additional information is provided in Appendix Q.

6.1.7 PUBLIC INFORMATION PROGRAMS [10631(F)(1)(**G**)]

The CUWCC refers to this BMP as “Foundational: Education Programs – Public Information Programs.” As part of FWC's conservation plan, FWC participates in local public events distributing conservation materials and providing information to customers to encourage the efficient use of water. These materials include conservation recommendations and ideas for what FWC's customers can do in their homes and businesses to conserve water and types of appliances, fixtures, and devices that can be installed to help reduce water use, including High Efficiency Toilets (HETs), HECWs, and more efficient irrigation equipment. FWC participated in and sponsored public outreach events within its service area in fiscal year 2009-10 discussed below.

As part of WaterWise Smart Gardening Workshops, FWC hosted and sponsored four gardening and landscaping workshops at its facility (October 31, 2009, March 27, 2010, April 24, 2010, and May 8, 2010). FWC has contracted with WaterWise Consulting, Inc. to present information to customers regarding landscaping and efficient water use necessary to meet California's current water constraints. Participants at the workshop received a gardening magazine for drought tolerant plants, a soft grip 8 dial positive shutoff hose nozzle, brochures on water saving tips for outdoor use, information on native California plants, and a weather based irrigation controller. The workshops are presented in a simple and user-friendly manner that foregoes technical jargon to provide effective water saving information to FWC's customers. A total of 115 customers participated.

FWC sponsored the City of Fontana Teen Fest Talent Show dated April 10, 2010. A banner was hung on the stage reminding residents to conserve water and the Master of Ceremonies reminded residents throughout the day to conserve water. Approximately 350 residents attended this year.

In addition, FWC achieves coverage for this BMP through the efforts of both IEUA and MWD as well as FWC's own public outreach efforts. FWC has worked hand-in-hand with the cities of Fontana, Rialto and the County of San Bernardino to co-sponsor and participate in local community events including but not limited to:

- Fontana Winter Fest
- Fontana Teen Fest Talent Show
- Rialto Earth Day
- San Bernardino County Health Fair
- City of Fontana, Fontana Days Run in 2011
- City of Fontana Cruise Nights.
- Chino Basin Water Conservation District Water Fair.
- City of Fontana Be Green
- Gardening Workshop and "Smart" Irrigation Pilot program.

- City of Fontana Teen Fest Teen Health.
- City of Fontana Lands Day.

Miscellaneous promotional items include conservation newspaper advertising, conservation program bill inserts, water conservation reminder bill inserts, conservation literature and small promotional items (pens, pencils, rulers, hose nozzle, etc.) with printed water conservation reminders.

FWC's Representatives are made available to speak to local schools, civic organizations, and groups of concerned citizens wanting information on topics of water conservation and water quality. Water conservation and water quality literature, videotapes on wise water use and water savings tips, posters, and displays are utilized in various presentations. FWC will continue to maintain coverage through its conservation programs and the programs in place through the IEUA and MWD. Information on water conservation savings, cost-benefit analysis, and water costs is provided in Appendix P.

In addition to conservation programs described above, FWC works in cooperation with other local water districts and wholesalers to implement conservation programs. IEUA has been an active proponent of water conservation for many years and currently has numerous programs available for all its member agencies and their customers, including FWC customers.

In addition, the Chino Basin Water Conservation District (CBWCD) offers landscape surveys to FWC customers with the assistance of State grant funding. FWC is working cooperatively with CBWCD to begin advertising of this service to its customers and provide necessary information for the survey to be completed.

IEUA's Business Plan includes the following information on IEUA's outreach programs to promote water conservation:

- Landscape Evaluation Program

The Landscape Water Evaluation Program provides landscape evaluations, recommendations and education to commercial, institutional and industrial customers within the IEUA service area on water efficient irrigation practices.

- Inland Empire Landscape Alliance

The Landscape Alliance is currently developing manuals to support the implementation of adopted landscape ordinances.

- Regional Water Use Efficiency Outreach

Regional Water Use Efficiency Outreach is a regional public outreach campaign which encourages the public to make lifestyle changes that save water.

- No Water Waste Ordinance

The No Water Waste Ordinance prohibits certain water uses and irrigation practices and provides specific enforcement and penalty mechanisms.

6.1.8 SCHOOL EDUCATION PROGRAMS [10631(F)(1)(**H**)]

The CUWCC refers to this BMP as “Foundational: Education Programs – School Education Programs.” FWC will achieve BMP coverage for school education programs through joint efforts with IEUA. IEUA offers a multitude of programs for schools within FWC’s service area including a contract with National Theatre for Children and the

Garden in Every School Program. Presentations were delivered in FWC's service area for the 2009-10 school year receiving much praise from the teachers and students alike. This educational outreach program reached over 4,000 students and teachers with a water conservation message and materials to be shared with family members about ways to use water efficiently. FWC plans to continue to work cooperatively with the IEUA as well as local cities and community groups to implement school education programs wherever possible. Information on water conservation savings, cost-benefit analysis, and water costs is being continuously collected and will be reported once every two years to the CUWCC.

IEUA's Business Plan includes the following information on IEUA's school education programs to promote water conservation:

- Garden-In-Every School

Garden-In-Every School educates elementary students, their families, school staff and community members about wise water usage through thematic school gardens that feature drought tolerant plants and efficient irrigation methods that are aligned with the state curriculum standards.

- National Theatre for Children

The National Theatre for Children is a live interactive theatre performance that promotes water and environmental awareness, and introduces simple water conservation practices.

6.1.9 CONSERVATION PROGRAMS FOR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL ACCOUNTS [10631(F)(1)(**I**)]

The CUWCC refers to this BMP as "Programmatic: Commercial, Industrial, and Institutional." FWC achieves this BMP through distribution of water brooms, sponsoring

Fontana Unified School District indoor and outdoor retrofit program, FWC's "Save-A-Buck Program", and audit program. FWC's Commercial, Industrial, and Institutional (CII) programs are described below.

FWC has distributed pressurized Water Brooms to public agencies within FWC's service area. According to statistics provided by MWD, each Water Broom will save approximately 0.1534 AF of water per year and 9 AF of water savings over the lifetime of the product. FWC has offered Water Brooms to the following cities and school districts:

- City of Fontana
- City of Rialto
- Fontana Unified School District
- Rialto Unified School District
- Colton Unified School District
- Etiwanda School District

FWC sponsored an aggressive retrofit program for Fontana Unified School District's (FUSD) irrigation system and indoor plumbing fixtures at five school sites. In cooperation with FWC efforts to assist FUSD, IEUA helped facilitate and administer the retrofit program. The program replaced all indoor fixtures and outdoor nozzles and controllers at five sites. A total of 301 units of Zurn 5615 Ultra Low Flush Toilets, 85 units of Zurn 5798 urinals, 13 units of Rainbird GT Eagle, and over 1,500 units of Toro Precision Nozzles were installed resulting in over 11 million gallons saved in the first year. Phase Two of the program is in the works and will target additional schools and will result in more water savings. Information on water conservation savings, cost-benefit analysis, and water costs is provided in Appendix P.

FWC's "Save-A-Buck Program" is a conservation program which includes a rebate program for commercial, industrial, and institutional (CII) customers. Devices that are part of the rebate program include cooling tower conductivity controller,

connectionless food steamer, and steam sterilizer retrofits. FWC in association with IEUA has provided customers with many rebate incentives for water efficient fixtures. To date 241 rebates for High Efficient Toilets, 120 rebates for Large landscape rotating nozzles, and 145 rebates for waterless urinals.

FWC implements an audit program to CII customers to review and identify inefficient indoor water fixtures and outdoor irrigation systems that need repair. Outdoor irrigation leaks and inefficient water fixtures contribute to wasting of large amounts of water. The audit report will be provided to CII customers that participate in the program and will identify cost effective measures necessary to save water.

FWC communicates regularly with commercial, industrial and institutional customers within its service area to provide assistance with efficient water use practices.

IEUA's Business Plan includes information on IEUA's Commercial and Multi-family Save A Buck Program sponsored by MWD. This program provides different measures for IEUA customers to promote water conservation including Ultra Low Flow Toilets (ULFT) Flushometers, ULFT Tank, HETs, Waterless Urinals, Conductivity Controllers, HECWs, Water Brooms, WBICs, Synthetic Turf, and HENs. IEUA indicated the approximate current water savings to date within IEUA's service area for these measures are 2 AFY for ULFT Flushometers, 742 AFY for ULFT Tank, 1,812 AFY for HETs, 1,567 AFY for Waterless Urinals, 51 AFY for Conductivity Controllers, 163 AFY for HECWs, 168 AFY for Water Brooms, 224 AFY for WBICs, 33 AFY for Synthetic Turf, and 2 HENs. IEUA indicated the approximate potential water savings within IEUA's service area for these measures are 977 AFY for HETs, 305 to 457 AFY for Waterless Urinals, 313 AFY for Conductivity Controllers, 101 AFY for HECWs, 138 AFY for Water Brooms, 2,718 AFY for WBICs, and 2,653 HENs. There are no available potential water savings for ULFT Flushometers and ULFT Tank. IEUA anticipates its estimated costs for these measures are $45 for ULFT Flushometers, $5,075 for ULFT Tank,

$345,045 for HETs, $0 for Waterless Urinals, $1,700 for Conductivity Controllers, $20,093 for HEWs, $21,513 for Water Brooms, $0 for WBICs, $7,671 for Synthetic Turf, and $0 for HENs. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed Comprehensive Restaurant Program. This program offers installation of HETs and faucet aerators in the restaurant market. The program would also include marketing incentives for urinals and food steamers offered through MWD's Save A Buck Program. IEUA indicated the program can be applied towards 1,398 restaurants within IEUA's service area. IEUA indicated the approximate water savings per HET in this program is 0.0425 AFY. IEUA's estimated annual cost to conduct this program is approximately $30,000. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's Industrial Process and Cooling Tower Audits and Incentive Program. This program offers surveys and incentives to qualifying commercial and industrial customers on industrial process and cooling towers. IEUA indicated the program can be applied towards approximately 892 manufacturing sites and 270 cooling towers within IEUA's service area. IEUA indicated the water savings are approximately 0.644 AFY for cooling tower conductivity controller devices, 1.944 AFY for cooling tower pH controller devices, and 3.68 AFY for industrial process. IEUA's estimated annual cost to conduct this program is approximately $126,250 for industrial process and $4,500 for cooling towers. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed Public Sector Incentive Program. This program offers incentives to purchase and install landscape water saving devices such as WBICs and HENs. This program would offer incentive amounts of $64 per WBIC and $8 per HEN. IEUA indicated the program can be applied towards approximately 1,407 institutions, 206 schools, and 27 colleges within IEUA's service area. IEUA indicated the approximate water savings per device in this program

is 0.0129 AFY per WBIC, and 0.004 AFY per HEN. IEUA's estimated annual cost to conduct this program is approximately $26,750. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed Save A Buck Program. This program offers commercial customers incentives for devices including HETs, ULFTs urinals, conductivity controllers, pH controllers, food steamers, ice machines, Water Brooms, dry vacuum pumps, WBICs and HENs. IEUA indicated the approximate water savings per device are 0.0425 AFY for HETs, 0.1227 AFY for ULFT urinals, 0.644 AFY for conductivity controllers, 1.944 AFY for pH controllers, 0.25 AFY for food steamers, 0.154 AFY for ice machines, 0.1534 AFY for Water Brooms, 0.0916 AFY for dry vacuum pumps, 0.0129 AFY for WBICs, and 0.004 HENs. IEUA's estimated annual cost to conduct this program is approximately $25,200. Additional information is provided in Appendix Q.

6.1.10 CONSERVATION PRICING [10631(F)(1)(**K**)]

The CUWCC refers to this BMP as “Foundational: Operations Practices – Retail Conservation Pricing.” FWC complies with this BMP. FWC implemented a two-tier conservation pricing rate structure on July 2, 2010 for its FWC service area. Approximately 70 percent of FWC’s water fund revenue comes from volumetric water sales. Residential customers are charged approximately 15 percent more for any water use above 16 ccf (hundred cubic feet) per month. FWC will continue to implement a rate structure that will remain compliant with this BMP. Information on water conservation savings, cost-benefit analysis, and water costs is being continuously collected and will be reported once every two years to the CUWCC.

6.1.11 WATER CONSERVATION COORDINATOR [10631(F)(1)(**L**)]

The CUWCC refers to this BMP as "Foundational: Operations Practices – Conservation Coordinator." FWC has a designated conservation coordinator or its equivalent and plans to maintain such a position in the future. Although previous information on water conservation savings, cost-benefit analysis, and water costs is currently not available, FWC has recently become a member of CUWCC and has allocated budget and resources to begin recording such information.

6.1.12 WATER WASTE PROHIBITION [10631(F)(1)(**M**)]

The CUWCC refers to this BMP as "Foundational: Operations Practices – Water Waste Prevention." FWC is governed by the laws and rulings of the CPUC. In compliance with the CPUC's request, FWC adopted Rule 14.1 "Water Conservation and Rationing Plan" in August of 2008. Although FWC does not have the legal authority to enact an "Ordinance" as does a City municipality, if water supplies warrant the need to implement mandatory water conservation, Rule 14.1 would suffice (FWC would be able to encourage its customers to conserve by enforcing the rules listed therein). In addition FWC will continue to support local legislation and regulations that prohibit water waste. Although previous information on water conservation savings, cost-benefit analysis, and water costs is currently not available, FWC has recently become a member of CUWCC and has allocated budget and resources to begin recording such information.

6.1.13 RESIDENTIAL ULTRA-LOW FLUSH TOILET REPLACEMENT PROGRAMS [10631(F)(1)(**N**)]

The CUWCC refers to this BMP as "Programmatic: Residential." FWC meets coverage for this BMP through the work of IEUA. In cooperation with MWD, IEUA re-launched a multi-family program to replace old toilets units with ULFT as of December

2009. Bottom Line Utility Solution, Inc. was contracted to install and dispose of these old toilets and replacing them with ULFT with $24 participant co-pay charge. On March 30, 2010, FWC entered into an MOU with IEUA to cover the $24 participant co-pay charge for customers within FWC's service area. The contract expires June 30, 2011. As of July 2011, this program will expand to also include single-family residents. FWC has also expanded its efforts and the expense to cover all co-pays for both multi and single family customers who participate in the program. A total of 11 ULFTs have been replaced for fiscal year 2009-10. To date, FWC has distributed 252 rebates for ULFTs. Information on water conservation savings, cost-benefit analysis, and water costs is provided in Appendix P. In addition, during fiscal year 2008-09, MWD offered rebates for HETs, or toilets with a gallons per minute use of 1.28 or less, to customers within its member agencies. The total number of HET rebates obtained by FWC customers was 1,062.

During fiscal year 2008-09, IEUA hired a contractor to install HETs to customers throughout their service area, including FWC. The total numbers of toilets installed in FWC under this program was approximately 2,000 toilets. Mailers were sent to all multi-family complexes in FWC offering the program. It is believed that this market is close to saturated.

The combined water savings attributed to the total HET rebates and HETs installed during fiscal year 2008-09 equal approximately 130 AF and a 2,603 over the lifetime of the products. These numbers are based on estimates from MWD’s estimated water savings calculations that list water savings of 0.0425 AF of water per device per year.

IEUA's Business Plan includes information on IEUA's Multi-family High Efficiency Toilet Direct Installation Program. This program involves the replacement of high volume toilets with new HETs in multi-family units and condos. IEUA indicated the program has saved approximately 25,606 AF to date. In addition, IEUA indicated the

program can be applied towards 12,582 potential units within the IEUA's service area which is equivalent to approximately 660 AFY in water conservation. IEUA's estimated cost to conduct this program is approximately $1.6 million. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's Commercial and Multi-family Save A Buck Program sponsored by MWD. This program provides different measures for IEUA customers to promote water conservation including ULFT flushometers, ULFT tank, HETs, and Waterless urinals. IEUA indicated the approximate current water savings to date within IEUA's service area for these measure are 2 AFY for ULFT flushometers, 742 AFY for ULFT tank, 1,812 AFY for HETs, and 1,567 AFY for Waterless urinals. IEUA indicated the approximate potential water savings within IEUA's service area for these measures are 977 AFY for HETs, and 305 to 457 AFY for Waterless urinals. There are no potential water savings for ULFT flushometers and ULFT tank. IEUA anticipates its estimated costs are $45 for ULFT flushometers, $5,075 for ULFT tank, $345,045 for HETs, and $0 for Waterless Urinals. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's Water Smart Program. This program offers residential customer landscape incentives including HETs. IEUA indicated the approximate current water savings to date within IEUA's service area is 898 AFY for HETs. IEUA indicated the approximate potential water savings is 5,161 AFY for HETs. IEUA anticipates its estimated cost is $0 for HETs. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed HET Incentive Program. This program offers single family customers a $100 rebate for the purchase of an HET. IEUA indicated the program can be applied towards approximately 121,021 fixtures within IEUA's service area which is the equivalent of approximately 5,161 AFY in water conservation. IEUA indicated the approximate water savings per HET unit in

this program is 0.03345 AFY. IEUA's estimated annual cost to conduct this program is approximately $62,500. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's Multi-family Toilet Direct Installation Program. This program offers new fixtures and the installation of HETs to replace high volume toilets in multi-family units and condos. IEUA indicated the program can be applied towards approximately 12,582 units within IEUA's service area which is the equivalent of approximately 660 AFY in water conservation. IEUA indicated the approximate water savings per HET unit in this program is 0.0425 AFY. IEUA's estimated annual cost to conduct this program is approximately $106,980. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed Comprehensive Restaurant Program. This program offers installation of HETs in the restaurant market. The program would also include marketing incentives for urinals offered through MWD's Save A Buck Program. IEUA indicated the program can be applied towards 1,398 restaurants within IEUA's service area. IEUA indicated the approximate water savings per HET in this program is 0.0425 AFY. IEUA's estimated annual cost to conduct this program is approximately $30,000. Additional information is provided in Appendix Q.

IEUA's Business Plan includes information on IEUA's proposed Save A Buck Program. This program offers commercial customers incentives for devices including HETs and ULFT urinals. IEUA indicated the approximate water savings for these devices are 0.0425 AFY for HETs, and 0.1227 AFY for ULFT urinals. IEUA's estimated annual cost to conduct this program is approximately $25,200. Additional information is provided in Appendix Q.

6.2 DEMAND MANAGEMENT MEASURES NOT IMPLEMENTED

Section 10631

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and non-economic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

6.2.1 WHOLESALE AGENCY PROGRAMS [10631(F)(1)(**J**)]

The CUWCC refers to this BMP as "Foundational: Operations Practices – Wholesale Assistance Programs." FWC is a retail water supplier, therefore wholesale agency programs are not applicable to FWC. However, FWC works cooperatively with MWD and IEUA to pursue and implement water conservation programs and outreach.

Chapter 7

COMPLETED URBAN WATER MANAGEMENT CHECKLIST

A completed Plan checklist, with page information indicating where the required element can be found within the Plan, is provided in Appendix Q.

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TABLES

TABLE 1
COORDINATION WITH APPROPRIATE AGENCIES

Agencies	Was Sent a Notice of Intent to Adopt	Was Contacted for Assistance	Participated in Developing the Plan	Was Sent a Copy of the Draft Plan	Commented on the Draft	Attended Public Meetings	Not Involved/ No Information
Chino Basin Watermaster	X		X	X			
City of Fontana	X		X	X			
City of Rancho Cucamonga	X		X	X			
City of Rialto	X		X	X			
City of San Bernardino	X		X	X			
County of San Bernardino	X		X	X			
Cucamonga Valley Water District	X		X	X			
Inland Empire Utilities Agency	X	X	X	X			
San Bernardino Valley Municipal Water District	X	X	X	X			
West Valley Water District	X		X	X			

TABLE 2

AVERAGE ANNUAL RAINFALL
IN THE FONTANA WATER COMPANY DIVISION AREA

YEAR	RAINFALL IN INCHES	YEAR	RAINFALL IN INCHES
1948	2.54	1980	15.77
1949	7.98	1981	8.1
1950	6.59	1982	15.07
1951	4.88	1983	22.91
1952	-	1984	5.72
1953	-	1985	6.48
1954	-	1986	9.22
1955	-	1987	8.84
1956	6.75	1988	8.07
1957	13.21	1989	4.37
1958	12.18	1990	5.34
1959	5.58	1991	11.97
1960	6.19	1992	13.82
1961	3.43	1993	17.93
1962	6.97	1994	9
1963	12.72	1995	18.1
1964	6.42	1996	9.52
1965	17.23	1997	10.01
1966	9.76	1998	18.21
1967	10.65	1999	4.46
1968	6.22	2000	5.78
1969	17.61	2001	8.66
1970	9.66	2002	3.8
1971	5.88	2003	9.66
1972	4.02	2004	12.41
1973	10.38	2005	15.17
1974	8.25	2006	5.95
1975	6.26	2007	4.06
1976	10.03	2008	7.65
1977	10.17	2009	3.01
1978	21.92	2010	-
1979	12.87		
58-YEAR AVERAGE			**9.58**

Notes: Based on Riverside Citrus Exp Station (Interagency Fire Weather)
2010 data is incomplete. 2010 data is not included in the 58-year average.

Source: Western Regional Climate Center and National Oceanic and Atmospheric Administration

Table 3
Climate

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Average Rainfall (in.)	2.05	2.12	1.59	0.76	0.23	0.06	0.04	0.11	0.24	0.31	0.89	1.18	9.58
Average Temperature (^{o}F)	54.13	55.60	57.60	61.48	66.13	71.44	77.36	77.85	74.60	67.48	59.53	54.47	64.69
Evapotranspiration (in.)	2.49	2.91	4.16	5.27	5.94	6.56	7.22	6.92	5.35	4.05	2.94	2.56	56.37

Notes: Based on Riverside Citrus Exp Station (Interagency Fire Weather)
Evapotranspiration based on UC Riverside Station

Source: Western Regional Climate Center and National Oceanic and Atmospheric Administration
California Irrigation Management Information System

TABLE 4
CURRENT AND PROJECTED POPULATION

Year	Population within Fontana Water Company's Service Area [1]	Percent Average Annual Increase of the Population
2010	209,035	--
2015	209,035	0.00
2020	221,603	1.20
2025	234,170	1.13
2030	246,738	1.07
2035	259,305	1.02

[1] Based on DCSE's Technical Memorandum, March 1, 2011. Incorporates data from the Southern California Association of Governments, Department of Finance, and US Census Bureau

TABLE 5
PAST, CURRENT, AND PROJECTED METERED ACCOUNTS

Year	Description	Water Use Sectors							System Losses	Total
		Residential	Commercial / Institutional	Industrial	Recycled Water	Landscape Irrigation	Other	Sub Total		
2005	No. of Metered Accounts	39,115	2,279	88	0	0	589	42,071		42,071
	Metered Deliveries (AF)	30,271	5,539	3,985	0	0	4,632	44,428	3,169	47,597
	No. of Unmetered Accounts	0	0	0	0	0	720	720		720
2010	No. of Metered Accounts	40,678	2,483	91	0	0	617	43,869		43,869
	Metered Deliveries (AF)	25,369	5,925	2,217	0	0	4,484	37,994	3,775	41,769
	No. of Unmetered Accounts	0	0	0	0	0	869	869		869
2015	No. of Metered Accounts	44,540	2,919	91	20	0	648	48,218		48,218
	Metered Deliveries (AF)	26,224	5,114	2,991	1,500	0	4,140	39,968	2,551	42,519
	No. of Unmetered Accounts	0	0	0	0	0	1002	1,002		1,002
2020	No. of Metered Accounts	48,723	3,245	91	30	0	741	52,830		52,830
	Metered Deliveries (AF)	26,884	5,243	3,066	2,500	0	4,244	41,936	2,677	44,613
	No. of Unmetered Accounts	0	0	0	0	0	1132	1,132		1,132
2025	No. of Metered Accounts	52,906	3,572	91	40	0	833	57,442		57,442
	Metered Deliveries (AF)	28,098	5,480	3,204	3,500	0	4,436	44,718	2,854	47,572
	No. of Unmetered Accounts	0	0	0	0	0	1262	1,262		1,262
2030	No. of Metered Accounts	57,089	3,899	91	50	0	926	62,055		62,055
	Metered Deliveries (AF)	29,313	5,717	3,343	4,500	0	4,628	47,500	3,032	50,532
	No. of Unmetered Accounts	0	0	0	0	0	1392	1,392		1,392
2035	No. of Metered Accounts	61,272	4,225	91	60	0	1,019	66,667		66,667
	Metered Deliveries (AF)	30,347	5,918	3,461	6,000	0	4,791	50,516	3,224	53,741
	No. of Unmetered Accounts	0	0	0	0	0	1522	1,522		1,522

Number of metered accounts and deliveries between 2005 and 2010 were based on data provided by FWC.

Number of metered accounts from 2015 to 2035 were based on percentage increase factors from FWC's “Water System Master Plan Update”, August 2008

Deliveries from 2015 to 2035 were based on FWC's Demands (See Table 8) less 6 percent system losses (FWC's "Water System Master Plan Update", August 2008)

Deliveries and number of recycled metered accounts from 2015 to 2035 were based on information from IEUA's "Recycled Water Three YearBusiness Plan", dated November 28, 2007 and IEUA's 2010 draft 2010 Urban Water Management Plan

TABLE 6
HISTORICAL AND PROJECTED WATER DEMAND
(ACRE-FEET)

Year	Total Demands [1]	Metered Deliveries [2]	Unaccounted Use [3]	Projected Water Demand for Lower Income Households [4]	Urban Water Use Target [5] (GPCD)
2005	47,597	44,428	3,169		
2006	49,356	46,137	3,219		
2007	49,879	46,832	3,046		
2008	47,569	43,800	3,769		
2009	44,363	40,942	3,422		
2010	41,769	37,994	3,775		
2015	42,519	39,968	2,551	7,719	197
2020	44,613	41,936	2,677	7,913	175
2025	47,572	44,718	2,854	8,271	175
2030	50,532	47,500	3,032	8,629	175
2035	53,741	50,516	3,224	8,933	175

[1] See Table 7 for 2005 to 2010; Projected water demands based on Urban Water Use Target and populations (Table 4).
[2] See Table 5
[3] Historical unaccounted use is equal to demand minus delivery ; Projected unaccounted use is based on 6 percent system losses (FWC's “Water System Master Plan Update”, August 2008)
[4] Included in "Total Demands" ; Lower income demands are approximately 29.4 percent of total residential demands
[5] See Chapter 3.2.2 and 3.2.3 for urban water use target and interim urban water use target, respectively

TABLE 7
CALCULATION OF BASELINE DAILY PER CAPITA WATER USE

Year	Total Water Supply (Excluding Recycled Water (in Service Area (AF)	Calculated Gross Water Use (gallons per day)	Population within Fontana Water Company Division [1]	Calculated Daily per Capita Use (gpcd)	Average Per Capita Water Use	
					10-Year Continuous [2] (gpcd)	5-Year Continuous [3] (gpcd)
1995	32,608	29,110,301	153,140	190		
1996	35,997	32,135,890	154,197	208		
1997	37,131	33,148,470	158,509	209		
1998	35,015	31,259,258	162,985	192		
1999	41,385	36,945,865	169,863	218		
2000	43,786	39,089,733	175,090	223		
2001	43,098	38,475,934	179,775	214		
2002	46,147	41,197,838	185,069	223		
2003	46,785	41,767,097	192,254	217		
2004	49,498	44,189,467	195,081	227		
2005	47,597	42,492,025	197,907	215	215	
2006	49,356	44,062,607	200,133	220	216	
2007	49,879	44,529,183	202,358	220	217	
2008	47,569	42,466,689	204,584	208	218	218
2009	44,363	39,605,098	206,809	192	216	211
2010	41769	37,289,545	209,035	178	211	204

10-Year Baseline Daily Per Capita Water Use= 218 gallons per capita per day. [4]
5-Year Baseline Daily Per Capita Water Use= 218 gallons per capita per day. [5]

[1] Based on DCSE's Technical Memorandum, March 1, 2011. Incorporates data from the Southern California Association of Governments, Department of Finance, and US Census Bureau
[2] Average per capita water use for first base period of 10-year continuous, ending no earlier than December 31, 2004 and no later than December 31, 2010.
[3] Average per capita water use for second base period of 5-year continuous, ending no earlier than December 31, 2007 and no later than December 31, 2010.
[4] Highest value calculated for a 10-year continuous period between 1995 and 2010.
[5] Highest value calculated for a 5-year continuous period between 2004 and 2010.

TABLE 8
PROJECTED WATER DEMANDS BASED ON URBAN WATER USE TARGETS
(ACRE-FEET)

Year	Population [1]	Urban Water Use Target [2] (gpcd)	FWC's Projected Daily Per Capita Use [3] (gpcd)	Total Potable Demands (gpd)	Total Potable Demands (AF)	Total Additional Recycled Water Demands [4] (AF)	Total Demands (AF)
2015	209,035	197	178	37,289,545	41,769	750	42,519
2020	221,603	175	175	38,712,416	43,363	1,250	44,613
2025	234,170	175	175	40,907,778	45,822	1,750	47,572
2030	246,738	175	175	43,103,315	48,282	2,250	50,532
2035	259,305	175	175	45,298,678	50,741	3,000	53,741

[1] See Table 4

[2] See Table 7

[3] FWC's projected daily per capita use in 2015 is based on FWC's daily per capita use in 2010.

[4] Approximately 50 percent of any future recycled water demands has been estimated to result from new recycled water customers and usage. The remaining 50 percent of recycled water demands has been estimated to offset potable water supplies. See Table 9 for projected total recycled water demands.

TABLE 9
HISTORICAL AND PROJECTED WATER SUPPLIES (NORMAL YEAR)
(ACRE-FEET)

Year	Groundwater Supplies						Surface Water Supplies	Imported Water Supplies		Recycled Water Supplies	Total [1]
	Chino Basin	Rialto Basin	No Man's Land Basin	Lytle Basin	Sub Total Groundwater	Percentage Groundwater of Total Supply	Lylte Creek	IEUA	SBVMWD	Recycled	
Historical											
1995	8,609	2,111	2,235	8,366	21,321	65.4%	11,286	0	0	0	32,608
1996	11,319	2,271	3,137	11,726	28,453	79.0%	7,543	0	0	0	35,997
1997	14,852	2,596	904	11,950	30,302	81.6%	6,829	0	0	0	37,131
1998	11,054	2,891	0	9,728	23,673	67.6%	11,342	0	0	0	35,015
1999	17,175	2,935	0	15,540	35,650	86.1%	5,734	0	0	0	41,385
2000	20,555	3,552	2,289	13,236	39,631	90.5%	4,155	0	0	0	43,786
2001	18,766	6,106	3,123	8,869	36,864	85.5%	6,235	0	0	0	43,098
2002	23,060	9,452	3,135	7,520	43,166	93.5%	2,048	0	933	0	46,147
2003	22,110	9,321	3,783	6,029	41,243	88.2%	3,502	0	2,040	0	46,785
2004	24,718	8,173	3,930	5,664	42,485	85.8%	4,484	0	2,530	0	49,498
2005	18,499	7,252	3,550	11,424	40,726	85.6%	6,352	0	520	0	47,597
2006	14,747	5,695	3,683	12,593	36,718	74.4%	11,999	0	640	0	49,356
2007	19,622	7,325	3,930	15,021	45,899	92.0%	3,980	0	0	0	49,879
2008	16,192	6,312	4,165	10,523	37,191	78.2%	7,613	2,636	129	0	47,569
2009	14,490	8,480	4,293	7,789	35,051	79.0%	5,390	3,608	315	0	44,363
2010	9,921	7,782	4,421	7,073	29,197	69.9%	11,473	1,012	87	0	41,769
Projected (Normal Year)											
2015	5,319	7,600	6,000	9,400	28,319	66.6%	5,700	5,000	2,000	1,500	42,519
2020	6,413	7,600	6,000	9,400	29,413	65.9%	5,700	5,000	2,000	2,500	44,613
2025	8,372	7,600	6,000	9,400	31,372	65.9%	5,700	5,000	2,000	3,500	47,572
2030	10,332	7,600	6,000	9,400	33,332	66.0%	5,700	5,000	2,000	4,500	50,532
2035	12,041	7,600	6,000	9,400	35,041	65.2%	5,700	5,000	2,000	6,000	53,741

[1] See Table 8 for total projected normal year demands

TABLE 10
PROJECTED WATER SUPPLIES (SINGLE AND MULTIPLE DRY YEARS)
(ACRE-FEET)

Year	Groundwater Supplies						Surface Water Supplies	Imported Water Supplies		Recycled Water Supplies	Total [1]
	Chino Basin	Rialto Basin	No Man's Land Basin	Lytle Basin	Sub Total Groundwater	Percentage Groundwater of Total Supply	Lylte Creek	IEUA	SBVMWD	Recycled	
Projected (Single Dry Year)											
2015	10,856	6,200	6,000	11,400	34,456	76.8%	5,900	2,000	1,000	1,500	44,856
2020	12,065	6,200	6,000	11,400	35,665	75.8%	5,900	2,000	1,000	2,500	47,065
2025	14,187	6,200	6,000	11,400	37,787	75.3%	5,900	2,000	1,000	3,500	50,187
2030	16,309	6,200	6,000	11,400	39,909	74.9%	5,900	2,000	1,000	4,500	53,309
2035	18,194	6,200	6,000	11,400	41,794	73.7%	5,900	2,000	1,000	6,000	56,694
Projected (Multiple Dry Year 1)											
2015	11,331	6,200	6,000	11,400	34,931	77.1%	5,900	2,000	1,000	1,500	45,331
2020	12,564	6,200	6,000	11,400	36,164	76.0%	5,900	2,000	1,000	2,500	47,564
2025	14,718	6,200	6,000	11,400	38,318	75.6%	5,900	2,000	1,000	3,500	50,718
2030	16,873	6,200	6,000	11,400	40,473	75.1%	5,900	2,000	1,000	4,500	53,873
2035	18,795	6,200	6,000	11,400	42,395	74.0%	5,900	2,000	1,000	6,000	57,295
Projected (Multiple Dry Year 2)											
2015	9,232	6,200	6,000	11,400	32,832	75.9%	5,900	2,000	1,000	1,500	43,232
2020	10,361	6,200	6,000	11,400	33,961	74.9%	5,900	2,000	1,000	2,500	45,361
2025	12,370	6,200	6,000	11,400	35,970	74.4%	5,900	2,000	1,000	3,500	48,370
2030	14,378	6,200	6,000	11,400	37,978	73.9%	5,900	2,000	1,000	4,500	51,378
2035	16,141	6,200	6,000	11,400	39,741	72.7%	5,900	2,000	1,000	6,000	54,641
Projected (Multiple Dry Year 3)											
2015	6,318	6,200	6,000	11,400	29,918	74.2%	5,900	2,000	1,000	1,500	40,318
2020	7,304	6,200	6,000	11,400	30,904	73.1%	5,900	2,000	1,000	2,500	42,304
2025	9,110	6,200	6,000	11,400	32,710	72.5%	5,900	2,000	1,000	3,500	45,110
2030	10,916	6,200	6,000	11,400	34,516	72.0%	5,900	2,000	1,000	4,500	47,916
2035	12,459	6,200	6,000	11,400	36,059	70.8%	5,900	2,000	1,000	6,000	50,959

[1] See Table 14 and Table 15 for total projected single dry and multiple dry year demands

TABLE 11
SUPPLY RELIABILITY - HISTORICAL CONDITIONS
(ACRE-FEET)

	Average/ Normal Year (2003)	Single Dry Year (2006)	Multiple Dry Years		
			Year 1 (2007)	Year 2 (2008)	Year 3 (2009)
FWC Water Production	46,785	49,356	49,879	47,569	44,363
Percent of Normal Year Supply		105.5%	106.6%	101.7%	94.8%

See Table 9 for historical production

TABLE 12
SUPPLY RELIABILITY - THREE-YEAR ESTIMATED MINIMUM
(ACRE-FEET PER YEAR)

Sources of Supply	Normal Year (2003)[1(1)]	Multiple Dry Years		
		Year 2011 [(2)]	Year 2012 [(2)]	Year 2013 [(2)]
Total Supply	46,785	49,879	47,569	44,363

[(1)] See Table 8 (Based on year 2003)
[(2)] See Table 8 (Years 2011, 2012, and 2013 based on years 2007, 2008, and 2009, respectively)

TABLE 13
PROJECTED NORMAL WATER YEAR SUPPLY AND DEMAND COMPARISON
(ACRE-FEET)

	2015	2020	2025	2030	2035
Projected Normal Water Year Supply					
Total Supply [1]	42,519	44,613	47,572	50,532	53,741
Projected Normal Water Year Demand					
Demand [2]	42,519	44,613	47,572	50,532	53,741
Projected Normal Year Supply and Demand Comparison					
Difference (Supply minus Demand)	0	0	0	0	0

[1] See Table 9.
[2] See Table 8.

TABLE 14
PROJECTED SINGLE-DRY WATER YEAR SUPPLY AND DEMAND COMPARISON
(ACRE-FEET)

	2015	2020	2025	2030	2035
Projected Single-Dry Year Water Supply					
Total Supply [1]	44,856	47,065	50,187	53,309	56,694
Projected Single-Dry Year Water Demand					
Demand [2]	44,856	47,065	50,187	53,309	56,694
Projected Single-Dry Year Water Supply and Demand Comparison					
Difference (Supply minus Demand)	0	0	0	0	0

[1] See Table 10.
[2] Based on ratio between Normal Water Year with Single-Dry Year. See Tables 8 and 11.

TABLE 15
PROJECTED MULTIPLE-DRY YEAR WATER SUPPLY AND DEMAND COMPARISON
(ACRE-FEET)

Multiple Dry Year 1	2015	2020	2025	2030	2035
Projected Multiple-Dry Year Water Supply					
Supply [1]	45,331	47,564	50,718	53,873	57,295
Projected Multiple-Dry Year Water Demand					
Demand [2]	45,331	47,564	50,718	53,873	57,295
Projected Multiple-Dry Year Water Supply and Demand Comparison					
Difference (Supply minus Demand)	0	0	0	0	0

Multiple Dry Year 2	2015	2020	2025	2030	2035
Projected Multiple-Dry Year Water Supply					
Supply [1]	43,232	45,361	48,370	51,378	54,641
Projected Multiple-Dry Year Water Demand					
Demand [2]	43,232	45,361	48,370	51,378	54,641
Projected Multiple-Dry Year Water Supply and Demand Comparison					
Difference (Supply minus Demand)	0	0	0	0	0

Multiple Dry Year 3	2015	2020	2025	2030	2035
Projected Multiple-Dry Year Water Supply					
Supply [1]	40,318	42,304	45,110	47,916	50,959
Projected Multiple-Dry Year Water Demand					
Demand [2]	40,318	42,304	45,110	47,916	50,959
Projected Multiple-Dry Year Water Supply and Demand Comparison					
Difference (Supply minus Demand)	0	0	0	0	0

[1] See Table 10.
[2] Based on ratio between Normal Water Year with Multiple Dry Years. See Tables 8 and 11.

PLATES

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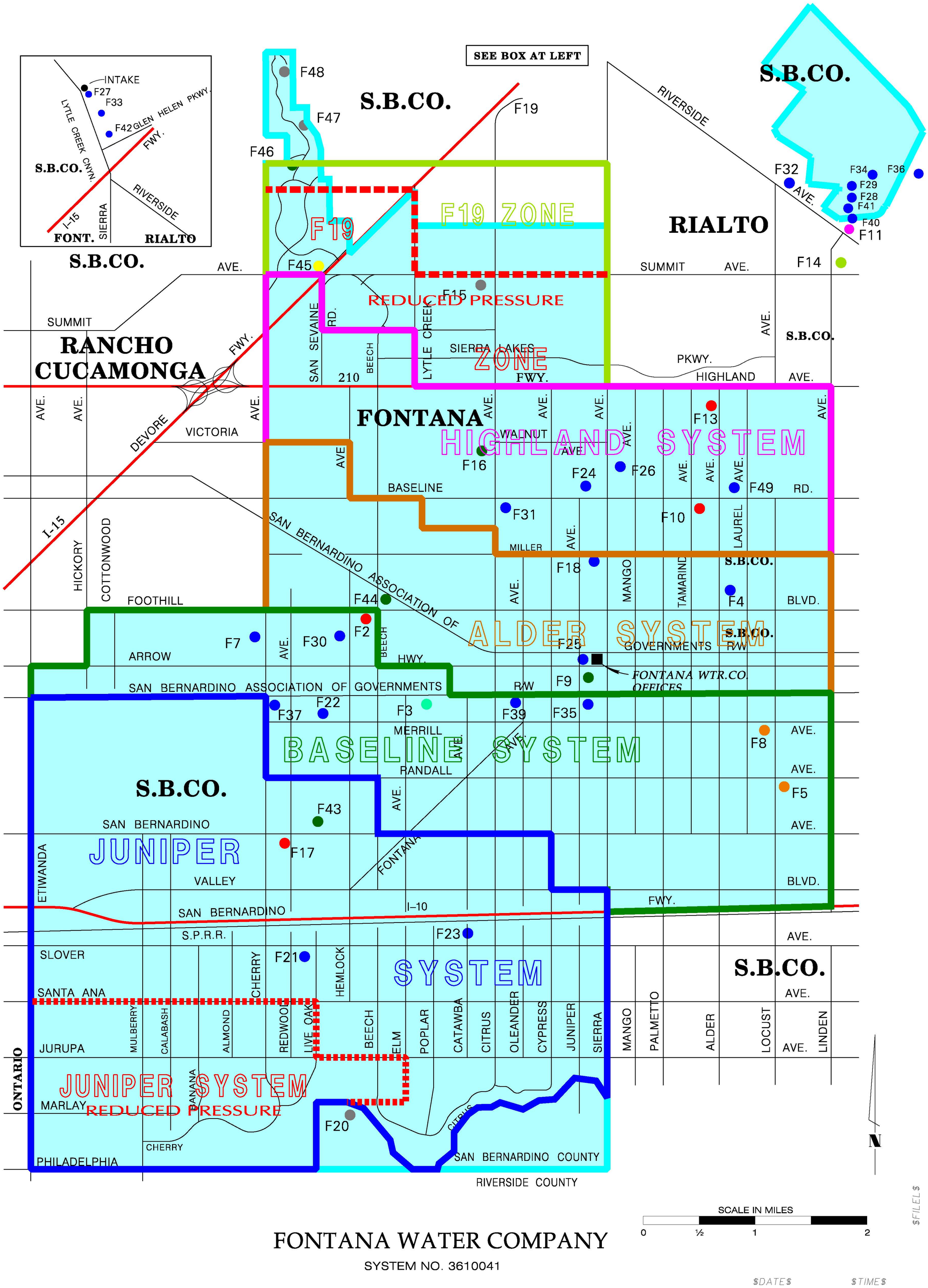
PLATES

PLATE 1 FONTANA WATER COMPANY SERVICE AREA



FONTANA WATER COMPANY

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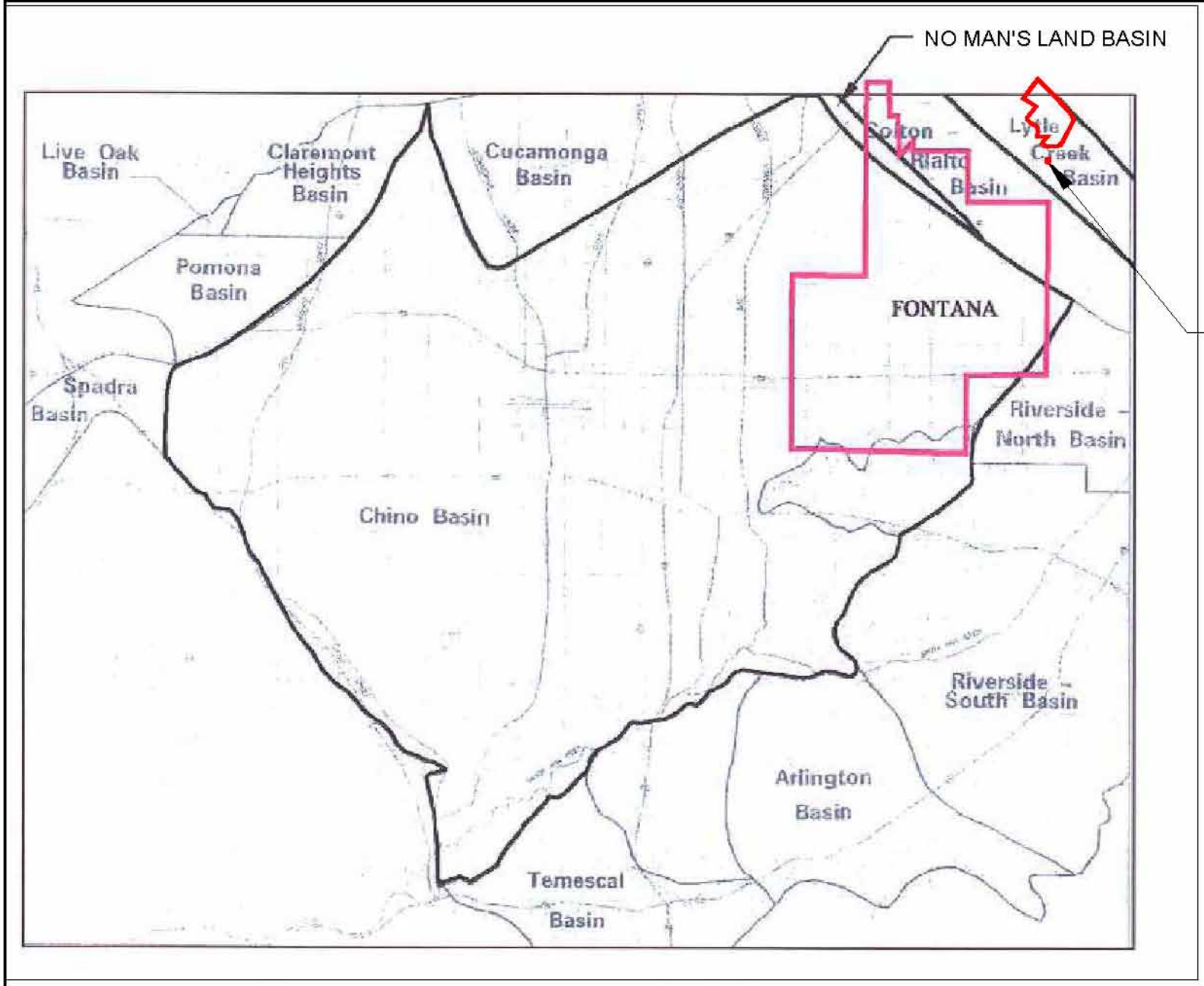

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FONTANA WATER COMPANY

GROUNDWATER BASINS

PLATE 2

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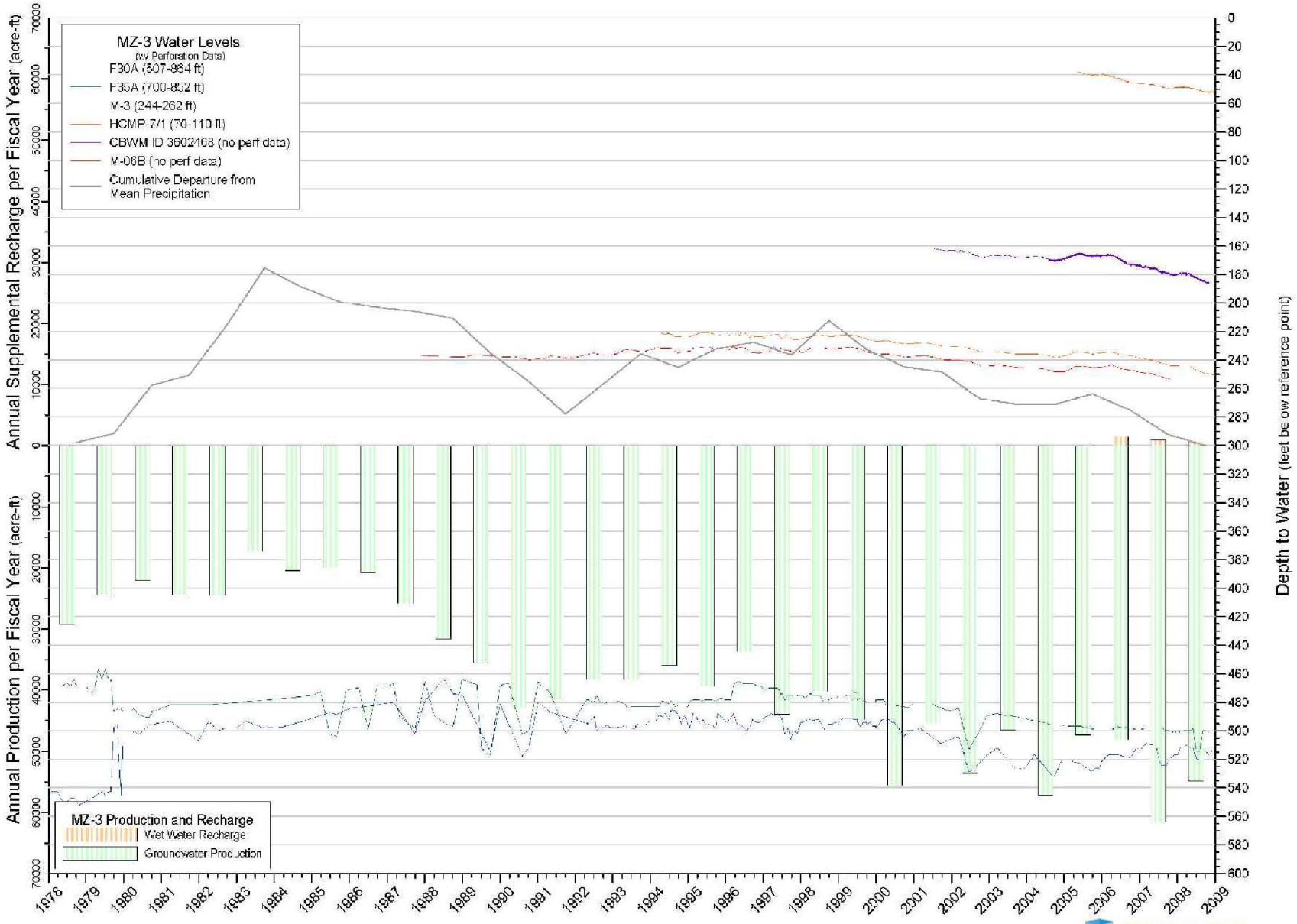

Source : Chino Basin Management Program
2008 State of the Basin Report, Wildermuth, November 2009

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FONTANA WATER COMPANY

HISTORICAL CHINO BASIN (EASTERN) GROUNDWATER LEVELS

PLATE 3

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